European Preferred Parts List

Issue: 26
Issue Date: 2014-05-05

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	CH (Type II)	Capacitors, Ceramic, Type II, High Capacitance, Based on cse styles BR, CV, CH Variants 01 to 74 capacitance range for 50V, 100V and 200V Variants 01 to 52, and 59 to 60, for 500V are qualified Operatingng Temperature Range (ºC): 55 to +125		DIL, DIL-L & RADIAL	• AVX Ltd	ESCC QPL	Capacitors no longer use a varnish finish
1	CNC 31 to 34 (NE, PE and PLE)	Ceramic dielectic, Fixed, high capacitance. Tolerance: 10, 20%. Variants 01 to 16. 16V : 2.2 to 68 F 25V: 1.2 to 39 F		DIL, SMD	• EUROFARAD	ESCC QPL	
1	CNC53 to CNC56	Ceramic dielectic, Fixed, high capacitance. Tolerance: 10, 20% Variants 01 to 04, 08 to 11, 15 to 18 and 22 to 25 All values 50V to 500V (as per detailed Spec)		DIL, SMD	• EUROFARAD	ESCC QPL	
1	VR, CV and CH (Type II)	Capacitors Ceramic, Type II, High Voltage, 1.0 to 5.0KV, based on types VR, CV and CH Variant 01 to 22 Tolerance: 10%, 20% Operating Temperature Range (ºC): 55 to +125		DIL, DIL-L, RADIAL	• AVX Ltd	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	0603 Type I (CEC14S)	Variant 06 Type (size); Capacitance ranges (pF); Voltage (16, 25, 50, 100V) CEC14S (0603); 10-1000; 10-680; 1-560; 1-330 Tolerance: 0.25-0.5-1(pf) if C<10pf; 1, 2, 5, 10 % if C>=10pF Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	0603 Type II (CNC14S)	Variants 06 and 07 Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC14S (0603); 0,39-39; 0,39-33; 0,01-22; 0,01-12 Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	0603, 0805, 1206, 1210, 1812, 2220 (TYPE II). CNC 04S types	Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC14 04S (0603, vars 01, 13); 0,39-100; 0,39-33; 0,01-22; 0,01-12 CNC2 04S (0805, vars 02, 14); 6,8-390; 6,8-150; 0,1-100; 0,68-47 CNC12 04S (1206, vars 03, 15); 10-1000; 10-270; 0,47-180; 0,47-120 CNC4 04S (1210, vars 04, 16); 33-820; 33-560; 2,2-390; 2,2-220 CNC6 04S (1812, vars 05, 17); 100-1800; 100-1200; 3,9-820; 3,9-470 CNC7 04S (2220, vars 06, 18); 150-3900; 150-2200; 22-1800; 22-1000 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	0805 Type I (A_12C)	Variants 01, 03 and 06 Type (size); Capacitance ranges (pF); Voltage (V); Tolerance (%) A_12C (0805); 4.7 to 9.1 50,100 0.5pf A_12C (0805); 10 to 1500 50,100 1, 2, 5, 10 TC (ppm/°C):±30 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	0805 Type I (CEC2S)	Variant 06 Type (size); Capacitance ranges (pF); Voltage (16, 25, 50, 100V) CEC2S (0805); 10-2700; 10-2200; 1-1800; 1-1200 Tolerance: 0.25-0.5-1(pf) if C<10pf; 1, 2, 5, 10 % if C>=10pF Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	0805 Type II (A_12G, A612Z)	Variants 01, 03, 06 and 07 Type (size); Capacitance ranges (nF); Voltage (V); variants A_12G (0805); 0.82 to 47 25, 50, 100 01, 03, 06 A_612Z (0805); 10 to 100 25, 50, 100 07 See spec for cap-voltange-tolerance combinations TC (ppm/°C):±30; Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	0805 Type II (CNC2S)	Variants 06 and 07 Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC2S (0805); 6,8-220; 6,8-150; 0,1-100; 0,68-47 Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	1206 Type I (A_20C)	Variants 01, 03 and 06 Type (size); Capacitance ranges (pF); Voltage (V); Tolerance (%) A_20C (0805); 10 to 3900 50,100 1, 2, 5, 10 TC (ppm/°C):±30 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	1206 Type I (CEC12S)	Variant 06 Type (size); Capacitance ranges (pF); Voltage (16, 25, 50, 100V) CEC12S (1206); 10-6800; 10-6200; 1-5600; 1-3900 Tolerance: 0.25-0.5-1(pf) if C<10pf; 1, 2, 5, 10 % if C>=10pF Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	1206 Type II (A_20G, A620Z)	Variants 01, 03, 06 and 07 Type (size); Capacitance ranges (nF); Voltage (V); variants A_20G (1206); 2.2 to 100 25, 50, 100 01, 03, 06 A620Z (1260); 27 to 220 25, 50, 100 07 See spec for cap-voltange-tolerance combinations TC (ppm/°C):±30; Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1206 Type II (CNC12S)	Variants 06 and 07 Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC12S (1206); 10-390; 10-270; 0,47-180; 0,47-120 Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	1210 Type I (A_13C)	Variants 01, 03 and 06 Type (size); Capacitance ranges (pF); Voltage (V); Tolerance (%) A_13 (1210); 22 to 6800 50,100 1, 2, 5, 10 A_13 (1210); 8200 to 10000 50 1, 2, 5, 10 TC (ppm/ºC):±30 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	1210 Type I (CEC4S)	Variant 06 Type (size); Capacitance ranges (pF); Voltage (16, 25, 50, 100V) CEC4S (1210); 10-15000; 10-13000; 10-12000; 10-6800 Tolerance: 0.25-0.5-1(pf) if C<10pf; 1, 2, 5, 10 % if C>=10pF Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	1210 Type II (A_13G, A613Z)	Variants 01, 03, 06 and 07 Type (size); Capacitance ranges (nF); Voltage (V); variants A_13G (1210); 3.9 to 220 25, 50, 100 01, 03, 06 A_613Z (1210); 47 to 470 25, 50, 100 07 See spec for cap-voltange-tolerance combinations TC (ppm/ºC):±30; Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	1210 Type II (CNC4S)	Variants 06 and 07 Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC4S (1210); 33-820; 33-560; 2,2-390; 2,2-220 Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1812 and 1825 (Type II), hIgh Voltage	Capacitors, fixed, chip, ceramic, Type II, High Voltage, based on types 1812 and 1825 Variants 01 to 12 (metallised pads) Package; Voltage (kV); Cap range (pF) 1812; 1; 3900-22000 1812; 2; 1500-1800 1812; 3; 820-1000 1825; 1; 27000-56000 1825; 2; 2200-6800 1825; 3; 820-2700 Tolerance: 10%, 20% Operating Temperature Range (°C):55 to +125		SMD	• AVX Ltd	ESCC QPL	
1	1812 Type I (A_14C)	Variants 01, 03 and 06 Type (size); Capacitance ranges (pF); Voltage (V); Tolerance (%) A_14 (1812); 100 to 15000 50,100 1, 2, 5, 10 TC (ppm/ºC):±30 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	1812 Type I (CEC6S)	Variant 06 Type (size); Capacitance ranges (pF); Voltage (16, 25, 50, 100V) CEC6S (1812); 100-33000; 100-30000; 100-22000; 100-12000 Tolerance: 0.25-0.5-1(pf) if C<10pf; 1, 2, 5, 10 % if C>=10pF Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	1812 Type II (A_14G, A614Z)	Variants 01, 03, 06 and 07 Type (size); Capacitance ranges (nF); Voltage (V); variants A_14G (1812); 6.8 to 470 25, 50, 100 01, 03, 06 A_614Z (1812); 82 to 1000 25, 50, 100 07 See spec for cap-voltange-tolerance combinations TC (ppm/ºC):±30; Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	1812 Type II (CNC6S)	Variants 06 and 07 Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC6S (1812); 100-1800; 100-1200; 3,9-820; 3,9-470 Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2220 Type I (A_15C)	Variants 01, 03 and 06 Type (size); Capacitance ranges (pF); Voltage (V); Tolerance (%) A_15C(2220); 470 to 33000 50,100 1, 2, 5, 10 TC (ppm/ºC):±30 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	2220 Type I (CEC7S)	Variant 06 Type (size); Capacitance ranges (pF); Voltage (16, 25, 50, 100V) CNC7S (2220); 150-3900; 150-2200; 22-1800; 22-1000 Tolerance: 0.25-0.5-1(pf) if C<10pf; 1, 2, 5, 10 % if C>=10pF Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
1	2220 Type II (A_15G, A615Z)	Variants 01, 03, 06 and 07 Type (size); Capacitance ranges (nF); Voltage (V); variants A_15G (2220); 18 to 1000 25, 50, 100 01, 03, 06 A_615Z (2220); 180 to 2200 25, 50, 100 07 See spec for cap-voltange-tolerance combinations TC (ppm/ºC):±30; Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• AVX - DIVISION TPC	ESCC QPL	
1	2220 Type II (CNC7S)	Variants 06 and 07 Type (size); Capacitance ranges (nF); Voltage (16, 25, 50, 100V). CNC7S (2220); 150-3900; 150-2200; 22-1800; 22-1000 Tolerance (%): 5, 10, 20 Operating temperature range (°C.): -55 to +125		SMD	• EUROFARAD	ESCC QPL	
2	Type II Dielectric BME ceramic capacitors 0603, 0805, 1206, 1210 and 1812	Surface Mount Multilayer Chip Capacitors, manufactured using Base Metal Electrode (BME) technology. Size (variant): Capacitance ranges (nF); Voltage (25, 50, 100V). Value Serie E12 0603 (01): 2.2-180; 2.2-150; 2.2-18 0805 (02): 2.2-1000; 2.2-470; 2.2-100 1206 (03): 18-2200; 18-1000; 18-390 1210 (04): 47-1000; 47-1000; 47-820 1812 (05): 150-8200; 150-4700; 150-2200 Capacitance Tolerance Values, 5%, 10%, 20%. Operating temperature range (°C.): -55 to +125	COL/ESA/PI-03 issue3 revB	0603, 0805, 1206, 1210, 1812	• AVX Ltd	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	Type II Dielectric BME ceramic capacitors 0603, 0805, 1206, 1210 and 1812	Surface Mount Multilayer Chip Capacitors, manufactured using Base Metal Electrode (BME) technology. Size (variant): Capacitance ranges (nF); Voltage (25, 50, 100V). Value Serie E12 0603 (01): 2.2-180; 2.2-150; 2.2-18 0805 (02): 2.2-1000; 2.2-470; 2.2-100 1206 (03): 18-2200; 18-1000; 18-390 1210 (04): 47-1000; 47-1000; 47-820 1812 (05): 150-8200; 150-4700; 150-2200 Capacitance Tolerance Values, 5%, 10%, 20%. Operating temperature range (°C.): -55 to +125	COL/ESA/PI-03 issue3 revB	0603, 0805, 1206, 1210, 1812	• AVX Ltd	Not qualified	
2	Type II Dielectric BME ceramic capacitors 0603, 0805, 1206, 1210 and 1812	Surface Mount Multilayer Chip Capacitors, manufactured using Base Metal Electrode (BME) technology. Size (variant): Capacitance ranges (nF); Voltage (25, 50, 100V). Value Serie E12 0603 (01): 2.2-180; 2.2-150; 2.2-18 0805 (02): 2.2-1000; 2.2-470; 2.2-100 1206 (03): 18-2200; 18-1000; 18-390 1210 (04): 47-1000; 47-1000; 47-820 1812 (05): 150-8200; 150-4700; 150-2200 Capacitance Tolerance Values, 5%, 10%, 20%. Operating temperature range (°C.): -55 to +125	COL/ESA/PI-03 issue3 revB	0603, 0805, 1206, 1210, 1812	• AVX Ltd	Not qualified	
2	Type II Dielectric BME ceramic capacitors 0603, 0805, 1206, 1210 and 1812	Surface Mount Multilayer Chip Capacitors, manufactured using Base Metal Electrode (BME) technology. Size (variant): Capacitance ranges (nF); Voltage (25, 50, 100V). Value Serie E12 0603 (01): 2.2-180; 2.2-150; 2.2-18 0805 (02): 2.2-1000; 2.2-470; 2.2-100 1206 (03): 18-2200; 18-1000; 18-390 1210 (04): 47-1000; 47-1000; 47-820 1812 (05): 150-8200; 150-4700; 150-2200 Capacitance Tolerance Values, 5%, 10%, 20%. Operating temperature range (°C.): -55 to +125	COL/ESA/PI-03 issue3 revB	0603, 0805, 1206, 1210, 1812	• AVX Ltd	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	CSS33	Tantalum Solid Electrolyte Capacitance Range (µF) / Tol. (±%) / Rated Volt. (V) / Case Size 1.2 to 39 / 10 / 50 / Case A, B, C, D 1.8 to 68 / 10 / 35 / Case B, C, D 2.7 to 180 / 10 / 20 / Case A, B, C, D 6.8 to 560 / 10 / 10 / Case A, B, C, D Dimensions (max mm) : Case A : 10.72 x 3.84 DIA Case B : 15.49 x 5.11 DIA Case C : 20.88 x 7.75 DIA Case D : 23.42 x 9.33 DIA Operating temperature range (°C) : -55 to +125.	MIL-PRF-39003_10D	Axial	• KEMET ELECTRONICS Corp.	MIL QPL	SEE QPL FOR FAILURE RATE C VALUES.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	CTC21	Tantalum Solid Electrolyte Capacitance range (µF) Tol. (± %) Rated Volt. (V) Dimensions (max mm) 10 10 63 11.5 x 9.5 x 5 22 10 63 11.5 x 13 x 6 15 10 50 11.5 x 9.5 x 5 22 10 40 11.5 x 9.5 x 5 47 10 40 11.5 x 13 x 6 33 10 25 11.5 x 9.5 x 5 68 10 25 11.5 x 13 x 6 47 10 20 11.5 x 9.5 x 5 100 10 20 11.5 x 13 x 6 68 10 16 11.5 x 9.5 x 5 150 10 16 11.5 x 13 x 6 100 10 10 11.5 x 9.5 x 5 220 10 10 11.5 x 13 x 6 150 10 6.3 11.5 x 9.5 x 5 330 10 6.3 11.5 x 13 x 6 Operating temperature range (°C) : -55 to +125		SMD	• FIRADEC	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	CTC21E	Tantalum Solid Electrolyte Capacitance range (µF) Tol. (± %) Rated Volt. (V) Dimensions (max mm) 22 10 50 11.5 x 9.5 x 5 47 10 50 11.5 x 13 x 6 33 10 40 11.5 x 9.5 x 5 68 10 40 11.5 x 13 x 6 47 10 25 11.5 x 9.5 x 5 100 10 25 11.5 x 13 x 6 100 10 20 11.5 x 9.5 x 5 220 10 20 11.5 x 13 x 6 150 10 16 11.5 x 9.5 x 5 330 10 16 11.5 x 13 x 6 220 10 10 11.5 x 9.5 x 5 470 10 10 11.5 x 13 x 6 330 10 6.3 11.5 x 9.5 x 5 680 10 6.3 11.5 x 13 x 6 Operating temperature range (°C) : -55 to +125		SMD	• FIRADEC	Not qualified	Bigger anodes require further attention during parts mounting

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA CWS11 FH 686 *	Case Code : 7343H Rated voltage (VDC) : 10V Nominal capacitance (F) : 68 ESR : 0.08 Ohm Capacitance tolerance * : J(±5%), K(±10%), M(±20%) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C Terminal finish : Sn90Pb10 solder plate JAXA CWS11 FH 686 * is recommended as output capacitor for JAXA2020/01011DBCR** POL DC/DC converter.	jaxa_qts_2040_k201_1(2)	SMD	• Matsuo Electric Co., Ltd.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2040 , JAXA-QTS-2040 Appendix K - Detail specification : JAXA-QTS-2040/K201 - Application data sheet : JAXA-ADS-2040/K201 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA CWS11 FH 686 *	Case Code : 7343H Rated voltage (VDC) : 10V Nominal capacitance (F) : 68 ESR : 0.08 Ohm Capacitance tolerance * : J(±5%), K(±10%), M(±20%) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C Terminal finish : Sn90Pb10 solder plate JAXA CWS11 FH 686 * is recommended as output capacitor for JAXA2020/01011DBCR** POL DC/DC converter.	jaxa_qts_2040_k201_1(2)	SMD	• Matsuo Electric Co., Ltd.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2040 , JAXA-QTS-2040 Appendix K - Detail specification : JAXA-QTS-2040/K201 - Application data sheet : JAXA-ADS-2040/K201 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA CWS11 FH 686 *	Case Code : 7343H Rated voltage (VDC) : 10V Nominal capacitance (F) : 68 ESR : 0.08 Ohm Capacitance tolerance * : J(±5%), K(±10%), M(±20%) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C Terminal finish : Sn90Pb10 solder plate JAXA CWS11 FH 686 * is recommended as output capacitor for JAXA2020/01011DBCR** POL DC/DC converter.	jaxa_qts_2040_k201_1(2)	SMD	• Matsuo Electric Co., Ltd.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2040 , JAXA-QTS-2040 Appendix K - Detail specification : JAXA-QTS-2040/K201 - Application data sheet : JAXA-ADS-2040/K201 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA CWS11 FH 686 *	Case Code : 7343H Rated voltage (VDC) : 10V Nominal capacitance (F) : 68 ESR : 0.08 Ohm Capacitance tolerance * : J(±5%), K(±10%), M(±20%) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C Terminal finish : Sn90Pb10 solder plate JAXA CWS11 FH 686 * is recommended as output capacitor for JAXA2020/01011DBCR** POL DC/DC converter.	jaxa_qts_2040_k201_1(2)	SMD	• Matsuo Electric Co., Ltd.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2040 , JAXA-QTS-2040 Appendix K - Detail specification : JAXA-QTS-2040/K201 - Application data sheet : JAXA-ADS-2040/K201 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.
1	TAJ	Capacitors, Leadless Surface Mount, Tantalum, Solid Electrolyte, Type TAJVariants 01 to 07 and 11 to 17Voltages: 4 to 50VTolerance: 10%,20%See spec for voltage-case-capacitance combinationOperating temperature range (°C) : -55 to +125		SMD	• AVX Czech Republic SRO	ESCC QPL	Case A&B available in NILO Case C, D & E available in Copper only.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	TES low ESR	Tantalum Solid Electrolyte, Low ESR Variants 01 to 05. Capacitance range 1uF to 470uF. Voltage range 6.3<V to 50V (C-V combinations in accordance with ESCC 3012/004) Size A (max mm) : 3.2 x 1.6 x 1.6 (1206) Size B (max mm) : 3.5 x 2.8 x 1.9 (1210) Size C (max mm) : 6.0 x 3.2 x 2.6 (2312) Size D (max mm) : 7.3 x 4.3 x 2.9 (2917) Size E (max mm) : 7.3 x 4.3 x 4.1 (2917) Operating temperature range (°C) : -55 to +125		SMD	• AVX Czech Republic SRO	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	CLR79	30 uF to 1200 uF (6 V) 25 uF to 850 uF (8 V) 20 uF to 750 uF (10 V) 15 uF to 540 uF (15 V) 8 uF to 300 uF (30 V) 5 uF to 160 uF (50 V) 3.5 uF to 110 uF (75 V) 2.5 uF to 86 uF (100 V) MIL Part Number should include	prf39006ss22	A, B, C, D	• Vishay Tansitor	MIL QPL	
1	CLR81	Tantalum case, Tubular, Polarized, Sintered anode and cathode, Extended capacitance, Established Reliability Voltage range: 6V to 100V Capacitance range: 6.8µF to 2200µF Case sizes: A, B, C, and D Operating temperature range: -55°C to +125°C Failure rate (%/1000 hour): R (0.01) Characteristic: H (80g sine, 54g random, 500g shock) shall be procured	prf39006ss25	A, B, C, D	• Vishay Tansitor	MIL QPL	
1	CLR81	Tantalum case, Tubular, Polarized, Sintered anode and cathode, Extended capacitance, Established Reliability Voltage range: 6V to 100V Capacitance range: 6.8µF to 2200µF Case sizes: A, B, C, and D Operating temperature range: -55°C to +125°C Failure rate (%/1000 hour): R (0.01) Characteristic: H (80g sine, 54g random, 500g shock) shall be procured	prf39006ss25	A, B, C, D	• Vishay Tansitor	MIL QPL	
2	CT79, CT79E	Non-Solid Tantalum, gel Rated Voltage 6.0 to 125 V Capacitance range 2.7 to 2200 uF Operating Temperature range: -55 to +125 °C		A, B, C & D package style	• FIRADEC	Not qualified	Also available i.a.w. CCC specification 30202-801

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	ST79	Capacitors Fixed, Tubular, Porous Tantalum Cathode and Anode, gelled Electrolyte Voltage (V) Capacitance (uF) 60 560 60 700 63 500 75 330 75 470 100 150 100 220 Tolerance: 10% Case size: C (variant 04), D (variant 05) Dimensions max. (mm): 34 (length), 10 (diam.) Operating temperature range: -55 to +125 °C		Axial	• FIRADEC	Not qualified	125 V high capacitance values shall be avoided

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	HT86PS	Capacitors, Fixed, reconstituted MICA, High Voltage, based on type HT86PS. Cap. Range(nF) Tol.(±%) Rated Volt.(V) 0.68 to 15 10 20000 1.5 to 33 10 15000 3.3 to 68 10 12500 1.0 to 100 10 10000 2.2 to 220 10 7500 6.8 to 470 10 5000 15 to 1000 10 3500 15 to 1500 10 2500 33 to 2200 10 1500 Temperature Coefficient: Temperature (°C.) Capacitance change (%) +22 to -55 -3.0 min +22 to +125 +10 max Size (max mm):36x11x5 to 106x51x15 depending on Voltage/Capacitance Value Operating Temperature Range (°C) : -55 to +125		AXIAL	• EUROFARAD	ESCC QPL	
2	PM90S	• Self-healing metallized film dielectric, non-inductive, thermoplastic case, epoxy resin sealed Capacitance value (µF) Rated Voltage (V) Tolerance (± %) Available size variants 8.2 to 150 50 10 and 20 01 to 21 3.3 to 100 100 10 and 20 01 to 21 1.0 to 39 250 10 and 20 01 to 21 0.39 to 15 400 10 and 20 01 to 21 0.22 to 5.6 630 10 and 20 01 to 21 Size (mm) Comments Radial: 20 x 20 x 6.5 (min) to 31 x 32 x 32.5 (max) SMD: 20 x 20 x 7 (min) to 31 x 32 x 32.5 (max) • Operating temperature range: -55 to +100 °C		SMD and Radial	• EUROFARAD	ESCC QPL	The PM90S capacitor has already been in EPPL from 1998 to 2006. It has been withdrawn by mistake due to a misunderstanding.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	PM94S	Capacitors, fixed, surface mount, D.C. Selef-Healing, non-inductive, Polyterephthalate Dielectric Capacitance Value (uF); Rated Voltage (V); Available sizes 2.2 - 47; 50; 01, 02, 03, 04 1.5 to 22; 63; 01, 02, 03, 04 0.56 - 12; 100; 01, 02, 03, 04 1.5 - 22; 200; 01, 02, 03, 04 0.22 - 4.7; 250; 01, 02, 03, 04 0.1 - 1.8; 400; 01, 02, 03, 04 Size 01 (max mm) : 10.7 x 10.7 x B (6, 8, 10, 12, 14, 15 mm depending on cap. value) Size 02 (max mm) : 15.5 x 11.5 x B (6, 8, 10, 12, 14, 15 mm depending on cap. value) Size 03 (max mm) : 16.5 x 15.5 x B (6, 8, 10, 12, 14, 15 mm depending on cap. value) Size 04 (max mm) : 18.5 x 17.0 x B (6, 8, 10, 12, 14, 15 mm depending on cap. value) Operating Temperature Range (°C): -55 to +125		SMD	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	101M, 201M, 400M and 401M	Capacitors, Microwave, Silicon, Naked die, MOS, Based on types 101M, 201M, 400M and 401MType; Capacitange Range (pF); Voltage(V)400M106A & C; 8.2, 10, 12, 15; 40400M10xA & 107C;18, 22, 27, 33, 39; 40400M108A & C; 47, 56, 68;40400M110A & C; 81, 100;40400M113J & 114J; 10; 40101M106A & C; 3.9, 4.7, 5.6, 6.8; 100101M10xA & 107C;10, 12, 15; 100101M108A & C; 22, 27, 33, 39; 100201M106C; 2.2, 2.7, 3.3; 200201M106A; 0.1X (201M106C, 107C, 108C) + 210M106C; 200201M10xA & 107C; 3.9, 4.7, 5.6, 6.8, 8.2; 200201M108A & C; 10, 12, 15, 18; 200201M111J & 112J; 0.25 & 0.4; 200401M111J; 0.125; 400401M112J; 0.2; 400		DIE	• Cobham Microwave (Chelton Group)	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	38999 Series I	Circular, Bayonet Coupling, Removable Crimp Contacts, scoop-proof, based on MIL-C-38999 Series I. Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts size #22. 3, 6, 10, 19, 26, 32, 41, 53, 61 contacts size #20. Other arrangements with contact sizes: 8, 12, 16, 20 For contact sizes refer to ESCC 3401/058. Receptacle and plug shell sizes:09,11,13,15,17,19,21,23,25. Contact sizes Rating (A) Contact sizes Rating (A) 04 80 08 46.0 16 13.0 22 5.0 12 23.0 20 7.5 Operating Temperature Range (°C): -65 to +200		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	38999 Series II	Circular, Bayonet Coupling, Low Profile, Removable Crimp Contacts, Based on MIL-C-38999 Series II. Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts size #22. 3, 6, 10, 18, 26, 32, 41, 55, 61 contacts size #20. Other arrangements with contact sizes: 20, 16, 12. For contact sizes refer to ESCC 3401/045. Receptacle and plug shell sizes:08,10,12,14,16,18,20,22,24. Contact sizes Rating (A) Contact sizes Rating (A) 12 23.0 16 13.0 20 7.5 22 5.0 Operating Temperature Range (°C): -65 to +200		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	38999 Series III	Circular, Triple-start, Self Locking Coupling, Scoop-proof, Removable Crimp Contacts, based on MIL-C-38999 Series III Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts #22 3, 6, 10, 19, 26, 32, 41, 53, 61 contacts #20 Other arrangements with contact sizes: 20, 16, 12, 8, 4. For contact sizes refer to ESCC 3401/058, /066, /070. Contact sizes Rating (A) Contact sizes Rating (A) 4 80.0 8 46.0 12 23.0 16 13.0 20 7.5 22 5.0 Operating Temperature Range (°C): -65 to +200		AS PER SPEC.	• SOURIAU	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	38999 SeriesIII Hermetic receptacle	Circular, Hermetic Receptacle, Scoop-proof, non-removable solder contacts, based on MIL-C-38999 Series III. Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts size#22 3, 6, 10, 19, 26, 32, 41, 53, 61 contacts size#20 Contact size Rating (A) 8 33 12 17 16 10 20 5 22D 3 Operating Temperature Range (°C): -65 to +200		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	Accesories for Circular Connectors type MIL-C-38999, series I & II	Variants 01 to 27Variant Description01 to 09 Nut10 to 18 Straight Cable Clamp19 to 27 90° Cable ClampOperating temperature range (ºC): -65 to +200		N/A	• SOURIAU	ESCC QPL	
1	Accessories for Circular Connectors DBAS	Accessories for Circular Connectors DBAS Variant 01 to 41 Operating Temperature Range (°C): 55 to +200		AS PER SPEC.	• Cie Deutsch	ESCC QPL	
1	Circular DBAS Connectors	Connectors Miniature Electrical Circular Push-Pull Coupling Removable Crimp Contacts, based on type DBAS Variant 01 Standard contact arrangements with 3, 7, 12, 19, 27, 37 or 61 contacts in wire size AWG # 20 Special contact arrangements with contacts size AWG 22, 20, 16, 12 and 8 Operating Temperature Range (°C): 65 to +200		AS PER SPEC	• Cie Deutsch	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Connector Receptacles Electrical Circular Triple-Start Self-Locking coupling Scoop-proof, P.C.B. Non-Removable Contacts Based on MIL-C-38999 series III	Receptacle with shell size 9, 11, 13, 15, 17 19, 21, 23 and 25; Shell type: 00 & 07 Contact sizes Rating (A) 16 10.0 20 5.0 22 3.0 Operating Temperature Range (°C): -65 to +200		N/A	• SOURIAU	ESCC QPL	
1	Contacts Electrical Crimp for Circular DBAS Connectors	Contacts Electrical Crimp for Circular DBAS Connectors Variants: 01 to 20 Rating (A): 7.5 variants 01 to 04 2.5 variants 05 and 06 13 variants 07, 08, 13, 14 7.5 variants 09 and 10 25 variants 11 and 12 45 variants 15, 16, 19, 20 32 variants 17 and 18 Operating Temperature Range (°C): 65 to +200		AS PER SPEC.	• Cie Deutsch	ESCC QPL	
1	Contacts Electrical Subminiature Crimp for Circular DBAS Connectors	Contacts Electrical Crimp for Circular DBAS Connectors Variants: 01 to 04 Rating (A): 5 variants 01, 02 2.5 variants 03, 04 Accept wire: 22, 24 (variants 01 and 02) and 26, 28 (for variants 03 and 04) Operating Temperature Range (°C): 65 to +125		AS PER SPEC.	• Cie Deutsch	ESCC QPL	
1	Contacts Electrical Triax Crimp for MIL-C-38999 Series III Connectors	Variant 01 (male) & 02 (female)Max Rated current 1A; Ur=500V; Max Frec range 0 to 20MHz (compatible with 1553 bus line)Operating Temperature Range (°C): -65 to +200		N/A	• SOURIAU	ESCC QPL	
1	Contacts for PCB HE801 connectors	Contacts, electrical, crimp, wire-wrap, solder and saver for HE801 connectorsVariants 01 to 22 and 64 to 70Rating (A): 5.0 (1 contact,AWG 22) Operating temperature range: -55 to +125 °C		N/A	• SOURIAU	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Contacts, electrical, Crimp for MIL-C-389999 series I & III	Variants 01 to 14Contact sizes 04 80 & 46 4, 6, 8, 10 08 46.0 8, 10 12 23.0 12, 14 16 13.0 16, 18, 20 20 7.5 20, 22, 24 22 5.0 22, 24, 26Operating temperatur range (°C): -65 to +200		N/A	• SOURIAU	ESCC QPL	
1	Contacts, electrical, Crimp for MIL-C-389999 series II	Variants 01 to 08Contact sizes 23.0 16 13.0 Rating (A) 20 12 7.5 22 5.0 Operating Temperature Range (°C): -65 to +200		N/A	• SOURIAU	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Accesories for rectangular connector D*M, D*MA and savers	Variants 01 to 95 Scren Lock Assembly, Dust cap, Potting Shell, Back-Shell, Cable Clamp... Operating Temperature Range (ºC): -55 to +125 (except +100ºC for dust caps)		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Accesories for rectangular connector D*M, D*MA and savers	Variants 01 to 16 & 44 to 57 & 65 to 80Screw Lock Assembly, Dust capsOperating Temperature Range (ºC): -55 to +125 (except +100ºC for dust caps)		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	Coaxial Contacts for D*M (Crimp, solder and PCB type)	Variants 01 to 25 Type: Male, Female and Male/Female Rear End: Straight Cable, 90º Cable, 90º PCB (shell size E, A, B, C only) Frec Range up to 1GHz Rated current (centre contact): 7.5A Operating Temperature Range (ºC): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Connector Savers for D*BM	Connector Savers, Electrical, Rectangular, Miniature, Non-Removable Signal Contacts and Removable Coaxial and Power Contacts, based on Type D*BM 9, 15, 25, 37 and 50 size 20 contacts for standard density layout 3W3 to 8W8, 5W1 to 47W1 combined contact arrangements Operating Temperature Range (ºC): -55 to +125		AS PER SPEC	• C&K Components	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Contacts Electrical Crimp for D*MA Connectors	Variants 01 to 08 Variant Type Mating End Size Crimp Barrel Size Rated Current (A) Accept Wire (AWG) 01 Male 20 20 7.5 20, 22, 24 02 Female 20 20 7.5 20, 22, 24 03 Male 20 26 3 26, 28 04 Female 20 26 3 26, 28 05 Male 20 18 7.5 18, 20 06 Female 20 18 7.5 18, 20 07 Male 20 22 5 22, 24, 26 08 Female 22 22 5 22, 24, 26 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Contacts Electrical Crimp for D*MA Connectors	Variants 01 to 08Variant Type Mating End Size Crimp Barrel Size Rated Current (A) Accept Wire (AWG)01 Male 20 20 7.5 20, 22, 2402 Female 20 20 7.5 20, 22, 2403 Male 20 26 3 26, 2804 Female 20 26 3 26, 2805 Male 20 18 7.5 18, 2006 Female 20 18 7.5 18, 2007 Male 20 22 5 22, 24, 2608 Female 22 22 5 22, 24, 26Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	Contacts for Savers D*BMA	Variant Type Mating end Size (AWG) Rated Current (A) 01 Male/Female 20 7.5 01 Male/Female 22 5 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Contacts for Savers D*BMA	Variant Type Mating end Size (AWG) Rated Current (A)01 Male/Female 20 7.501 Male/Female 22 5Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	D*M (Solder, PCB and Wire Wrap)	Rectangular, non removable solder bucket, PCB and wire-wrap contacts and removable coaxial and power contacts. Range: 9, 15, 25, 37 and 50 contacts size# 20 15, 26, 44, 62 and 78 contacts size# 22 Shell Size: E, A , B, C, DMounting Type: blank: standard mounting holes; Y: floating mount; E: captive nuts Gold-plated non-magnetic shells Contact size Rating (A) 20 7.5 22 3.0 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	Excluding Coaxial and Power Contacts
1	D*M (Solder, PCB and Wire Wrap)	Rectangular, non removable solder bucket, PCB and wire-wrap contacts and removable coaxial and power contacts. Range: 9, 15, 25, 37 and 50 contacts size# 20 15, 26, 44, 62, 78, 104 contacts size# 22 3W3 to 8W8, 5W1 to 47W1 combined contact arrangement Shell Size: E, A , B, C, D, F Mounting Type: blank: standard mounting holes; Y: floating mount; E: captive nuts Gold-plated non-magnetic shells Contact size Rating (A) 20 7.5 22 3.0 coax 7.5 power 40 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	D*MA (Crimp)	Rectangular Connectors with removable crimp contact. Range: 9, 15, 25, 37 and 50 contacts size# 20 15, 26, 44, 62, 78, 104 contacts size# 22 Shell Size: E, A , B, C, D, F Mounting Type: blank: standard mounting holes; Y: floating mount; E: captive nuts Gold-plated non-magnetic shells Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	D*MA (Crimp)	Rectangular Connectors with removable crimp contact. Range: 9, 15, 25, 37 and 50 contacts size# 20 15, 26, 44, 62, 78 contacts size# 22Shell Size: E, A , B, C, DMounting Type: blank: standard mounting holes; Y: floating mount; E: captive nutsGold-plated non-magnetic shells Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Lightweight Accesories for rectangular connector D*M, D*MA	Variants 05 to 14, 25 to 39, 46 to 55, 61 to 65, 72, 73, 76 to 80 Operating Temperature Range (ºC): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Lightweight Accesories for rectangular connector D*M, D*MA	Variants 01 to 65Operating Temperature Range (ºC): -55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	MTB	Single in line, microminiature. Shell size: 5 through 81 contacts single in line Terminations: Wire sizes AWG 26 and 28 and AWG 25 uninsulated solid gold-plated wire Rating (A): 2.5 with AWG 26 and uninsulated wire 1.5 with AWG 28 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	Supplied with uninsulated or already fitted wires; length of wires shall be specified by the orderer
1	Power Contacts for D*M (Crimp, solder and PCB type)	Variants 01 to 17 Type: Male, Female and Male/Female Rear End: Solder Bucket, Crimp Barrel, 90º PCB (shell size E, A, B, C only) Rated current : 40A Operating Temperature Range (ºC): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Savers Removable Contacts, based on type D*BMA	Variants 01 (#20) and 02 (#22) Range: 9, 15, 25, 37 and 50 contacts size# 20 15, 26, 44, 62, 78, 104 contacts size# 22 Shell Size: E, A , B, C, D, F Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Savers Removable Contacts, based on type D*BMA	Variants 01 (#20) and 02 (#22)Range: 9, 15, 25, 37 and 50 contacts size# 20 15, 26, 44, 62, 78 contacts size# 22Shell Size: E, A , B, C, DOperating Temperature Range (°C): -55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	HE801/HPD	For PCB, removable contacts, crimp, wire-wrap, solder type, saver type. Range: 2 rows: 17, 29, 41, 53, 65, 72, 84, 96, 120 contacts 3 rows: 62, 8 0, 98, 160 contacts Contact Type: 3401/017 Crimp-type. 3401/018 Wire-wrap type. 3401/019 Solder/Saver type(wire sizes 22 to 26). Rating (A): 5.0 (1 contact,AWG 22) 1.5 (>31 contacts,AWG 22) Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• HYPERTAC S.A.	ESCC QPL	
1	IHD INTERPOSER	PCB/PCB and PCB/MCM connectionsPad Size (min.) : 0,8 mmStandard Pitch : 1.905 mm between contacts and 1.524 mm between rowsStandard Height : 7.8 mmRFF contactsContact Resistance: <25 mohmNominal current: 1 AOperating temperature range: -55 to +125 °C		N/A	• HYPERTAC S.A.	ESCC QPL	
1	KMC	For PCB, non removable solder and wire wrap contacts and connector saver. Range: 3 rows 26, 44, 62, 80, 98, 144 contacts Contact Type: Solder and Wire-wrap for AWG 28 wires and PCB Rating (A): 2.0 (1 to 3 used contacts), 0.9 (4 to 26 used contacts) and 0.5 (over 27 used contacts) Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• HYPERTAC S.A.	ESCC QPL	
1	MHD	For PCB, non removable solder through board and surface mount contacts and connector saver. Range: 4 rows 52, 100, 152, 200, 252, 300, 352 and 400 contacts Contact Type: Solder through board and surface mount for PCB Rating (A): 2.0 (1 to 3 used contacts), 0.9 (4 to 26 used contacts) and 0.5 (over 27 used contacts) Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• HYPERTAC S.A.	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	ACB1	Triaxial databus connector for MIL-STD-1553 harnesses. Variants 01 to 08: Plug 3 and 4 Lugs. Straight and Right Angel with pin contact Variants 09 to 18: Bulkhead Jacks, 3 and 4 Lugs, Straight and Right Angel solder contact Bayonet & Thread coupling. Plug and Bulkhead connector types. Frequency range: up to 1 MHz Working Voltage: 200 Vrms; Rated Current (contact): 1A Operating temperature range: -55 to +150 °C		Coaxial	• AXON'CABLE	ESCC QPL	
1	RF Coaxial Adaptors and Connecting Pieces, Type SMA 2.9, 50 Ohms	Variant 01 to 06 Shell material and finish: passivated amagnetic stainless steel Operating temperature range (ºC): -65 to +165		AS PER SPEC.	• RADIALL	ESCC QPL	
1	RF Coaxial Connectors Type SMA 50 Ohms Adaptors and Connecting Pieces	Variant 01 to 14 Shell material and finish: Berylium copper gold plated, copper or nickel underplate; stainless steel, electro passivated or gold plated. Operating temperature range as per det. Spec.		AS PER SPEC.	• RADIALL	ESCC QPL	
1	RF-Coaxial connectors and adapters; Serie SMA	RF coaxial, 50 ohms, for transmitting RF-Signals and data3402/001 male contacts (plug), 3402/002 female contacts (receptacle), 3402/003 adapters. Crimp or solder contacts for flexible and semi-rigid cables, contacts for micro-strip, bulkhead connectors, PCB connectorsTypes covered by similarity: hermetically sealed receptacle; Amagnetic stainless steel; Operating temperature range as per det. Spec.	3402/001,3402/002,3402/003		• ROSENBERGER	ESCC QPL	
1	RF-Coaxial connectors and and adapters, Serie SMP	RF-Coaxial connectors 50 Ohm for transmitting RF-Signals and data ESCC 3402/024 plug ESCC3402/025 jack ESCC3402/26 adapters and connecting pieces	3402/024,3402/025,3402/026	SMP	• ROSENBERGER	ESCC QPL	Family qualification acc. to ESCC 20100 for SMP

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	RF-Coaxial connectors and and adapters, Serie SMP	RF-Coaxial connectors 50 Ohm for transmitting RF-Signals and data ESCC 3402/024 plug ESCC3402/025 jack ESCC3402/26 adapters and connecting pieces	3402/024,3402/025 ,3402/026	SMP	• ROSENBERGER	ESCC QPL	Family qualification acc. to ESCC 20100 for SMP
1	SMA 2.9, 50ohms Pin contact (Plug)	RF coaxial, 50 ohms.Frequency range 0-40 GHz3402/021 Pin Contact (Plug) variant 01 to 05 and 07 Operating temperature range (ºC): -65 to +165		AS PER SPEC.	• RADIALL	ESCC QPL	
1	SMA 2.9, 50ohms Socket contact (Receptacle)	RF coaxial, 50 ohms. Frequency range 0-40 GHz 3402/022 Socket Contact (Receptacle) variant 01 to 05 Operating temperature range (ºC): -65 to +165		AS PER SPEC.	• RADIALL	ESCC QPL	
1	SMA 2.92	RF coaxial, 50 ohms, DC to 40 GHz 3402/021 male contacts (plug), 3402/022 female contacts (receptacle), 3402/023 adapters and connecting pieces Type variants as per Table 1(a) of Detail Specifications Operating temperature range: -65 / +165 °C	3402/021,3402/022 ,3402/023		• ROSENBERGER	ESCC QPL	
1	SMA 50ohms Pin contact (Plug)	RF coaxial, 50 ohms. Frequency range 0-18 GHz 3402/001 Pin Contact (Plug) variant 01 to 47 Operating temperature range as per det. Spec.		AS PER SPEC.	• RADIALL	ESCC QPL	
1	SMA 50ohms Socket contact (Receptacle)	RF coaxial, 50 ohms. Frequency range 0-18 GHz 3402/002 Socket Contact (Receptacle) variant 01 to 85 Operating temperature range as per det. Spec.		AS PER SPEC.	• RADIALL	ESCC QPL	
2	SMP	RF Coaxial Connectors, 50 ohms, adaptor and connecting pieces Frequency limit up to 20 GHz Variant 01: limited detent receptacle for PCB CMS (pin contact) Variant 02: straight female-female adapter (10.3 mm) Variant 03: straight female-female adapter (5.69 mm) Variant 04: right angle receptacle for PCB, limited detent, solder type (pin contact) Operating temperature range: -65 / +165 °C	RAD-DET-CONN-019	AS PER SPEC.	• RADIALL	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	TNC	RF coaxial type TNC connectors male or female contact and adptators 50W Max working voltage : 500Vrms, power : 75-120W, frequency : 0-18GHz Operating temperature range: -55 to +105 °C	3402/008,3402/009,3402/010	TNC connector	• RADIALL	Not qualified	
1	TNC	Coaxial connectors and adapters; Series TNCRF-Coaxial connectors 50 Ohm for transmitting RF-Signals and dataTransmitting of high power RF-Signals up to 18 Ghz, contacts for cable, bulkhead, PCB, …	3402/008,3402/009,3402/010		• ROSENBERGER	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Accessories for Microminiature 8MCG	Accessories for Rectangular connectors, Microminiature 8MCGVariants 01 to 62.Operating Temperature Range (°C): 55 to +125		AS PER SPEC	• SOURIAU	ESCC QPL	
1	Accessories MDM & MDMA	Accessories for Connectors Microminiature MDM & MDMA and savers Variants: 03, 04, 07 to 17 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	Contacts for 8MCG Connectors	Contacts, Electrical, Gauge 26, for 8MCG ConnectorsContacts variant 01 (male crimp barrel 26), 02 (female crimp barrel 26), 03 (male crimp barrel 24), 04 (female crimp barrel 24). Accepts wires AWG 24, 26, 28Operating Temperature Range (°C): 55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	
1	Contacts for MDMA	Contacts, Electrical, Crimp, for Microminiature Connectors based on Type MDMA Variant 01, 02, 03, 04 Accepts wires AWG 24 or 2x28 in crimping barrel AWG 24 Accepts wires AWG 26 and 28 in crimping barrel AWG 26 Rating (A): 3.5A for AWG 24 2.5A for AWG 26 and uninsulated AWG 25 1.5A for AWG 28 Nickel or Gold Plated Shells Operating Temperature Range (°C): 55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	MDM	Rectangular, non removable wired contacts Range: 9, 15, 21, 25, 31, 37, 51 contacts size. Terminations: Wire sizes AWG 26 and 28 and AWG 25 uninsulated solid gold-plated wire Rating (A): 2.5 with AWG 26 and uninsulated wire 1.5 with AWG 28 Nickel or Gold Plated Shells Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	
1	MDMA Connectors	Connectors, Electrical, Rectangular, Microminiature, Removable Crimp Contacts, Based on Type MDMA Range of contacts: 9, 15, 21, 25, 21, 37 Accepts wires AWG 24 or 2x28 in crimping barrel AWG 24 Accepts wires AWG 26 and 28 in crimping barrel AWG 26 Rating (A): 3.5A for AWG 24 2.5A for AWG 26 and uninsulated AWG 25 1.5A for AWG 28 Nickel or Gold Plated Shells Working Voltage (Max.) 150Vrms Operating Temperature Range (°C): 55 to +125		AS PER SPEC	• C&K Components	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	MDSA	Rectangular, non removable wired contacts Range: 9, 15, 21, 25, 31, 37, 51 contacts size. Terminations: Single wire ESCC/3901/013 variant 01 (AWG28) Single wire ESCC/3901/013 variant 02 (AWG26) Single wire ESCC/3901/002 variant 61 (AWG28) Single wire ESCC/3901/002 variant 56 (AWG26) Rating (A): 2.5 with AWG 26 and uninsulated wire 1.5 with AWG 28 Nickel or Gold Plated Shells For the corrisponding saver refer to ESCC 3401/041. Operating Temperature Range (°C): -55 to +125	Axon 05039-ST-01 Issue C	AS PER SPEC.	• AXON'CABLE	MIL QPL	
1	Microminiature Connectors, Non-Removable Contacts, based on Type 8MCG	Microminiature Connectors, Non-Removable Gauge, 26 PCB Pin Contacts, based on Type 8MCGContacts arrangements: 7, 13, 25, 51, 104Shell variant 01: glass-fibre reinforced thermoplasticShell variant 02: aliminium alloyContact termination: OL3 (straight PCB), 1A7N (90º PCB 2.54mm spacing), 1B7N (90º PCB 2.54mm spacing). Goldplated shells.Operating Temperature Range (°C): 55 to +125		AS PER SPEC	• SOURIAU	ESCC QPL	
1	Microminiature Connectors, Removable Contacts, based on Type 8MCG	Microminiature Connectors, Removable Gauge, 26 PCB Pin Contacts, based on Type 8MCGContacts arrangements: 7, 13, 25, 51, 104Shell variant 01: glass-fibre reinforced thermoplasticShell variant 02: aliminium alloyOperating Temperature Range (°C): 55 to +125		AS PER SPEC.	• SOURIAU	ESCC QPL	
2	NanoD connectors	Connectors, electrical, rectangular, nanominiature, non-removable crimp contacts and uninsulated solid wire contacts based on Nano-D.			• AXON'CABLE	Others	same materials as MDSA range except glue (qualified by evaluation)
1	Savers MDM	Connector Savers Electrical Rectangular Microminiature, based on type MDM Shell size: 9, 15, 21, 25, 31, 37, 51 Operating Temperature Range (°C): -55 to +125		AS PER SPEC.	• C&K Components	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	D*J	Filtered, rectangular, non-removable solder bucket contacts, filtering. Range: 9, 15, 25, 37, 50 contacts Filter type M (medium frequency) only Solder buckets terminations Rated Current: 5 Adc Operating Temperature Range (C): -55 to +125	CSFR 165	AS PER SPEC.	• C&K Components	Not qualified	New component

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	T1507	Crystal units in metal holder Frequency Range: 2,5 - 20 MHz Operating temperature range depending on type variant		TO8 CAN	• KVG Quartz Crystal Technology	ESCC QPL	
1	T1507	Crystal units in metal holder Frequency Range: 2.5 - 20 MHz Operating temperature range depending on type variant		TO8 CAN	• Rakon France	ESCC QPL	
1	T1507	Crystal units in metal holder Frequency Range: 2,5 - 26 MHz Operating temperature range depending on type variant		TO8 CAN	• KVG Quartz Crystal Technology	ESCC QPL	
1	T807	Crystal units in metal holder Frequency Range: 14 - 140 MHz Operating temperature range depending on type variant		TO5 CAN	• Rakon France	ESCC QPL	
1	T807	Crystal units in metal holder Frequency Range: 4 - 140 MHz Operating temperature range depending on type variant		TO5 CAN	• KVG Quartz Crystal Technology	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1N6640U	Diodes, Switching basen on type 1N6640U Variants 07, 08 Vbr= 75V; Vrwm=75V; Ifsm=2A Operating temperature range (ºC): -65 to +175		LCC2-D	• STMicroelectronics	ESCC QPL	
1	1N6642U	Diodes, Switching basen on type 1N6640U Variants 07, 08 Vbr= 100V; Vrwm=100V; Ifsm=2A Operating temperature range (ºC): -65 to +175		LCC2-D	• STMicroelectronics	ESCC QPL	
1	BAY6642 (ES)	Diode, Switching Breakdown Voltage V_BR = 100 V Working Peak Reverse Voltage VRWM (V) = 75 V Weight max 0.06 g Forward Surge Current IFSM = 2.5 A (pk) @ T_amb = 25°C T_rr= 4 ns V_RWM = 75 V_pk I_R @ V_RWM = 100 µA C = 2.5 pF		5101/029	• INFINEON TECHNOLOGIES A.G. Regensburg	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	1N5416 thru 1N5418, 1N5420	Silicon, Power Rectifier, Fast Recovery. DC forward voltage (max V): 1.5 @ DC forward current (pk A): 9.0 DC reverse current (max µA): 1.0 @ DC reverse voltage (V):100,200,400,600. Switching time (ns): 150 (400 for 1N5420); IFSM=80 A (pk); Io=3.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +175.	MIL-S-19500/411	AXIAL	• Sensitron Semiconductor Inc.	MIL QML	Sensitron spec. 7700-4091 for JANS-equivalent screening flow
1	1N5416, 1N5417, 1N5418, 1N5420	Silicon, Power Rectifier, Fast Recovery. DC forward voltage (max V): 1.5 @ DC forward current (pk A): 9.0 DC reverse current (max µA): 1.0 @ DC reverse voltage (V):100,200,400,600. Switching time (ns): 150 (400 for 1N5420); IFSM=80 A (pk); Io=2.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +175.	MIL-PRF-19500_411N	AXIAL	• MICROSEMI SCOTTSDALE	MIL QML	
2	1N5416US thru 1N5418US, 1N5420US	Silicon, Power Rectifier, Fast Recovery. DC forward voltage (max V): 1.5 @ DC forward current (pk A): 9.0 DC reverse current (max µA): 1.0 @ DC reverse voltage (V):100,200,400,600. Switching time (ns): 150 (400 for 1N5420US); IFSM=80 A (pk); Io=3.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +175.	MIL-PRF-19500_411N	MELF	• Sensitron Semiconductor Inc.	MIL QML	
2	1N5550, 1N5552, 1N5554	Silicon, Power Rectifier, General Purpose. DC forward voltage(max V):1.2(1.3 for 1N5554) @DC forward current(pk A):9.0 DC reverse current(max µA):1.0 @ DC reverse voltage (V): 200, 600, 1000 Switching time (ns): 2000; IFSM= 100 A (pk); Io= 3.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +175.		AXIAL	• MICROSEMI SCOTTSDALE	MIL QML	
1	1N5614, 1N5616, 1N5618	Silicon, Power Rectifier DC forward voltage (max V): 1.3 @ DC forward current (pk A): 3.0* DC reverse current (max Ã¦A): 0.5 @ DC reverse voltage (V): 200, 400, 600 Switching time (ns): 2000; IFSM= 30 A (pk); Io= 1 A (t=55°C.) Operating Temperature range (°C.): -65 to +175. * pulsed	MIL-PRF-19500_427P	AXIAL	• MICROSEMI SCOTTSDALE	MIL QML	
2	1N5615, 1N5617(A/UN),1N5619, 1N5623	Silicon, Power Rectifier, Fast Recovery. DC forward voltage (max V): 1.6 @ DC forward current (pk A): 3.0* DC reverse current (max µA): 1.0 @ DC reverse voltage (V): 200, 600, 1000 Switching time (ns): 150, 250, 500 respectively IFSM= 25 A (pk); Io= 1 A (t=55°C.) Operating Temperature Range (°C.): -65 to +175. * pulsed	MIL-PRF-19500_429L	AXIAL	• MICROSEMI SCOTTSDALE	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1N5806U	Silicon, Power Rectifier, Switching.Variants 13 & 14.DC forward voltage (max V): 0.875 @ DC forward current (pk A): 1.0 DC reverse current (max uA): 1.0 @ DC reverse voltage (V):150. Switching time (ns): 25; IFSM=35 A (pk); Io=1.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +175.		LCC2-A	• STMicroelectronics	ESCC QPL	
2	1N5806US	Silicon, Fast Recovery, Power Rectifier. DC forward voltage (max V):0.975,0.925 @DC forward current (pk A):2.5,6.0* DC reverse current (max µA): 1.0, 5.0 @DC reverse voltage (V): 150 Switching time (ns): 25, 30 respectively IFSM= 35, 125 A (pk); Io= 1.0, 3.0 respectively. Operating Temperature Range (°C.): -65 to +175. * pulsed	MIL-PRF-19500_477J	D-5A	• Sensitron Semiconductor Inc.	MIL QML	Manufacturer Standardization.
1	1N5806US	Silicon, Fast Recovery, Power Rectifier. DC forward voltage (max V):0.975,0.925 @DC forward current (pk A):2.5,6.0* DC reverse current (max µA): 1.0, 5.0 @DC reverse voltage (V): 150 Switching time (ns): 25, 30 respectively IFSM= 35, 125 A (pk); Io= 1.0, 3.0 respectively. Operating Temperature Range (°C.): -65 to +175. * pulsed	MIL-PRF-19500_477J	D-5A	• MICROSEMI SCOTTSDALE	MIL QML	
1	1N5811U	Silicon, Power Rectifier, Switching.Variants 11 & 12.DC forward voltage (max V): 0.875 @ DC forward current (pk A): 4.0 DC reverse current (max uA): 5.0 @ DC reverse voltage (V):150. Switching time (ns): 30; IFSM=125 A (pk); Io=6.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +175.		LCC2-B	• STMicroelectronics	ESCC QPL	
2	1N5811US	Silicon, Fast Recovery, Power Rectifier. DC forward voltage (max V):0.975,0.925 @DC forward current (pk A):2.5,6.0* DC reverse current (max µA): 1.0, 5.0 @DC reverse voltage (V): 150 Switching time (ns): 25, 30 respectively IFSM= 35, 125 A (pk); Io= 1.0, 3.0 respectively. Operating Temperature Range (°C.): -65 to +175. * pulsed	MIL-PRF-19500_477J	D-5B	• Sensitron Semiconductor Inc.	MIL QML	Manufacturer Specification
2	1N5811US	Silicon, Fast Recovery, Power Rectifier. DC forward voltage (max V):0.975,0.925 @DC forward current (pk A):2.5,6.0* DC reverse current (max µA): 1.0, 5.0 @DC reverse voltage (V): 150 Switching time (ns): 25, 30 respectively IFSM= 35, 125 A (pk); Io= 1.0, 3.0 respectively. Operating Temperature Range (°C.): -65 to +175. * pulsed	MIL-PRF-19500_477J	D-5B	• MICROSEMI SCOTTSDALE	MIL QML	-

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1N5819U	Silicon, Power Rectifier, Schottky. Variants 02 & 03 DC forward voltage (max V): 0.49 @ DC forward current (pk A): 1.0 DC reverse current (max uA): 15.0 @ DC reverse voltage (V):40. IFSM=25 A ; Io=1.0 A Operating Temperature range (°C.): -65 to +150.		LCC2-B	• STMicroelectronics	ESCC QPL	
2	1N5819UR-1	Silicon, Hermetic, Schottky barrier. DC forward voltage (max V): 0.8 @max. forward current 3.1 A (pulsed) IFSM= 24 A(pk); Io= 1.0 A at Tec= +55°C. Operating Temperature Range (°C.): -65 to +125	MIL-PRF-19500_586K	DO-213AB	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Specification. Moved to EPPL II
1	1N5822U	Silicon, Rectifier, Schottky barrier. Variants 01 & 02 DC reverse current (max uA): 80 @ DC reverse voltage (V):40. IFSM=80 A (pk); Io=3.0 A (t=55°C.) Operating Temperature range (°C.): -65 to +150ºC		LCC2-B	• STMicroelectronics	ESCC QPL	
2	1N5822US	Silicon, Rectifier, Schottky barrier. DC forward voltage (max V): 0.7 @max. forward current 9.4 A* (pk) IFSM= 80 A(pk); Io= 3.0 A at Tec=+55°C. Operating Temperature Range (°C.): -65 to +150 *pulsed	MIL-PRF-19500_620H	D-5B	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization.
1	BYV52-200	Single, Ultra Fast Power Rectifier, 200 V, 30 A Operating Temperature range : -55 to +150 °C Storage Temperature Range : -55 to +150 °C Dimensions (mm, max.) : 20.07 x 13.59 x 6.3		TO254	• STMicroelectronics	ESCC QPL	
1	BYV54-200	Single, Ultra Fast Power Rectifier, 200 V, 60 A Operating Temperature range : -55 to +150 °C Storage Temperature Range : -55 to +150 °C Dimensions (mm, max.) : 20.07 x 13.59 x 6.3		TO254-AA	• STMicroelectronics	ESCC QPL	
1	BYW81-200	Dual, Ultra Fast Power Rectifier200 V, 2x15 A Operating Temperature range : -55 to +150 °C Storage Temperature Range : -55 to +150 °C Available in Common Anode, Common Cathode and Doubler configuration Dimensions (mm, max.) : 20.07 x 13.59 x 6.3		SMD .5	• STMicroelectronics	ESCC QPL	
1	STPS1045	Diodes, Power Rectifier, Schottky Barrier, based on type STPS1045 Variants: 01 to 02 (SMD.5) Operating temperature range (ºC): -65 to +175		SMD.5	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	STPS20100	Diodes, Power Rectifier, Schottky Barrier, based on type STPS20100 Variants: 01 to 04 (TO-254) Variant 05 (SMD.5) Variant 06&07 (SMD 1) Operating temperature range (ºC): -65 to +175		TO-254, SMD.5, SMD 1	• STMicroelectronics	ESCC QPL	
1	STPS40100	Diodes, Power Rectifier, Schottky Barrier, based on type STPS40100 Variant 01, 02 (TO-254) Variant 03 (SMD1) Operating temperature range (ºC): -65 to +175		TO-254, SMD1	• STMicroelectronics	ESCC QPL	
1	STPS6045	Diodes, Power Rectifier, Schottky Barrier, based on type STPS6045 Variant 01 (TO-254) Variant 02 (SMD1) Operating temperature range (ºC): -65 to +175		TO-254, SMD1	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1N4099UR-1 thru 1N4135UR-1	Silicon, Voltage regulator, Low noise. DC forward voltage (max V): 1.1 @max. forward current : 200 mA Regulator voltage (nom V): 6.8 to 100 @Iz=250 uA dc Voltage tolerance: ± 5% Power (W): 0.5 at Tec= 125°C. Operating Temperature Range (°C.): -65 to +175	MIL-PRF-19500_435K	DO-213AA	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization
1	1N4464 thru 1N4496	Silicon, Voltage Regulator. DC forward voltage (max V): 1.5 @max. forward current : 1 A Nominal Zener volt. (V): 9.1 - 200 @ Nom. Iz (mA): 28.0 - 1.2 Zener tolerance (V): 0.35 - 10.0 Power (W): 1.5 Operating Temperature Range (°C.): -55 to +175	MIL-PRF-19500_406K	AXIAL	• MICROSEMI SCOTTSDALE	MIL QML	
1	1N4954 thru 1N4992	Silicon, Voltage Regulator. DC forward voltage (max V): 1.5 @max. forward current : 1 A Nominal Zener volt. (V): 6.8 - 270 @ Nom. Iz (mA): 175.0 - 5.0 Voltage Regulation (V): 0.7 - 25.0 Power (W): 5.0 at Tl= +65°C. Operating Temperature Range (°C.): -55 to +175	MIL-PRF-19500_356K	Axial	• MICROSEMI SCOTTSDALE	MIL QML	
1	1N6309 thru 1N6319	Silicon, Zener, Voltage regulator, Solid glass noncavity constr. DC forward voltage(max V):1.4 @max If = 1 A* dc Nom. Vz (V): 2.4 to 6.2 @ Nom. Iz (mA): 20 Zener tolerance: ± 5% Power (W): 0.5 at Tl=+75°C. Operating Temperature Range (°C.): -65 to +175 *pulsed	MIL-PRF-19500_533J	DO-35	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization
1	1N6309US thru 1N6319US	Silicon, Zener, Voltage regulator, Solid glass noncavity constr. DC forward voltage(max V):1.4 @max If = 1 A* dc Nom. Vz (V): 2.4 to 6.2 @ Nom. Iz (mA): 20 Zener tolerance: ± 5% Power (W): 0.5 at Tec=+125°C. Operating Temperature Range (°C.): -65 to +175 *pulsed	MIL-PRF-19500_533J	MELF	• MICROSEMI LAWRENCE	MIL QML	
1	1N6320 thru 1N6336	Silicon, Zener, Voltage Regulator, Solid glass noncavity constr. DC forward voltage (max V): 1.4 @max. forward current : 1 A* dc Nominal Zener volt. (V): 6.8 - 33.0 @ Nom. Iz (mA): 20.0 - 3.8 Zener tolerance: ± 5% Power (W): 0.5 at Tl= +75°C. Operating Temperature Range (°C.): -65 to +175 *pulsed	MIL-PRF-19500_533J	DO-204	• MICROSEMI SCOTTSDALE	MIL QML	Manufacturer Standardization

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1N6320US thru 1N6336US	Silicon, Zener, Voltage Regulator, Solid glass noncavity constr. DC forward voltage (max V): 1.4 @max. forward current : 1 A* dc Nominal Zener volt. (V): 6.8 - 33.0 @ Nom. Iz (mA): 20.0 - 3.8 Zener tolerance: ± 5% Power (W): 0.5 at Tl= +75°C. Operating Temperature Range (°C.): -65 to +175 *pulsed	MIL-PRF-19500_533J	MELF	• MICROSEMI SANTA ANA	MIL QML	Manufacturer Standardization

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1N4568AUR-1	Silicon, Low level, Voltage-reference. Nominal Zener Voltage (V): 6.4 @max. forward current (mA): 0.5±0.01 to 4.0±0.01 Zener tolerance: ±5% Power (W): 0.475 at Ta=+25°C. Operating Temperature Range (°C.): -65 to +175	MIL-PRF-19500_452J	DO-213AA	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization
1	1N4614UR-1 thru 1N4627UR-1	Silicon, Low-noise Voltage regulator. DC forward voltage (max V): 1.1 @max. forward current 200 mA dc Regulator voltage (max V): 1.8 to 6.2 @Iz= 250 uA Voltage tolerance: ±5% Power (W): 0.5 at Tec=+125°C. Operating Temperature Range (°C.): -65 to +175	MIL-S-19500/435	DO-213AA	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	BAS70 & BAS40	Microwave, Silicon, Schottky, General purpose Variants 01 (BAS70), 03 (BAS40) Variant; Vrr(V); If (mA); Ifsm 01;-70V; 70mA; 85mApk@t<10ms, duty cycle=10% 02;-40V; 120mA; 170mApk@t<10ms, duty cycle=10% Operating Temperature Range (°C.): -55 to +150		T1	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	1N5629A thru 1N5665A	Silicon, transient voltage suppressor. DC reverse current (max uA):1000 to 5 @Vr =5.8 to 171 Vbr (min/max V): 6.45/7.14 to 190/210 @Ibr=10 to 1 Power (W): 1.0 Operating Temperature Range (°C.): -55 to +175	MIL-PRF-19500_500E	DO-13	• MICROSEMI SCOTTSDALE	MIL QML	Manufacturer Standardization
2	1N6124A	Silicon, bipolar transient voltage suppressor. Reverse current leakage (max uA): 1 @Vr=27.4 to 152 Breakdown voltage (min V):53 @Ibr(mA)=30 to 5 Power (W): 2.0 Peak Power (W): 500 for 1 ms Operating Temperature Range (°C.): -55 to +175	MIL-PRF-19500_516F	AXIAL	• MICROSEMI SCOTTSDALE	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	DH 252, DH 256, DH 267, DH 292, DH294	Microwave, Silicon, Multiplier varactor. Min. Breakdown voltage (V):-45,-40,-30,-20,-15 @ Ir= 10 uA max. Reverse Current (nA): 20 @ Vr= -10V Max. Forward Voltage (V): 0.9 @ If= 10 mA Max. Total Capacitance (pF): 0.5 to 7.2 Min. Carrier Lifetime (ns): 6 to 125 @ If= 10 mA and Ir=6.0 mA Max. Snap-off Time (ps): 60 to 400 @ If= 10 mA and Vf= 10 V Max. R.F. Power Dissipation (W): 0.5 to 1.25 Operating Temperature Range (°C.): -55 to +150		AS PER SPEC.	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH76010 thru DH760150	Microwave, Silicon, Tuning varactor, Hyper Abrupt Max. Reverse current (µA) : 10 @ Vr = -20 V. Max Forward voltage (V) : 1 @ If = 10 mA Max Total Capacitance (pF) : 0,9 - 18,30 @ Vr = -4 V, 1 MHz Min. Quality Factor : 100 - 4 @ Vr = -4 V, 1 GHz Operating Temperature Range (°C) : -55 to +150		M208, F27D, F30	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	ML4310 to ML4319	Microwave, Silicon, Tuning varactor Reverse current (max uA): 10 @Vr=-25V Forward voltage (max V): 1.0 @If= 100 mA Total Capacitance (max pF): 0.35 - 5.4 Quality Factor (min Q): 2750 - 1500 Operating Temperature Range (°C.): -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	
1	ML4331 to ML4335	Microwave, Silicon, Tuning varactor Reverse current (max uA): 10 @Vr=-40V Forward voltage (max V): 1.0 @If= 100 mA Total Capacitance (max pF): 0.53 - 2.47 Quality Factor (min Q): 2000 - 1350 Operating Temperature Range (°C.): -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	
1	ML4336 to ML4343	Microwave, Silicon, Tuning varactor Reverse current (max uA): 10 @Vr=-40V Forward voltage (max V): 1.0 @If= 100 mA Total Capacitance (max pF): 2.25 - 11.30 Quality Factor (min Q): 1350 - 800 Operating Temperature Range (°C.): -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	
1	ML4351 to ML4354	Microwave, Silicon, Tuning varactor Reverse current (max uA): 10 @Vr=-60V Forward voltage (max V): 1.0 @If= 100 mA Total Capacitance (max pF): 0.53 - 2.02 Quality Factor (min Q): 1150 - 900 Operating Temperature Range (°C.): -65 to +150		SEE SPEC	• RF2M Microwave	ESCC QPL	
1	ML4355 to ML4365	Microwave, Silicon, Tuning varactor Reverse current (max uA): 10 @Vr=-60V Forward voltage (max V): 1.0 @If= 100 mA Total Capacitance (max pF): 1.85- 17 Quality Factor (min Q): 850 - 500 Operating Temperature Range (°C.): -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	ML4402, ML4404 to ML4409 and ML40721	Microwave, Silicon, Tuning varactor Variants 0103,05, 0712, 1418, 20, 2227, 2933, 35, 3742, 4448, 50, 5257, 5963, 65, 6772, 7478, 80, 8284, 86, 88, 9092 (see spec) Operating Temperature Range (°C.): -65 to +150		SEE SPEC	• RF2M Microwave	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	BXY42-MESA	Microwave, Silicon, PIN. Reverse current (max uA): 10 @Vr=-50V Forward voltage (max V): 1.1 @If= 100 mA Total Capacitance (max pF): 0.24 RF power (W): 0.35 (Var.-01), 0.60 (Var.-02). Minor. carrier life time (min ns): 35 @If= 10 mA Package (max mm): DIA 1.45 x 1.95 x 1.35 variant 01 DIA 1.45 x 1.35 variant 02 Operating Temperature Range (°C.): -55 to +175		T, T1	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BXY43/44	Microwave, Silicon, PIN. Reverse current (max nA): 100 @Vr=-150V (Var.-01 to -04) @Vr=-200V (Var.-05 to -08) Forward voltage (max V): 1.0 (Var.-01 to -04) @If= 100mA 1.05 (Var.-05 to -08) @If= 100mA Total Capacitance Range (pF): 0/0.35 - 0.40/0.85 Power Dissipation (W): 0.5 Operating Temperature Range (°C.): -55 to +150		T, T1, Teller, Pill, FlatPack	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	DH50033 to DH50037	RF/MW PIN, Ultra Fast Switching, VR=-30 V. Variants 01 to 40 of detail spec.		SEE SPEC	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH50052 to DH50057	RF/MW PIN, Ultra Fast Switching, Variants 01 to 48 of detail spec.		SEE SPEC	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH50071 to DH50077	RF/MW PIN, Ultra Fast Switching Variants 01 to 56 of detail spec.		SEE SPEC	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH50101 to DH 50107	RF/MW PIN, Ultra Fast Switching, Variants 01 to 56 of detail spec.		SEE SPEC	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH50151 thru DH50157	RF/MW PIN, Ultra Fast Switching, VR=-150 V. Variants 01 to 56 of detail spec.		M208, F27D	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH50201 thru DH50209	RF/MW PIN, Ultra Fast Switching, VR=-200 V. Variants 01 to 70 of detail spec.		M208, F27D	• Cobham Microwave (Chelton Group)	ESCC QPL	
1	DH50251 thru DH50256	RF/MW PIN, Ultra Fast Switching, VR=-250 V. Variants 01 to 41 of detail spec.		M208, F27D	• Cobham Microwave (Chelton Group)	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	ML4207 to ML4209	Microwave, Silicon, PIN, Fast switching. Reverse current (max uA): 10 @Vr=-50V Forward voltage (max V): 1.1 @If= 50mA Total Capacitance Range (max pF): 0.47 - 1.17 Minority Carrier Lifetime (max ns): 30 @If= 10mA (Var.-01 to -25) 20 @If= 10mA (Var.-26 to -99) R.F. Power Dissipation (W): 0.47 to 1.6 Operating Temperature Range (°C.): -65 to +150		SEE SPEC	• RF2M Microwave	ESCC QPL	
1	ML4610, 4617, 4618, 4619	Microwave, Silicon, PIN, Fast switching. Reverse current (max uA): 10 @Vr=-15V (Var.-01 to -25) @Vr=-100V (Var.-26 to -99) Forward voltage (max V): 1.0 @If= 100mA Total Capacitance Range (max pF): 0.2 - 1.20 Minority Carrier Lifetime (max ns): 35 @If= 10mA (Var.-01 to -25) 400 @If= 10mA (Var.-26 to -99) R.F. Power Dissipation (W): 0.2 to 3.1 Operating Temperature Range (°C.): -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	
1	ML4611, ML4612, ML4614 and ML4615	Microwave, Silicon, PIN, Fast switching. Reverse current (max uA): 10 @Vr=-40V (Var.-01 to -50) @Vr=-70V (Var.-26 to -99) Forward voltage (max V): 1.5 @If= 100mA Total Capacitance Range (max pF): 0.2 - 1.20 Minority Carrier Lifetime (max ns): 70 @If= 10mA (Var.-01 to -50) 200 @If= 10mA (Var.-51 to -99) R.F. Power Dissipation (W): 0.2 to 2.5 Operating Temperature Range (°C.): -65 to +125 (vars 24, 49, 74) &150 (other variants)		SEE SPEC	• RF2M Microwave	ESCC QPL	
1	ML4622 to ML4624	Microwave, Silicon, PIN, Fast switching. Reverse current (max uA): 10 @Vr=-150V Forward voltage (max V): 1.3 @If= 100mA Total Capacitance Range (max pF): 0.3 - 1.20 Minority Carrier Lifetime (max ns): 700 @If= 4.5 mA R.F. Power Dissipation (W): 0.2 to 3.5 Operating Temperature Range (°C.): -65 to +125 (Variant - 24, -48 and -62) -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	ML4627 to ML4629	Microwave, Silicon, PIN, Fast switching. Reverse current (max uA): 10 @Vr=-200V Forward voltage (max V): 1.3 @If= 100mA Total Capacitance Range (max pF): 0.2 - 1.20 Minority Carrier Lifetime (max ns): 1200 @If= 4.5 mA R.F. Power Dissipation (W): 0.2 to 4.1 Operating Temperature Range (°C.): -65 to +125 (Variant -24, -48 and -62) -65 to +150		AS PER SPEC.	• RF2M Microwave	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	SFC 030	C Filter - Electromagnetic interference suppression, hermetically sealed. Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 470 to 22000 / 25 to 250 / 1.0 to 5.0 / 34 to 68 Size (max mm): DIA 4.10 x 16.90 Operating Temperature Range (°C): -55 to + 125		Axial	• EUROFARAD	ESCC QPL	
1	SFC 035	C Filter - Electromagnetic interference suppression, non-hermetically sealed. Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 470 to 220000 / 25 to 200 / 10 / 34 to 68 Operating Temperature Range (°C): -55 to + 125		AXIAL	• EUROFARAD	ESCC QPL	
1	SFC 040	C Filter - Electromagnetic interference suppression, non-hermetically sealed Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 470 to 220000 / 25 to 200 / 10 / 34 to 68 Operating Temperature Range (°C): -55 to + 125		AXIAL	• EUROFARAD	ESCC QPL	
1	SFC 100	C Filter - Electromagnetic interference suppression, hermetically sealed. Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 1000 to 1000000 / 25 to 200 / 10 / 41 to 70 Operating Temperature Range (°C): -55 to + 125		AXIAL	• EUROFARAD	ESCC QPL	
1	SFC 60	C Filter - Electromagnetic interference suppression, hermetically Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 680 to 220000 / 25 to 200 / 10 / 37 to 70 Size (max mm): DIA 6 x 32 (non-hermetically sealed) Operating Temperature Range (°C): -55 to + 125		AXIAL	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	SFC 60	C Filter - Electromagnetic interference suppression, hermetically (SCC 3008/026). Capacitance Rated Rated DC Insertion Loss Range (pF) Voltage (V) Current (A) (dB) @ 1GHz 680 to 220000 25 to 200 10 37 to 70 Size (max mm): DIA 6 x 20 (hermetically sealed) Size (max mm): Operating Temperature Range (°C): -55 to + 125		Axial	• EUROFARAD	ESCC QPL	
1	SFL 100	L Filter - Electromagnetic interference suppression, hermetically sealed Capacitance Rated Rated DC Insertion Loss Range (uF) Voltage (V) Current (A) (dB) @ 1GHz 0.0176 to 1.6 40 to 300 5, 10, 15 57 to 70 Size (max mm) : DIA 9.90 x 27.30 Operating Temperature Range (°C): -55 to + 125		Axial	• EUROFARAD	ESCC QPL	
1	SFP 035	Pi Filter - Electromagnetic interference suppression, non hermetically sealed. Capacitance Rated Rated DC Insertion loss Range (pF) Voltage (V) Current (A) (dB) @ 1GHz 2400 to 35200 35 to 200 10 50/55 to 70/70 (*) (*) With no current applied / With current applied Size (max mm): DIA 4.1 x 25 Operating Temperature Range (°C): -55 to + 125		Axial	• EUROFARAD	ESCC QPL	
1	SFP 040	Pi Filter - Electromagnetic interference suppression, non hermetically sealed. Capacitance Rated Rated DC Insertion loss Range(pF) Voltage (V) Current (A) (dB) @ 1GHz 750 to 4800 70 to 250 10 (DC/LF) 40/35 to 75/75 (*) (*) With no current applied / With current applied Size (max mm): DIA 5 x 31 Operating Temperature Range (°C): -55 to + 125		Axial	• EUROFARAD	ESCC QPL	
1	SFP 060	Pi Filter - Electromagnetic interference suppression, hermetically sealed. Capacitance Rated Rated DC Insertion loss Range (pF) Voltage (V) Current (A) (dB) @ 1GHz 2400 to 89600 35 to 500 10 65 to 75 Size (max mm): DIA 7.1 x 26.5 Operating Temperature Range (°C): -55 to + 125		AXIAL	• EUROFARAD	ESCC QPL	
1	SFP 060	Pi Filter - Electromagnetic interference suppression, hermetically sealed. Capacitance Rated Rated DC Insertion loss Range (pF) Voltage (V) Current (A) (dB) @ 1GHz 2400 to 89600 35 to 500 10 65 to 75 Size (max mm): DIA 7.1 x 26.5 Operating Temperature Range (°C): -55 to + 125		Axial	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	SFP 100	Pi Filter - Electromagnetic interference suppression, hermetically sealed. Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion loss (dB) @ 1GHz 160 to 1312000 / 50 to 300 / 10 / 70 Operating Temperature Range (°C): -55 to + 125		AXIAL	• EUROFARAD	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2210/101-*****	<Ratings> Parts number Voltage Current Nominal resistance JAXA2210/101- (V) (A) (m Ohm) A72V1AL 72 1.0 110-220 A72V1.5AL 72 1.5 70.0-163 A72V2AL 72 2.0 45.0-75.0 A72V3AL 72 3.0 20.0-43.8 A72V5AL 72 5.0 12.0-22.5 A72V7.5AL 72 7.5 8.20-13.8 A72V10AL 72 10.0 6.30-10.7 A72V15AL 72 15.0 4.00-7.00 A126V1AL 126 1.0 90.0-270 A126V3AL 126 3.0 20.0-95.0 A126V5AL 126 5.0 12.0-40.0 - Operating temperature range : -55C to +125C - Rated breaking capacity : 1,000A	JAXA-QTS-2210_101A	Radial	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2210 - Detail specification : JAXA-QTS-2210/101A - Application data sheet : JAXA-ADS-2210/101B 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2210/101-*****	<Ratings> Parts number Voltage Current Nominal resistance JAXA2210/101- (V) (A) (m Ohm) A72V1AL 72 1.0 110-220 A72V1.5AL 72 1.5 70.0-163 A72V2AL 72 2.0 45.0-75.0 A72V3AL 72 3.0 20.0-43.8 A72V5AL 72 5.0 12.0-22.5 A72V7.5AL 72 7.5 8.20-13.8 A72V10AL 72 10.0 6.30-10.7 A72V15AL 72 15.0 4.00-7.00 A126V1AL 126 1.0 90.0-270 A126V3AL 126 3.0 20.0-95.0 A126V5AL 126 5.0 12.0-40.0 - Operating temperature range : -55C to +125C - Rated breaking capacity : 1,000A	JAXA-QTS-2210_101A	Radial	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2210 - Detail specification : JAXA-QTS-2210/101A - Application data sheet : JAXA-ADS-2210/101B 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2210/101-*****	<Ratings> Parts number Voltage Current Nominal resistance JAXA2210/101- (V) (A) (m Ohm) A72V1AL 72 1.0 110-220 A72V1.5AL 72 1.5 70.0-163 A72V2AL 72 2.0 45.0-75.0 A72V3AL 72 3.0 20.0-43.8 A72V5AL 72 5.0 12.0-22.5 A72V7.5AL 72 7.5 8.20-13.8 A72V10AL 72 10.0 6.30-10.7 A72V15AL 72 15.0 4.00-7.00 A126V1AL 126 1.0 90.0-270 A126V3AL 126 3.0 20.0-95.0 A126V5AL 126 5.0 12.0-40.0 - Operating temperature range : -55C to +125C - Rated breaking capacity : 1,000A	JAXA-QTS-2210_101A	Radial	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2210 - Detail specification : JAXA-QTS-2210/101A - Application data sheet : JAXA-ADS-2210/101B 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA2210/102- *****	<Ratings> Parts number Voltage Current Nominal resistance JAXA2210/102- (V) (A) (m Ohm) A72V1AA 72 1.0 110-220 A72V1.5AA 72 1.5 57.0-114 A72V2AA 72 2.0 36.0-72.0 A72V3AA 72 3.0 18.0-36.0 A72V5AA 72 5.0 11.0-22.0 A72V7.5AA 72 7.5 5.50-11.0 A72V10AA 72 10.0 4.80-9.50 A72V15AA 72 15.0 3.80-7.50 A126V1AA 126 1.0 135-270 A126V3AA 126 3.0 38.0-76.0 A126V5AA 126 5.0 14.0-28.0 - Operating temperature range : -55C to +125C - Rated breaking capacity : 1,000A		SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2210 - Detail specification : JAXA-QTS-2210/102 - Application data sheet : JAXA-ADS-2210/102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as
1	MGA-S	Surface mount, Thin Film Rated Voltage (VAC or VDC): 125/125, 63/125 and 32/125 by variant AC Interrupt Current (A): 50 at maximum rated voltage, power factor> 0.95 DC Interrupt Current (A): at maximum rated voltage, time constant ≤ 1 ms: Variants 01 to 10: 300 Variants 11 and 12: 50 Rated Current (VAC and VDC): 0.14 to 3.5 A by variant Operating Temperature Range, (°C): -50 to +125 (90% IR to 107% IR)		SMD	• Schurter AG	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	12xxxxxx	RF filter air coil.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM, SMT optional)	• Flux A/S	Others	Qualification sample: Q23
2	12xxxxxx	RF filter air coil.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM, SMT optional)	• Flux A/S	Others	Qualification sample: Q23
2	12xxxxxx	RF filter air coil.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM, SMT optional)	• Flux A/S	Others	Qualification sample: Q23
2	12xxxxxx	RF filter air coil.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM, SMT optional)	• Flux A/S	Others	Qualification sample: Q23
2	12xxxxxx	RF filter air coil.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM, SMT optional)	• Flux A/S	Others	Qualification sample: Q23
2	12xxxxxx	RF filter air coil.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM, SMT optional)	• Flux A/S	Others	Qualification sample: Q23

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	12xxxxxx	Inductors based on toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads, SMT, THM	• Flux A/S	Others	Qualification samples: Q13, Q14, Q16, Q18, Q19, Q21, Q22
2	12xxxxxx	Inductors based on toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads, SMT, THM	• Flux A/S	Others	Qualification samples: Q13, Q14, Q16, Q18, Q19, Q21, Q22
2	12xxxxxx	Inductors based on toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads, SMT, THM	• Flux A/S	Others	Qualification samples: Q13, Q14, Q16, Q18, Q19, Q21, Q22
2	12xxxxxx	Inductors based on toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads, SMT, THM	• Flux A/S	Others	Qualification samples: Q13, Q14, Q16, Q18, Q19, Q21, Q22
2	12xxxxxx	Inductors based on toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads, SMT, THM	• Flux A/S	Others	Qualification samples: Q13, Q14, Q16, Q18, Q19, Q21, Q22
2	12xxxxxx	Inductors based on toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads, SMT, THM	• Flux A/S	Others	Qualification samples: Q13, Q14, Q16, Q18, Q19, Q21, Q22

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	MSCI 10000	RF, Moulded, Surface mount. Inductance Range (uH) Tol. (%) Rated DC Current (mA) Q min 0.010 to 10 2,5,10 750 to 87 60 to 42 Dielectric withstanding voltage (Vrms): 200 Size (max mm): 2.67 x 2.80 x 2.16 Operating Temperature Range (°C.): -55 to +125.		SMD	• MICROSPIRE	ESCC QPL	
1	MSCI 12000	RF, Moulded, Surface mount. Inductance Range (uH) Tol. (%) Rated DC Current (mA) Q min 12 to 1000 2,5,10 110 to 15 37 to 12 Dielectric withstanding voltage (Vrms): 200 Size (max mm): 2.67 x 2.80 x 2.54 Operating Temperature Range (°C.): -55 to +125.		SMD	• MICROSPIRE	ESCC QPL	
1	MSCI 20000	RF, Moulded, Surface mount. Inductance Range (uH) Tol. (%) Rated DC Current (mA) Q min 0.010 to 1000 10 1000 to 25 75 to 30 Dielectric withstanding voltage (Vrms): 200 Size (max mm): 3.38 x 4.14 x 3.30 Operating Temperature Range (°C.): -55 to +125.		SMD	• MICROSPIRE	ESCC QPL	
1	MSCI H01	RF, Moulded, Surface mount. Inductance Range (uH) Tol. (%) Rated DC Current (mA) Q min 0.380 to 100 15 1500 to 100 30 Dielectric withstanding voltage (Vrms): 200 Operating Temperature Range (°C.): -55 to +125.		SMD	• MICROSPIRE	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	19xxxxxx	Inductor assembly based on toroidal cores combined with RM transformers.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Inductor assembly based on toroidal cores combined with RM transformers.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Inductor assembly based on toroidal cores combined with RM transformers.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Inductor assembly based on toroidal cores combined with RM transformers.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Inductor assembly based on toroidal cores combined with RM transformers.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Inductor assembly based on toroidal cores combined with RM transformers.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
1	CMC	Chokes, Common Mode, Fixed, Moulded, SMD, Based on Series CMC Variant 01: CMC15 Variant 03: CMC18 Variant 05: CMC22		SMD	• MICROSPIRE	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	SESI types	Power Inductors,Moulded, SMD, based on Series SESI Variant 01 for SESI14 Variant 02 for SESI15 Variant 03 for SESI15W Variant 04 for SESI18 Variant 05 for SESI9.1 Variant 06 for SESI22 Variant 07 for SESI32WR Variant 08 for SESI32PR		SMD	• MICROSPIRE	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AT697F	SPARC V8 processor based on ESA LEON2 FT model, produced on the AT58KRHA process using ATC18RHA standard cell library, 100MHz, 85MIPS, 100KRADS, LU immune, SEU & SET hardened, very low power	SMD 5962-07224	MQFP256 / MCGA349	• ATMEL France	MIL QML	
1	AT7913E	SpaceWire remote terminal controller with LEON2FT embedded processor	SMD 5962-10A03	LGA349	• ATMEL France	MIL QML	
1	TSC695F	Single chip, 32 bit, SPARC Microprocessor Process SCMOS3/2RTP Operating temperature range : -55 / +125 °C		QFP 256	• ATMEL France	MIL QML	Also available with SMD/5962-00540
1	TSC695FL	Single chip, 32 bit, SPARC Microprocessor Specified at 3.3 V with 12 MIPs Process SCMOS3/2RTP Operating temperature range : -55 / +125 °C	SMD 5962-03246	MQFP256	• ATMEL France	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AT 68166HT	16 MegaBit 3.3V (5V tolerant) SRAM Multi-Chip Module	SMD 5962-06229	MQFP68	• ATMEL France	MIL QML	SEE behaviour should be verified where necessary
1	AT60142H	3.3 V 512Kx8 SRAM High speed, rad-hard version Operating temperature range : -55 / +125 °C	SMD 5962-05208	FP36	• ATMEL France	MIL QML	SEE behaviour should be verified where necessary
1	AT60142HT	5V tolerant 512Kx8 SRAM High speed, rad-hard version Operating temperature range : -55 / +125 °C	SMD 5962-05208	FP36	• ATMEL France	MIL QML	
1	AT68166H	16 MegaBit 3.3V SRAM Multi-Chip Module	SMD 5962-06229	MQFP68	• ATMEL France	MIL QML	SEE behaviour should be verified where necessary
1	SMDJ-65608EV-30	128Kx8 SRAM	89598	FP-32	• ATMEL France	MIL QML	Also available with as variant 04 of ESCC 9301/047
1	SMDJ-65609E	3.3 V 128Kx8 SRAMOperating temperature range : -55 / +125 °C		FP 32	• ATMEL France	MIL QML	SEE sensitivity: in addition to SEUs, this device has exhibited Multiple Bit Upset (MBU) sensitivity in the form of double upset in the same 8 bit data word. Refer to the manufacturer for details. Error correction codes may need tol be implemented accordingly

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	MMSD32032602S-J	1 Gb (32M x 32) SDRAM memory module	3DPA-1600-4 (Detail)	SOP 70-0635	• 3D-Plus	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AT40KEL040	40k Gates SEU hardened reprogrammable FPGA DSP Optimized Core Cell and Distributed FreeRam, Enhanced Performance Improvement and Bi-directional I/Os (3.3 V) Operating temperature range: -55 to +125 °C		MQFP 160	• ATMEL France	Not qualified	Also available with SMD/5962-03250
1	ATF280F	SRAM Based Re programmable hardened FPGA , 280K equivalent gates	SMD 5962-12225	MQFPT352 and MQFPF256	• ATMEL France	MIL QML	Mil-Std 883 TM 1019 TO 100kRad(Si) , tested up to 300kRads(Si) : equivalent to Class R
1	ATF280F	SRAM Based Re programmable hardened FPGA , 280K equivalent gates	SMD 5962-12225	MQFPT352 and MQFPF256	• ATMEL France	MIL QML	Mil-Std 883 TM 1019 TO 100kRad(Si) , tested up to 300kRads(Si) : equivalent to Class R
1	ATF280F	SRAM Based Re programmable hardened FPGA , 280K equivalent gates	SMD 5962-12225	MQFPT352 and MQFPF256	• ATMEL France	MIL QML	Mil-Std 883 TM 1019 TO 100kRad(Si) , tested up to 300kRads(Si) : equivalent to Class R
1	ATF280F	SRAM Based Re programmable hardened FPGA , 280K equivalent gates	SMD 5962-12225	MQFPT352 and MQFPF256	• ATMEL France	MIL QML	Mil-Std 883 TM 1019 TO 100kRad(Si) , tested up to 300kRads(Si) : equivalent to Class R
1	ATF280F	SRAM Based Re programmable hardened FPGA , 280K equivalent gates	SMD 5962-12225	MQFPT352 and MQFPF256	• ATMEL France	MIL QML	Mil-Std 883 TM 1019 TO 100kRad(Si) , tested up to 300kRads(Si) : equivalent to Class R

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	ATC18RHA	0.18u CMOS ASIC standard cell library with predefined matrix sizes: ATC18RHA95_216 allowing to integrate typically 1Mgates ATC18RHA95_324 allowing to integrate typically 2.2Mgates ATC18RHA95_404 allowing to integrate typically 3.5Mgates ATC18RHA95_504 allowing to integrate typically 5.5MgatesPredefined combinations of matrix and package: 196 to 352 MQFPOperating temperature range : -55 / +125 C		MQFP	• ATMEL France	ESCC QML	Also available with 5962-06B02

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	LM124AW	Low Power Quad Bipolar Operational Amplifier Operating temperature range: -55 / +125 °C	SMD 5962-99504	FP-14	• Texas Instruments SVA	MIL QML	Part is R level (100 kRad(Si)) TID tolerant, Var. 02 is "not sensitive to low dose rate"; it is recommended to procure P/N 5962R9950402VDA (no lower TID levels).
1	OP27A	Single, Ultra-Low Noise and Offset, Internally Compensated Operational Amplifier	SMD 5962-94680	DIL FP10	• ANALOG DEVICES	MIL QML	
1	OP470AY	Operational Amplifier, Quad, Very Low Noise	SMD 5962-88565	DIL, FP24	• ANALOG DEVICES	MIL QML	
1	OP77	Ultra low offset Voltage Operational Amplifier (replacement of OP-07 and OP-108A).	SMD 5962-87738	LCC20 FP10	• ANALOG DEVICES	MIL QML	
1	RHF310K-01V	Operational Amplifier Single, High Speed, Current Feedback Operating temperature range: -55 / +125 °C	SMD 5962-07233	FP-8	• STMicroelectronics	MIL QML	
1	RHF330K-01V	Operational Amplifier, Single, High Speed, Current Feedback Operating Temperature Range: -55 to +125 °C	SMD 5962-07231	FP-8	• STMicroelectronics	Others	New component
1	RHF350K-01V	Rad-hard 550 MHz low noise operational amplifier.	SMD 5962-07232	FLAT PACK 8 LEADS	• STMicroelectronics	Others	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF350K-01V	Rad-hard 550 MHz low noise operational amplifier.	SMD 5962-07232	FLAT PACK 8 LEADS	• STMicroelectronics	Others	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF350K-01V	Rad-hard 550 MHz low noise operational amplifier.	SMD 5962-07232	FLAT PACK 8 LEADS	• STMicroelectronics	Others	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF350K-01V	Rad-hard 550 MHz low noise operational amplifier.	SMD 5962-07232	FLAT PACK 8 LEADS	• STMicroelectronics	Others	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF43B	Operational Amplifier, Single Operating Temperature Range: -55 to +125 °C	SMD 5962-06237	FP-8	• STMicroelectronics	MIL QML	
1	RHF484K-01V	Rad-hard precision quad operational amplifier	SMD 5962-08222	FLAT PACK 14 LEADS	• STMicroelectronics	MIL QML	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF484K-01V	Rad-hard precision quad operational amplifier	SMD 5962-08222	FLAT PACK 14 LEADS	• STMicroelectronics	MIL QML	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	RHF484K-01V	Rad-hard precision quad operational amplifier	SMD 5962-08222	FLAT PACK 14 LEADS	• STMicroelectronics	MIL QML	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF484K-01V	Rad-hard precision quad operational amplifier	SMD 5962-08222	FLAT PACK 14 LEADS	• STMicroelectronics	MIL QML	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF484K-01V	Rad-hard precision quad operational amplifier	SMD 5962-08222	FLAT PACK 14 LEADS	• STMicroelectronics	MIL QML	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)
1	RHF484K-01V	Rad-hard precision quad operational amplifier	SMD 5962-08222	FLAT PACK 14 LEADS	• STMicroelectronics	MIL QML	QUALIFIED I.A.W. Mil-Std-883 TM 1019 TO 300 kRad(Si)

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	LM117H	3-Terminal Adjustable Positive Regulator, 0.5A	SMD 5962-07229	TO-39, Ceramic SOIC	• Texas Instruments SVA	MIL QML	
1	LM117K	3-Terminal Adjustable Positive Regulator, 1.5A	SMD 5962-99517	TO-3	• Texas Instruments SVA	MIL QML	
1	LM137H	3 Terminal Adjustable Negative Regulator, 0.5A	SMD 5962-99517	TO-39	• Texas Instruments SVA	MIL QML	
1	RH-L4913 2.5 V	Fixed, Positive, 2.5 V, 2A Operating temperature range: -55 / +125 °C	SMD 5962-02534	FP16, SMD.5	• STMicroelectronics	MIL QML	
1	RH-L4913 3.3 V	Fixed, Positive, 3.3 V, 2A Operating temperature range: -55 / +125 °C	SMD 5962-02535	FP16, SMD.5	• STMicroelectronics	MIL QML	
1	RH-L4913 5 V	Fixed, Positive, 5 V, 2A Operating temperature range: -55 / +125 °C	SMD 5962-02536	FP16, SMD.5	• STMicroelectronics	MIL QML	
1	RH-L4913 ADJ	Adjustable, Positive, Low Dropout, 2A Operating temperature range: -55 / +125 °C	SMD 5962-02524	FP16	• STMicroelectronics	MIL QML	
1	RH-L7913 ADJ	Adjustable, Negative, Low Dropout, 2A Operating temperature range: -55 / +125 C	SMD 5962-02532	FP-16	• STMicroelectronics	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AD584SH	Voltage Reference, Precision Pin Programmable Variant 01 od SMD/5962-38128 (S precision type) Operating Temperature range: -55 to +125 °C	SMD 5962-38128	8-Pin Metal Can	• ANALOG DEVICES	MIL QML	
1	LM111W	Voltage Comparator/Buffer, Precision	SMD 5962-00524	FP	• Texas Instruments SVA	MIL QML	
1	LM119	Dual, High Speed Voltage Comparator	SMD 5962-96798	FP	• Texas Instruments SVA	MIL QML	Part is not ELDRS-free
1	LM139AWR	Quad, Single Supply, Low Power Voltage Comparator	SMD 5962-96738	FP14	• Texas Instruments SVA	MIL QML	
1	LM193AH	Dual, Low Power, Low Offset Voltage Comparator	SMD 5962-94526	Metal Can	• Texas Instruments SVA	Others	Part is not ELDRS-free

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	ST1843FK	High performance Pulse Width Modulator controller	RNS/AS/10-323-01/ce-rev2	FP8	• STMicroelectronics	Others	This part is very sensitive to SET
1	ST1845FK	High performance current mode PWM controller	RNS/AS/10-326-02/ce-rev2	FP8	• STMicroelectronics	Others	This part is very sensitive to SET

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AD574AT	A/D Converter, 12-Bit, High Speed, with Microprocessor Interface	SMD 5962-85127	FP	• ANALOG DEVICES	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV10AS180AG	The EV10AS180A is a 10-bit 1.5 GSps ADC. The device includes a front-end Track and Hold stage (T/H), followed by an analog encoding stage (Analog Quantizer) which outputs analog residues resulting from analog quantization. Successive banks of latches regenerate the analog residues into logical levels before entering an error correction circuitry and a resynchronization stage followed by a DEMUX with 100Ohm differential output buffers.	sp31s209260reva1_escc_detail_specificationadc_ev10as180a	hermetic Ceramic Grid Array	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV10AS180AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV10AS180AG	The EV10AS180A is a 10-bit 1.5 GSps ADC. The device includes a front-end Track and Hold stage (T/H), followed by an analog encoding stage (Analog Quantizer) which outputs analog residues resulting from analog quantization. Successive banks of latches regenerate the analog residues into logical levels before entering an error correction circuitry and a resynchronization stage followed by a DEMUX with 100Ohm differential output buffers.	sp31s209260reva1_escc_detail_specificationadc_ev10as180a	hermetic Ceramic Grid Array	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV10AS180AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV10AS180AG	The EV10AS180A is a 10-bit 1.5 GSps ADC. The device includes a front-end Track and Hold stage (T/H), followed by an analog encoding stage (Analog Quantizer) which outputs analog residues resulting from analog quantization. Successive banks of latches regenerate the analog residues into logical levels before entering an error correction circuitry and a resynchronization stage followed by a DEMUX with 100Ohm differential output buffers.	sp31s209260reva1_escc_detail_specificationadc_ev10as180a	hermetic Ceramic Grid Array	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV10AS180AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV10AS180AG	The EV10AS180A is a 10-bit 1.5 GSps ADC. The device includes a front-end Track and Hold stage (T/H), followed by an analog encoding stage (Analog Quantizer) which outputs analog residues resulting from analog quantization. Successive banks of latches regenerate the analog residues into logical levels before entering an error correction circuitry and a resynchronization stage followed by a DEMUX with 100Ohm differential output buffers.	sp31s209260reva1_escc_detail_specificationadc_ev10as180a	hermetic Ceramic Grid Array	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV10AS180AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	RHF1201KSO-01V	Rad-Hard, 12 bit, 0.5 to 50 MHz sampling frequency Analog-to-Digital ConverterCMOS, 0.25 um technologyOperating temperature range: -55 / +125 °C		FP-48	• STMicroelectronics	Others	For single ended application please verify with ST if the applied condition are inside the recommended operating area for single mode application.
1	RHF1401	Rad-Hard 14-bit 20Msps 85mW A/D ConverterOperating Temperature Range: -55 to +125 °C		SO-48	• STMicroelectronics	Others	For single ended application please verify with ST if the applied condition are inside the recommended operating area for single mode application.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	DAC08	8-Bit D/A Converters, 0.19% Linearity	SMD 5962-89932	DIL, FP16	• ANALOG DEVICES	MIL QML	
2	EV12DS130AG Datasheet reference 1080	The EV12DS130A is a 12-bit 3Gsps Digital to Analog Converter with an integrated 4:1 or 2:1 multiplexer. It embeds different output modes (NRZ, RTZ, NRTZ, RF) that allows to get outstanding performances in the different Nyquist zones. Different user friendly features (OCDS, PSS, STVF, HTVF) allow an easy interfacing with standard LVDS FPGAs. An input Under Clocking Mode is also available in order to allow input data rate to be at half the EV12DS130 sampling rate.	sp31s208608reva3_escc_detail_specificatio_ev12ds130a	hermetic Ceramic Grid Array CGA 255	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV12DS130AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV12DS130AG Datasheet reference 1080	The EV12DS130A is a 12-bit 3Gsps Digital to Analog Converter with an integrated 4:1 or 2:1 multiplexer. It embeds different output modes (NRZ, RTZ, NRTZ, RF) that allows to get outstanding performances in the different Nyquist zones. Different user friendly features (OCDS, PSS, STVF, HTVF) allow an easy interfacing with standard LVDS FPGAs. An input Under Clocking Mode is also available in order to allow input data rate to be at half the EV12DS130 sampling rate.	sp31s208608reva3_escc_detail_specificatio_ev12ds130a	hermetic Ceramic Grid Array CGA 255	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV12DS130AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV12DS130AG Datasheet reference 1080	The EV12DS130A is a 12-bit 3Gsps Digital to Analog Converter with an integrated 4:1 or 2:1 multiplexer. It embeds different output modes (NRZ, RTZ, NRTZ, RF) that allows to get outstanding performances in the different Nyquist zones. Different user friendly features (OCDS, PSS, STVF, HTVF) allow an easy interfacing with standard LVDS FPGAs. An input Under Clocking Mode is also available in order to allow input data rate to be at half the EV12DS130 sampling rate.	sp31s208608reva3_escc_detail_specificatio_ev12ds130a	hermetic Ceramic Grid Array CGA 255	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV12DS130AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	EV12DS130AG Datasheet reference 1080	The EV12DS130A is a 12-bit 3Gsps Digital to Analog Converter with an integrated 4:1 or 2:1 multiplexer. It embeds different output modes (NRZ, RTZ, NRTZ, RF) that allows to get outstanding performances in the different Nyquist zones. Different user friendly features (OCDS, PSS, STVF, HTVF) allow an easy interfacing with standard LVDS FPGAs. An input Under Clocking Mode is also available in order to allow input data rate to be at half the EV12DS130 sampling rate.	sp31s208608reva3_escc_detail_specificatio_ev12ds130a	hermetic Ceramic Grid Array CGA 255	• E2V	Others	- For the medium/short term procurement, Solder Column Interposer (SCI) period availability has been extended based on the innovative storage solution Thermal Absorptive Gas Barrier TAB ® of HTV group as described in the official e2v announcement dated from June 18th, 2012. - For the medium long term procurement, six sigma columns mounted by six sigma have been qualified on EV10AS180 and EV12DS130 products by e2v. Note that these 2 products columned by Six Sigma are EAR export classified (not ITAR). So that EV12DS130AG could be delivered with the different column options - Column less : LGA - SCI interposer : Ci CGA (Delivery up to Feb 2016) - Mounted with 6 sigma columns : CCGA

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AD590M	Temperature Transducer, Two Terminals Forward voltage (E+ to E-)(Vdc): +44 Forward voltage (E- to E+)(Vdc): -20 Breakdown voltage (Case to E+ or E-)(Vdc): ± 200 Rated performance temperature range (°C.): -55 to +150	SMD 5962-87571	FP	• ANALOG DEVICES	MIL QML	
1	UC1707	High Speed Schottky, Dual Channel Power Driver.	SMD 5962-87619	DIL16 LCC20	• Texas Instruments Power Management	MIL QML	Part is not ELDR-free

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	4001B	QUAD 2-INPUT NOR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4002B	DUAL 4-INPUT NOR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4008B	4-BIT FULL ADDER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40103B	PRESETTABLE 8-BIT SYNCHRONOUS DOWN-COUNTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40106B	HEX SCHMITT TRIGGER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40107B	DUAL 2-INPUT NAND BUFFER / DRIVER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40109B	QUAD LOW-TO-HIGH 3-STATE VOLTAGE LEVEL SHIFTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4011B	QUAD 2 INPUT NAND GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4012B	DUAL 4-INPUT NAND GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4013B	DUAL D-TYPE FLIP-FLOP		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4014B	8-STAGE SYNCHRONOUS STATIC SHIFT REGISTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4015B	DUAL 4-STAGE STATIC SHIFT REGISTER WITH SERIAL INPUT / PARALLEL OUTPUT		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40161B	PROGRAMMABLE 4-BIT BINARY COUNTER WITH ASYNCHRONOUS CLEAR		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40174B	HEX D-TYPE FLIP-FLOP		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4017B	DECADE COUNTER / DIVIDER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4018B	PRESETTABLE DIVIDE-BY-N COUNTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	40193B	PRESETTABLE BINARY UP/DOWN COUNTER (DUAL CLOCK WITH RESET)		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4019B	QUAD AND/OR SELECT GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4020B	14-STAGE RIPPLE CARRY BINARY COUNTER / DIVIDER		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	4021B	8-STAGE STATIC SHIFT REGISTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4022B	OCTAL COUNTER/DIVIDER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4023B	TRIPLE 3-INPUT NAND GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4024B	7-STAGE RIPPLE CARRY BINARY COUNTER / DIVIDER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4025B	TRIPLE 3-INPUT NOR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4027B	DUAL J-K MASTER-SLAVE FLIP-FLOP		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4028B	BCD-TO-DECIMAL OR BINARY-TO-OCTAL DECODER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4029B	PRESETTABLE UP/DOWN COUNTER BINARY OR BCD DECADE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4030B	QUAD 2-INPUT EXCLUSIVE OR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4034B	8-STAGE STATIC BIDIRECTIONAL PARALLEL/SERIAL INPUT/OUTPUT BUSN REGISTER WITH 3 STATE OUTPUT		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4040B	12-STAGE RIPPLE CARRY BINARY COUNTER / DIVIDER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4041UB	QUAD TRUE/COMPLEMENT BUFFER WITH UNBUFFERED OUTPUTS		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4042B	QUAD CLOCKED D LATCH		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4043B	QUAD NOR 3-STATE R/S LATCHES		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4044B	QUAD NAND 3-STATE R/S LATCH		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4046B	MICROPOWER PHASE-LOCKED LOOP		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4047B	LOW POWER MONOSTABLE / ASTABLE MULTIVIBRATOR		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4049UB	HEX BUFFER-CONVERTER (INVERTING TYPE)		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4050B	HEX BUFFER-CONVERTER (NON-INVERTING TYPE)		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	4051B	ANALOGUE MULTIPLEXER / DEMULTIPLEXER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4052B	ANALOGUE MULTIPLEXER/DEMULTIPLEXER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4053B	TRIPLE 2-CHANNEL ANALOGUE MULTIPLEXER/DEMULTIPLEXER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4060B	14-STAGE RIPPLE-CARRY BINARY COUNTER/DIVIDER AND OSCILLATOR		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4063B	4-BIT MAGNITUDE COMPARATOR		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4066B	QUAD BILATERAL SWITCH		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4067B	ANALOGUE ULTIPLEXER/DEMULTIPLEXER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4068B	8-INPUT NAND GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4069UB	HEX INVERTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4071B	QUAD 2-INPUT OR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4072B	DUAL 4-INPUT OR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4073B	TRIPLE 3-INPUT AND GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4075B	TRIPLE 3-INPUT OR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4076B	4-BIT D TYPE REGISTER WITH 3-STATE OUTPUT		FP	• STMicroelectronics	ESCC QPL	
1	4077B	QUAD EXCLUSIVE NOR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4078B	8-INPUT OR/NOR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4081B	8 INPUT OR-NOR GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4082B	DUAL 4-INPUT AND GATE		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4093B	QUAD 2 INPUT NAND GATE WITH SCHMITT TRIGGER INPUT		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	4094B	8-STAGE SHIFT AND STORE BUS REGISTER WITH SYNCHRONOUS SERIAL OUTPUTS AND 3-STATE PARALLEL OUTPUT		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4098B	DUAL MONOSTABLE MULTIVIBRATOR		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4503B	HEX NON-INVERTING BUFFER WITH 3-STATE OUTPUT		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4512B	8-CHANNEL MULTIPLEXER WITH 3-STATE OUTPUT		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4514B	4-BIT LATCH/4-TO-16 DECODER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4515B	4-BIT LATCH/4-TO-16 LINE DECODER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4516B	SYNCHONOUS QUAD PRESETTABLE UP/DOWN BINARY COUNTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4520B	DUAL BINARY UP COUNTER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4532B	8-BIT PRIORITY ENCODER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4538B	DUAL MONOSTABLE MULTIVIBRATOR WITH RESET		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4555B	DUAL 1-OF-4 DECODER / DEMULTIPLEXER		FP, DIL	• STMicroelectronics	ESCC QPL	
1	4556B	DUAL 1-OF-4 DECODER/DEMULTIPLEXER (OUPUT LOW ON SELECT)		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54AC00	Quad 2-Input NAND Gate	SMD 5962-87549	FP	• STMicroelectronics	MIL QML	
1	54AC02	Quad 2-Input NOR Gate	SMD 5962-87612	FP	• STMicroelectronics	MIL QML	
1	54AC04	Hex Inverter	SMD 5962-87609	FP	• STMicroelectronics	MIL QML	
1	54AC08	Quad 2-Input AND Gate	SMD 5962-87615	FP	• STMicroelectronics	MIL QML	
1	54AC10	Triple 3-Input NAND Gate	SMD 5962-87610	FP	• STMicroelectronics	MIL QML	
1	54AC11	Triple 3-Input AND Gate	SMD 5962-87611	FP	• STMicroelectronics	MIL QML	
1	54AC138	Decoder/Demultiplexer, 3-to-8 line	SMD 5962-87622	FP	• STMicroelectronics	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	54AC139	Dual 2 To 4 Line Decoder/Demultiplexer, with Inverted Outputs	SMD 5962-87623	FP	• STMicroelectronics	MIL QML	
1	54AC14	Hex Schmitt Trigger Inverter	SMD 5962-87624	FP	• STMicroelectronics	MIL QML	
1	54AC157	Quad 2-Input Multiplexer	SMD 5962-89539	FP	• STMicroelectronics	MIL QML	
1	54AC161	Synchronous 4-Bit Binary Counter	SMD 5962-89561	FP	• STMicroelectronics	MIL QML	
1	54AC16244	16 bit Buffer/Driver with three-state outputs	SMD 5962-04210	FP	• STMicroelectronics	MIL QML	
1	54AC240	Octal Bus Buffer with Inverted 3-State Outputs	SMD 5962-87550	FP	• STMicroelectronics	MIL QML	
1	54AC244	Octal Buffer/Line Driver with 3-State Outputs	SMD 5962-87552	FP	• STMicroelectronics	MIL QML	
1	54AC245	Bus Transceiver, 8-Bit, Bidirectional, with 3-State Inputs/Outputs	SMD 5962-87758	FP	• STMicroelectronics	MIL QML	
1	54AC273	Octal D-Type Flip-Flop with Clear	SMD 5962-87756	FP	• STMicroelectronics	MIL QML	
1	54AC32	Quad 2-Input OR Gate	SMD 5962-87614	FP	• STMicroelectronics	MIL QML	
1	54AC373	Octal D-Type Transparent Latches with 3-State Outputs	SMD 5962-87555	FP	• STMicroelectronics	MIL QML	
1	54AC374	Octal D-Type Flip-Flop with 3-State Outputs	SMD 5962-87694	FP	• STMicroelectronics	MIL QML	
1	54AC541	Octal Bus Buffer with 3-State Outputs	SMD 5962-88706	FP	• STMicroelectronics	MIL QML	
1	54AC74	Octal D-Type Flip-Flop with 3-State Outputs	SMD 5962-88520	FP	• STMicroelectronics	MIL QML	
1	54AC86	Quad 2-Input Exclusive OR Gate	SMD 5962-89550	FP	• STMicroelectronics	MIL QML	
1	54ACT00	Quad 2-Input NAND Gate, with TTL Compatible Inputs	SMD 5962-87699	FP	• STMicroelectronics	Not qualified	
1	54ACT240	Octal Bus Buffer with Inverted 3-State Outputs, TTL Compatible Inputs	SMD 5962-87759	FP	• STMicroelectronics	Not qualified	
1	54ACT244	Octal Buffer/Line Driver with 3-State Outputs, TTL Compatible Inputs	SMD 5962-87760	FP	• STMicroelectronics	Not qualified	
1	54ACT245	Octal Bidirectional Transceiver with 3-State Outputs, TTL Compatible Inputs	SMD 5962-87663	FP	• STMicroelectronics	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	54ACT574	Octal D-Type Flip-Flop with 3-State Outputs, TTL Compatible Inputs	SMD 5962-89601	FP	• STMicroelectronics	Not qualified	
1	54ACT86	Quad 2-Input Exclusive OR Gate, TTL Compatible Inputs	SMD 5962-90687	FP	• STMicroelectronics	MIL QML	
1	54HC00	Quad 2-Input NAND Gate		FP, DIL	• STMicroelectronics	ESCC QPL	100 kRad(Si) TID test performed on each wafer lot i.a.w. ST internal procedure
1	54HC02	Quad 2-Input NOR Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC03	Quad 2-Input Nand Gate with Open Drain Output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC04	Hex Inverter		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC08	Quad 2-Input Positive AND Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC10	Triple 3-Input NAND Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC109	Dual J-K Positive Edge Triggered Flip-Flop with Preset and Clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC11	Triple 3-Input AND Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC123	Dual positive or negative edge Schmitt-retriggerable monostable multivibrator with clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC125	Quad Bus Buffers with 3 State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC132	Quad 2-Input NAND Gate with Schmitt-trigger Inputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC137	3-to-8 line decoder/demultiplexer with address latch and inverted output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC138	3-to-8 Line Decoders/Demultiplexers with Inverted Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC139	Dual 2-to-4-line Decoders/Demultiplexers with Inverted Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC14	Hex Schmitt Trigger Inverter		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC148	8-line to -3line priority encoder		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	54HC151	8-line to 1-line Data Selectors/Multiplexer		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC153	Dual 4-line to 1-line data selectors/multiplexer		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC154	4-to-6 Line Decoder/Demultiplexer with Inverted Output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC157	Quad 2-line to 1-line Data Selectors/Multiplexers		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC158	Quad 2-to-1-Line Data Selectors/Multiplexers with Inverted Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC160	Synchrorous presettable 4-bit decade counter with direct clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC161	Asynchronous 4-Bit Binary Counter		FP,DIL	• STMicroelectronics	ESCC QPL	
1	54HC164	8-bit Sipo Shift Register		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC165	8-bit Sipo Shift Register		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC166	8-bit Piso Shift Register		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC174	Hex D-Type Edge-triggered Flip-Flop with Clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC175	Quad D-Type Edge-triggered Flip-Flop with Clear		FP,DIL	• STMicroelectronics	ESCC QPL	
1	54HC191	Synchronous 4-Bit Up/Down Binary Counter		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC193	Synchronous 4-Bit Up/Down Binary Counter (Dual Clock with Clear)		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC194	4-bit PIPO shift register		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC20	Dual 4-Input NAND Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC21	Dual 4-Input AND Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC237	3-to-8-Line Decoder/Demultiplexer with Address Latch		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC240	Octal Bus Buffer with Inverted 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	54HC244	Octal Bus Buffer with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC245	Octal Bus Transceiver with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC251	1-to-8 data selector/multiplexer with 3-state output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC257	Quad 2-to-1-Line Data Selector/Multiplexer with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC259	8-bit addressable latch		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC27	Triple 3-Input NOR Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC273	Octal D-Type Edge-triggered Flip-Flop with Clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC280	9-bit odd/even parity generator/checker		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC283	4-Bit Binary Full Adders with Fast Carry		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC30	8-input NAND gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC32	Quad 2-Input OR Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC367	Hex bus buffer with 3-state output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC373	Octal D-Type Transparent Latches with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC374	Octal D-Type Edge-triggered Flip-Flop with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC393	Dual 4-bit negative edge-triggered binary counter		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4020	Asynchronous negative-edge-triggered 14-bit binary counter		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4040	Asynchronous Negative Edge-triggered 12-Bit Binary Counters		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4049	Hex Buffer Converter with Inverted Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4050	Hex Buffer Converter		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	54HC4051	Analogue multiplexer/demultiplexer		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4053	Analogue multiplexer/demultiplexer (triple 2-channel)		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4060	Asynchronous negative-edge-triggered 14-bit binary counter and oscillator		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4066	Quad bilateral switch		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4078	8-input OR/NOR gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4094	8-bit SIPO shift latch register with 3-state output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC4514	4-to-16 line decoder/latch		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC540	Octal Bus Buffer with Inverted 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC541	Octal bus buffer with 3-state output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC573	Octal D-type transparent latch with 3-state output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC574	Octal D-type edge-triggered flip-flop with 3-state output		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC590	8-Bit Binary Counter with 3-State Output Registers		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC595	8-Bit Shift Registers with 3-State Output Registers		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC597	8-Bit Piso Shift Register		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC688	8-bit identify comparator		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC74	Dual Negative Edge Triggered D-Type Flip-Flop with Clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HC85	4-Bit Magnitude Comparator		FP	• STMicroelectronics	ESCC QPL	
1	54HC86	Quad 2-Input Exclusive OR Gate		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HCT244	Octal Bus Buffer with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	54HCT245	Octal Bus Transceiver with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HCT373	Octal D-Type Transparent Latch with 3-State Outputs		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54HCT74	Dual D-Type Flip-Flop with Preset and Clear		FP, DIL	• STMicroelectronics	ESCC QPL	
1	54VCXH162244	Low Voltage CMOS 16-bit Bus Buffer with Bus hold, series Output Resistors and three-state Outputs Operating temperature range: -55 / +125 °C	SMD 5962-05210	FP-48	• STMicroelectronics	MIL QML	
1	54VCXH162373	Low Voltage CMOS 16-bit D-type Latch with Bus hold, series Output Resistors and three-state Outputs Operating temperature range: -55 / +125 °C	SMD 5962-05211	FP-48	• STMicroelectronics	MIL QML	
1	54VCXH162374	Low Voltage CMOS 16-bit D-type Flip-Flop with Bus hold, series Output Resistors and three-state Outputs	SMD 5962-05212	FP-48	• STMicroelectronics	MIL QML	
1	54VCXHR162245	Rad-Hard low voltage CMOS, 16-bit bus transceiver with bus hold, Series Output Resistors, and Three-State Outputs Supply voltage range from +1.8 V dc to +3.6 V dc Operating temperature range: -55 / +125 °C	SMD 5962-05213	FP-48	• STMicroelectronics	MIL QML	
1	AC16245	AC16245 is an advanced CMOS 16-bit bus transceiver with three-state outputs.	SMD 5962-04211	Flat 48	• STMicroelectronics	MIL QML	
1	AC164245	16-channel bidirectional multi-purpose transceiver	SMD 5962-98580	Flat 48	• STMicroelectronics	MIL QML	
1	AC164245	16-channel bidirectional multi-purpose transceiver	SMD 5962-98580	Flat 48	• STMicroelectronics	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	PE43652-62	PE43652 is a 6-bit RF Digital Step Attenuator (DSA) that provides an attenuation control range of 63dB with a resolution of 1dB (64 steps) and a frequency range from 10 kHz to 4 GHz.		32-lead Ceramic Quad Flat Pack	• Peregrine Semiconductor UK	Not qualified	
1	PE43652-62	PE43652 is a 6-bit RF Digital Step Attenuator (DSA) that provides an attenuation control range of 63dB with a resolution of 1dB (64 steps) and a frequency range from 10 kHz to 4 GHz.		32-lead Ceramic Quad Flat Pack	• Peregrine Semiconductor UK	Not qualified	
1	PE43652-62	PE43652 is a 6-bit RF Digital Step Attenuator (DSA) that provides an attenuation control range of 63dB with a resolution of 1dB (64 steps) and a frequency range from 10 kHz to 4 GHz.		32-lead Ceramic Quad Flat Pack	• Peregrine Semiconductor UK	Not qualified	
1	PE43652-62	PE43652 is a 6-bit RF Digital Step Attenuator (DSA) that provides an attenuation control range of 63dB with a resolution of 1dB (64 steps) and a frequency range from 10 kHz to 4 GHz.		32-lead Ceramic Quad Flat Pack	• Peregrine Semiconductor UK	Not qualified	
1	PE43751-62	PE43751 is a 7-bit RF DSA (Digital Step Attenuator) that provides an attenuation control range of 31.75dB with a resolution of 0.25dB (128 steps) and a frequency range from 10 KHz to 6 GHz.		32-lead Ceramic Quad Flat Pack	• Peregrine Semiconductor UK	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	BES	1µm Schottky diode process		N/A	• UMS	Others	It is the responsibility of the users to check that the process design can withstand the radiation requirements for its application
2	D01PH	0.13 µm 100 GHz ft 12V VBGD Pseudomorphic Power MMIC Process	Standard D01PH	DIE	• OMMIC	Others	D01PH Process is sensitive to Hydrogen poisoning. A Hydrogen getter is mandatory in case of hermetic encapsulation. SEE Radiation: D01PH tested in DC+RF up to 8dB of Gain Compression: No evidence of sensitivity to Heavy Ions.
2	EDO2AH	0.18 µm Mixed Analog/Digital 60 GHz Ft Pseudomorphic Low Noise MMIC Process	Standard ED02AH	DIE	• OMMIC	Others	EDO2AH Process is sensitive to Hydrogen poisoning. A Hydrogen getter is mandatory in case of hermetic encapsulation.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	GH50-10 transistor process	0.5 um GaN HEMT (AlGaN/GaN on SiC substrate) for Power amplifier up to C band.MAXIMUM RATING for AB class operation** Vds (at Ids = 50 mA/mm): 60V (50V recommended)** Vgs: -7V** Output power at PAEmax +1dB** Maximum VSWR under recommended ratings: 5:1 all phases (sustained operation should stay below a recommended VSWR of 3:1 to safeguard reliability)** Ig (under DC bias only) > -0.5mA/mm** Tj (under recommended conditions): 160CNotes:1- All conditions can be fulfilled simultaneously.2- The given values must not be exceeded at the same time even momentarily for any parameter, since each parameter is independent from each other, otherwise deterioration or destruction of the device may take place.3- Recommended operating output power is defined as the input power level to operate at maximum power added efficiency (PAE)4- Junction temperature is specified as the maximum peak junction temperature NOTE: As during reliability tests a maximum power bar size of 12mm was tested (CHK040 topology), the space evaluation domain is limited to 12mm of total periphery of power bars. For sizes higher than 12mm it is the responsibility of the users to perform relevant reliability tests.		-	• UMS	Others	
2	HB20M	Mixed digital/analog MMIC HBT process InGaP HBT (2 μm emitter width) Application in mixed digital/analog circuits up to Ku band		N/A	• UMS	Others	Single Events Effects have to be considered due to the digital elements
2	HB20P	HBT GaInP/GaAs Foundry Process, 0.7 um GateApplications in Power Amplifiers up to Ku Band		N/A	• UMS	Others	
2	HB20PX-10	HBT InGaP (2 µm emitter width) Applications in Power Amplifiers up to Ku Band Absolute Maximum Ratings (AMR) for HB20PX-10: - Base to Collector Voltage : Vbc = 11.0V - Collector to Emitter Voltage: Vce = 9.5V (VSWRmax = 2 and 4dBC of Compression, Jce = 33000A/cm² for single cell transistor in CW mode and Jce = 22000A/cm² for bi-cell transistor in pulsed mode) - RF Compression = 5 dB (under maximum operating conditions) - Max DC Collector Emitter Current Density: Jce = 40000A/cm² per emitter area (in pulsed mode for Bi-Cell Transistor) - Base to Emitter Voltage: Vbe = 2.5V		N/A	• UMS	Others	It is the responsibility of the users to check that the process design can withstand the radiation requirements for its application. Max ratings should be in conformance with the application

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	HB20S	Power HBT process Application in Power Transistors for L to C band Amplifiers		N/A	• UMS	Others	No radiation tests was performed on this process. Therefore it is the responsibility of the users to check that its design can withstand the radiation requirements for its application.
2	HP07-20	MMIC, GaAs Foundry Process, MESFET 0.7 um for power applications up to Ku Band. Replacement of HP07 Process by HP07-20 process due to a change in the gate lithography process.		N/A	• UMS	Others	DO NOT USE BEYOND Vgdmax/2 DUE TO SENSITIVITY TO HEAVY IONS.
2	MMICProcess PPH15X-10	0.15 µm GaAs Power P-HEMT process Absolute Maximum Ratings (AMR) for PPH15X-10: - Drain to Source Voltage: Vds = 8V at Ids = 150mA/mm - Maximum instantaneous RF Drain to Gate Voltage: Vdgmax = 14V at the maximum DC Operating point specified above (Vds = 8V and Ids = 150mA/mm) - RF Compression = 7dB for Power matched 8x75m cell at Ids = 150mA/mm and Vds = 7V - Gate to Source Voltage: Vgs = -2.5V		NA	• UMS	Others	SEE to be performed by end user, testing in DC only planed in the frame of other ESA research Programme, EPPL would be updated accordingly in 2012
2	PH15	MMIC GaAs Foumdry Process, 0.15 um Pseudomorphic High Electron Mobility Transistor (P-HEMT) for low noise, low level applications up to W Band		N/A	• UMS	Others	Passive elements are similar to PH25 Process. No radiation tests were performed on this process. Therefore it is the responsibility of the users to check that its design can withstand the radiation requirements for its application (especially for SEE).
2	PH25	MMIC GaAs Foumdry Process, 0.25 um Pseudomorphic High Electron Mobility Transistor (P-HEMT) for low noise, low level applications up to 100 GHz		N/A	• UMS	Others	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	PPH25X-10	0.25 µm Power P-HEMT processApplication in Power Amplifiers C to K bandAbsolute Maximum Ratings (AMR) for PPH25X-10:- Drain to Source Voltage: Vds = 9.5V (VSWR max of 2 and 3dBc)- Gate to Drain Voltage: Vgdmax = -11.5V- RF Compression = 7dB (Vds = 8.0V and VSWR of 3)- Gate to Source Voltage: Vgs = -3.0V yum		N/A	• UMS	Others	SEE Radiation: PPH25X-10 tested in DC+RF up to 8dB of Gain Compression: No evidence of sensitivity to Heavy Ions.TA20: Max ratings should be in conformance with the application

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	AT7910E	SpW-10X router: it includes 8 bi-directional SpaceWire serial ports and 2 bidirectional parallel external interfaces.	SMD 5962-09A03	MQFP196	• ATMEL France	MIL QML	
1	AT7911E	Triple SpaceWire links high speed controller	SMD 5962-08A01	MQFPL 196	• ATMEL France	MIL QML	
1	AT7912E	SpaceWire link high speed controller, also known as SMCS116SpW	SMD 5962-08A02	MQFPF100	• ATMEL France	MIL QML	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	E215	Contact Rating: 15 A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 12 and 28 Vdc Mounting Variants 03,04 and 06 Size (max mm.): 13.00 x 25.70 x 25.80. Operating Temperature Range (°C): -65 to +125		Half-cubic inch can	• REL STPI	ESCC QPL	
1	GP5	Contact Rating: 2A at 28 Vdc Contact Configuration: 2PDT Variants 01 to 08 Coil Voltage: 6, 12 and 26.5 Vdc Operating Temperature Range (°C): -65 to +125		Half crystal can	• LEACH INTERNATIONAL Europe	ESCC QPL	
1	M300	Contact Rating: 15A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 12 and 28Vdc Variants03, 04 and 06 Operating Temperature Range (°C): -65 to +125		Half-cubic inch can	• LEACH INTERNATIONAL Europe	ESCC QPL	
1	T	Contact Rating: 1A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 5.0 to 26.5V Variants 01 to 06 Operating Temperature Range (°C.): -65 to +125		TO-5	• REL STPI	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	D	Contact Rating: 1A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 6, 12 and 26.5 Vdc Mounting Variants 01 to 11 Size (max mm.): 13.00 x 10.40 x 6.10. Operating Temperature Range (°C): -65 to +125		1/6 Crystal CAN	• LEACH INTERNATIONAL Europe	ESCC QPL	
1	EL 415	Contact Rating: 15A at 28 Vdc Contact Configuration: 4PDT Coil Voltage: 12 and 28Vdc Mounting Variants 04, 06, 09, 14, 16 and 19 Operating Temperature Range (°C): -65 to +125		CAN	• REL STPI	ESCC QPL	
1	EL215	Contact Rating: 15A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 12 and 28Vdc Mounting Variants 03, 04, 06, 13, 14 and 16 Operating Temperature Range (°C): -65 to +125		Half-cubic inch can	• REL STPI	ESCC QPL	
1	GP2	Contact Rating: 2A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 6, 12 and 26.5 Vdc Mounting Variants 01to 08 Operating Temperature Range (°C): -65 to +125		Half-size crystal can	• LEACH INTERNATIONAL Europe	ESCC QPL	
1	GP250	Contact Rating: 2A at 50 Vdc (100000 ops) Contact Configuration: 2PDT Coil Voltage: 12, 12 26.5 Vdc Mounting Variants 01to 08 Operating Temperature Range (°C): -65 to +125		Half crystal can	• LEACH INTERNATIONAL Europe	ESCC QPL	
1	M302	Contact Rating: 15A at 28 Vdc Contact Configuration: 2PDT Coil Voltage: 12 and 28Vdc Mounting Variants 03, 04, 06, 13, 14 and 16 Operating Temperature Range (°C): -65 to +125		Half-cubic inch can	• LEACH INTERNATIONAL Europe	ESCC QPL	
1	M402	Contact Rating: 15A at 28 Vdc Contact Configuration: 4PDT Coil Voltage: 12 and 28Vdc Mounting Variants 04, 06, 09, 14, 16 and 19 Operating Temperature Range (°C): -65 to +125		CAN	• LEACH INTERNATIONAL Europe	ESCC QPL	
2	PHL50	Contact Rating: 50A at 50 Vdc Contact Configuration: 1PDT Coil Voltage : 48, 28, 12 Vdc Size (max mm): 47.8 x 34.6 x 26.2 Operating Temperature Range (°C): -65 to +125		AS PER SPEC.	• REL STPI	ESCC QPL	
1	TL	Contact Rating: 1A at 28 Vdc Contact Configuration: 2PDT Variants: 01 to 06 Coil Voltage: 5 to 26.5V Operating Temperature Range (°C.): -65 to +125		TO-5	• REL STPI	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	SMP/SMS/SMT	SMD tape and reel shunt resistorsVariant Res. range (mohm) Tolerance (%) Temp. coefficient (ppm/°C)01 5 - 1000 0.5 - 1.0 50 02 3 - 1000 0.5 - 1.0 5003 4 - 2000 0.5 - 1.0 50Dimensions max. (mm): 7.3 x 4.3 x 1.0Operating temperature range: -55 to +170 °C		SMD	• Isabellenhütte	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	MG680	High Voltage Range (Ohm): 600 - 20M Tol. (±%) : 0.5 TC (10E-6/±C): 140 Power Rating (W): 0.800 Max. Voltage (V): 2000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	GSFC S-311-P-683	Axial	• CADDOCK ELECTRONICS	Not qualified	
2	MG710	High Voltage Range (Ohm): 800 - 50M Tol. (± %) : 0.5 TC (10E-6/°C): 140 Power Rating (W): 1 Max. Voltage (V): 4000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	GSFC S-311-P-683	Axial	• CADDOCK ELECTRONICS	Not qualified	
2	MG716	High Voltage Range (Ohm): 600 - 75M Tol. (± %) : 0.5 TC (10E-6/°C): 140 Power Rating (W): 1.5 Max. Voltage (V): 4000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	GSFC S-311-P-683	Axial	• CADDOCK ELECTRONICS	Not qualified	
2	MG721	High Voltage Range (Ohm): 200 - 100M Tol. (± %) : 0.5 TC (10E-6/°C): 140 Power Rating (W): 2 Max. Voltage (V): 4000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	GSFC S-311-P-683	Axial	• CADDOCK ELECTRONICS	Not qualified	
1	MS1	Resistors, Fixed, Surface Mount Film, Non-Hermetically Sealed, Based on Type MS1 Range (ohm); Tol (%) TC (ppm/°c) value Series 43.2-1.004M 0.1, 0.5 25 50 E96 2.2-5.114M 1 50 E96 10-1.004M 1 25 E96 43.2-0.2213M 0.1 15 E96 10-0.5113M 0.5 15 E96 Critical R=160Kohm Oprating temperature range (°C): -55 to +125		MINI MELF	• VISHAY ELECTRONIC GmbH - DIVISION DRALORIC	ESCC QPL	
1	RNC90	Film Non-Hermetically Sealed Range (Ohm): 50 - 100K Tol. (± %) : 0.02, 1 TC (10E-6/°C): 5 Power Rating (W): 0.5@70C Max. Voltage (V): 300 Size (max mm): 7.5 x 8 x 2.5 Operating temperature range (°C): -55 to +175		AXIAL	• VISHAY S.A. div. SFERNICE	ESCC QPL	A last time buy date of 31-March-2014 has been announced by the manufacturer for 4001/011 resistors
1	RNC90	Film Non-Hermetically Sealed ResistorsRange (Ohm): 50 - 100KTolerance: 0.02 to 1%Variants: 03, 04, 07 and 08Temperature coefficient: 5, 10ppm/°CPower Rating (W): 0.5@70°CMax. Voltage (V): 300Size (max mm): 7.5 x 8 x 2.5Operating temperature range (°C): -55 to +175		AXIAL	• VISHAY S.A. div. SFERNICE	ESCC QPL	Last Time Buy announced: March-2014. RNC90 from VPG as possible replacement

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	TNPS	Resistors, Fixed, Surface Mount, Thin Film, Non-Hermetic, Based on Type TNPS Variant Style Range (ohm); Tol (%) TC (ppm/ºc) Critical R(ohm) 01 0603 10-221K 0.1 to 1 15, 25, 50 56.25 02 0805 10-422K 0.1 to 1 15, 25, 50 180 03 1206 10-1M 0.1 to 1 15, 25, 50 160 Serie E96 Oprating temperature range (ºC): -55 to +125		SMD	• VISHAY ELECTRONIC GmbH - DIVISION DRALORIC	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	CHP	Resistor, fixed, chip, thick film based on type CHP Case Size 0603, 0805, 1206, 2010, 2512 Variants: 01 to 10 Resistance range: 1-10M, tolerances: 1 to 5%; TC: 100 to 200ppm/°C		SMD	• VISHAY S.A. div. SFERNICE	ESCC QPL	
1	JAXA 2050/J401-****	Case Code (****) Nominal resistance range (Ohm) Maximum operating voltage (V) 1005 10 to 100K 50 1608 10 to 59K 75 2012 10 to 100K 100 3216 10 to 300K 150 3225 10 to 510K 200 Resistance tolerance : B: (±0.1%), D: (±0.5%), F: (±1.0%) Temperature characteristics (x 10E-6/Degree C) : A: (±5), Y: (±10), E: (±25), H (±50) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C		SMD	• SANADA KOA Corporation	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2050 , JAXA-QTS-2050 Appendix J - Detail specification : JAXA-QTS-2050/J401 - Application data sheet : JAXA-ADS-2050/J401 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2050/J401-****	Case Code (****) Nominal resistance range (Ohm) Maximum operating voltage (V) 1005 10 to 100K 50 1608 10 to 59K 75 2012 10 to 100K 100 3216 10 to 300K 150 3225 10 to 510K 200 Resistance tolerance : B: (±0.1%), D: (±0.5%), F: (±1.0%) Temperature characteristics (x 10E-6/Degree C) : A: (±5), Y: (±10), E: (±25), H (±50) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C		SMD	• SANADA KOA Corporation	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2050 , JAXA-QTS-2050 Appendix J - Detail specification : JAXA-QTS-2050/J401 - Application data sheet : JAXA-ADS-2050/J401 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2050/J401-****	Case Code (****) Nominal resistance range (Ohm) Maximum operating voltage (V) 1005 10 to 100K 50 1608 10 to 59K 75 2012 10 to 100K 100 3216 10 to 300K 150 3225 10 to 510K 200 Resistance tolerance : B: (±0.1%), D: (±0.5%), F: (±1.0%) Temperature characteristics (x 10E-6/Degree C) : A: (±5), Y: (±10), E: (±25), H (±50) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C		SMD	• SANADA KOA Corporation	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2050 , JAXA-QTS-2050 Appendix J - Detail specification : JAXA-QTS-2050/J401 - Application data sheet : JAXA-ADS-2050/J401 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2050/J401-****	Case Code Nominal resistance range Maximum operating voltage (****) (Ohm) (V) 1005 10 to 100K 50 1608 10 to 59K 75 2012 10 to 100K 100 3216 10 to 300K 150 3225 10 to 510K 200 Resistance tolerance : B: (±0.1%), D: (±0.5%), F: (±1.0%) Temperature characteristics (x 10E-6/Degree C) : A: (±5), Y: (±10), E: (±25), H (±50) Operating temperature range : -55 to +125 °C Rated ambient temperature : 85 °C		SMD	• SANADA KOA Corporation	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2050 , JAXA-QTS-2050 Appendix J - Detail specification : JAXA-QTS-2050/J401 - Application data sheet : JAXA-ADS-2050/J401 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.
1	P HR	Thin Film, 1206/0805/2010/0603 Series, High Precision and Stability Case Size Resistance Range (ohm) Tolerance Power Rating (mW) 0603(Var. 01-05) 10 to 200K 0.01 to 0.1% 100 0805(Var. 02-06) 10 to 250K 0.01 to 0.1% 125 1206(Var. 03-07) 10 to <1M 0.01 to 0.1% 250 2010(Var. 04-08) 10 to 3M 0.01 to 0.1% 500 TC (10E-6/°C): 5 to 25 Operating Temperature Range -55 to +125 °C		CHIP	• VISHAY S.A. div. SFERNICE	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	PFRR	Thin Film, 0603/0805/1206/2010 Series, High Precision and Stability with Establish Reliability Level R Case Size Resistance Range (ohm); Tolerance (%); Power Rating (mW) 0402(Var. 15): 100 to 100K; 0.05, 0.1; 50 0603(Var. 09): 100 to 261K; 0.05, 0.1; 100 0805(Var. 10): 100 to 301K; 0.05, 0.1; 125 1206(Var. 11): 100 to 1M; 0.05, 0.1; 250 2010(Var. 12): 100 to 3M01; 0.05, 0.1; 500 TC (10E-6/°C) : 10, 25 Operating Temperature Range -55 to +125°C		SMD	• VISHAY S.A. div. SFERNICE	ESCC QML	
1	PRA HR & CNW HR	Surface mounting, high precision thin film array2 to 8 resistors by Array. PRA HR (same ohmic value) CNW HR (diff. ohmic value)Range (Ohm): 100 - 1.0M; Tol. (± %): 0.05, 1Power Rating (mW): 100/resistor; Temp. Coeff. (±10E-6/°C): 10 Terminations : Nickel, hot-solder dip finishVariant(Type); Limit. Elem. Voltage (V); Size for Array with 8 resistors (max mm)01 to 07 & 22 to 28 (PRA100); 35 ; 1.8 x 8.4 x 0.58 08 to 14 & 29 to 35 (PRA135); 75 ; 2.05 x 11.2 x 0.5815 to 21 & 36 to 42 (PRA135); 3.2 ; 14.96 x 0.58Operating Temperature Range		SMD	• VISHAY S.A. div. SFERNICE	ESCC QML	
1	SMV/SMR	SMD metal foil chip resistorsVariant Res. range (ohm) Tolerance (%) Temp. coefficient (ppm/°C)01 (SMR-PW) 0.010 - 4.7 0.5 see Para. 1.4.2 of detail spec. 02 (SMV-PW) 0.0022 - 1.0 0.5 see Para. 1.4.2 of detail spec.Dimensions max. (mm): Variant 01 (2 terminals): 12.3 x 6.6 x 3.6Variant 02 (4 terminals): 12.3 x 6.6 x 3.6Operating temperature range: -55 to +140 °C		SMD	• Isabellenhütte	ESCC QPL	
2	VCS1625	Z-foil Wraparound Chip Resistors Temperature coefficient: 2 ppm/°C typical resistance range: 0.01 to 2 ohmTolerance: 0.5%, 1%Power rating: 1 W		CHIP	• VISHAY PRECISION GROUP	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Heater Minco	Resistor, Heater, Flexible, Single and double layer Variants 01, 02 and 03 Maximum ohmic density: 70 ohm/cm2 Tolerances: ±1 to 10% Resistance range: 1 to 5000 ohm Heating area: 0.26 to 1000 cm2 Terminal lead: 20 to 30 AWG Operating Temperature Range (°C.): -65 to +150 (variants 01&03) Operating Temperature Range (°C.): -65 to +200 (variant 02)		AS PER SPEC.	• MINCO - SA	ESCC QPL	
1	IRCA Heater	Resistor, Heater, Flexible, Single and double layer. Maximum ohmic density: 200 ohm/cm2 Tolerances: ±2, 3, 5, 10% Resistance range: 1 to 5000 ohm Heating area: 1.6 to 1300 cm2 Maximum heating side dimension: 60 cm Terminal lead: 20, 22, 24, 26, 28, 30 AWG Temperature range (10-6°C.): 175 Operating Temperature Range (°C.): -65 to +200.		AS PER SPEC.	• IRCA-DIVISION RICA	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	0805 PTC SMD, 150 ohms to 2K @ 25°C ohms available. 1% tolerance @ 25°C	0805 PTC thermistor, end banded for solder attachment. 150 ohms through 2,000 ohms @ 25°C available. 1% @ 25°C tolerance. Parts tested to this specification shall be considered acceptable for use in space programs specifying quality level (Grade) 1 parts.	GSFC S-311-P-827A	0805	• QUALITY THERMISTOR INC.	Others	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	0805 NTC SMD, 50,000 ohms @ 25°C, 1% tolerance	0805 NTC SMD, 50,000 ohms @ 25°C, 1% tolerance, surface mount, end-banded thermistor. Parts tested to this specification shall be considered acceptable for use in space programs specifying quality level (Grade) 1 parts.		0805	• QUALITY THERMISTOR INC.	Others	
1	4006013***	NTC, range 1000 to 100000 ohms @ +25 °C temperature range -55 / +115 °C nominal values and tolerances at +25 °C : Var. 01 : 1000 ohm 0.88 % Var. 02 : 2000 ohm 0.88 % Var. 03 : 3000 ohm 0.88 % Var. 04 : 4000 ohm 0.88 % Var. 05 : 5000 ohm 0.88 % Var. 06 : 10000 ohm 0.88 % Var. 07 : 100000 ohm 0.93 %		AS PER SPEC.	• MEAS Ireland (Betatherm) Ltd.	ESCC QPL	
1	4006014***	NTC, range 2000 to 100000 ohms @ +25 °C temperature range -40 / +160 °C nominal values and tolerances at +25 °C : Var. 08 : G15K4D489 15000 ohm 1.01 % Var. 09 : G10K4D453 10000 ohm 2.00 % Var. 12 : G100K6D487 100000 ohm 1.75 % Var. 13 : G15K4D589 15000 ohm 1.01 %		AS PER SPEC.	• MEAS Ireland (Betatherm) Ltd.	ESCC QPL	New Variants 12 and 13 included
2	44900 Series	Leaded, Epoxy Encapsulated, Negative Temperature Coefficient Pd (mW): 1 Tolerance (± %): 0.4 to 10 Range (Ohm @ 25°C): 2.2k, 3k, 5k, 10k, 30k Package (max mm): S Variant DIA 2.40, T Variant DIA 2.80 Various Wires Definitions (Type & AWG) Operating Temperature Range (°C): -55 to +90	QPL 23648,GSFC S-311-P-18	AS PER SPEC.	• MEASUREMENT SPECIALTIES Ltd (YSI TEMPERATURE)	MIL QPL	
2	44900 Series	Leaded, Epoxy Encapsulated, Negative Temperature Coefficient Pd (mW): 1 Tolerance (± %): 0.4 to 10 Range (Ohm @ 25°C): 2.2k, 3k, 5k, 10k, 30k Package (max mm): S Variant DIA 2.40, T Variant DIA 2.80 Various Wires Definitions (Type & AWG) Operating Temperature Range (°C): -55 to +90	QPL 23648,GSFC S-311-P-18	AS PER SPEC.	• MEASUREMENT SPECIALTIES Ltd (YSI TEMPERATURE)	MIL QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2160/A101-2012B***	Operating temperature range: -25 to+125°C Nominal zero-power resistance range: 2.186k to 1.388M Zero-power resistance tolerance: J (±5%) / K (±10%) Nominal B value range: 2160K to 4800K B value tolerance: G (±2%) / H (±3%) / J (±5%) Heat dissipation constant (in air): approx. 1.3mW/°C Thermal time constant (in air): approx. 2.5sec Allowable operating power: 5mW Rated power (25°C): 130mW Size: L2.00mm x W1.25mm x H0.55mm	JAXA-ADS-2160/A101A,JAXA-QTS-2160_A101B	SMD	• TATEYAMA KAGAKU INDUSTRY CO., LTD.	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2160, JAXA-QTS-2160 Appendix A - Detail specification : JAXA-QTS-2160/A101A - Application data sheet : JAXA-ADS-2160/A101A 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	N1043/301	Platinum probe sheath type thermal sensor Nominal resistance: 1000±2ohm (at 0°C) Source current: 5mA Max. Operating temperature range: -260 to +135°C	JAXA-QTS-2180_103	Probe Sheath	• Mitsubishi Heavy Industries, Ltd	JAXA QML	New component
1	N1043/501	Platinum surface type thermal sensor Type; Operating Temp. Range; Nominal resistance N1043/501-90-300; -260 to +400°C; 2000±4ohm (at 0°C) N1043/501-91-600; -196 to +400°C; 500±1ohm (at 0°C) Source current: 5mA Max. Operating temperature range: -260 to +135°C	JAXA-QTS-2180_105	SMD	• Mitsubishi Heavy Industries, Ltd	JAXA QML	New component

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	N1043/401	Platinum Extension Wire Sheath Type thermal sensor Type; Length; Measured Temp Range; Operatimg Temp Range; Nominal Resistance (@0°C) N1043/401-70-902-1; 43±1mm±; -18 to +930°C; -60 to +980°C; 100±0.5ohm N1043/401-70-902-2; 84±1mm; -18 to +930°C; -60 to +980°C; 100±0.5ohm N1043/401-70-902-3; 66±1mm; -18 to +930°C; -60 to +980°C; 100±0.5ohm N1043/401-71-702-1; 84±1mm; -80 to +430°C; -120 to +430°C; 500±2.5ohm Source current: 5mA Max.	JAXA-QTS-2180_104	N/A	• Mitsubishi Heavy Industries, Ltd	JAXA QML	New component

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2N2222A	Transistor, low power NPNVcbo=75V; Vceo=40VVariants: 01, 02, 04, 05, 11 and Operating Temperature Range (°C.): -65 to +200		TO-18, LCC3, LCC3+1	• STMicroelectronics	ESCC QPL	Variants qualified to 100 krad(Si)
1	2N2484	Transistor, low power NPN Vcbo=60V; Vceo=60V Variants: 01, 02, 04, 05, 06 and 07 Operating Temperature Range (°C.): -65 to +200		LCCC3	• STMicroelectronics	ESCC QPL	
1	2N3501L	hFE min/max: 100/300 @ IC = 150 mA PD (W): 1 BV CBO (V): 150 BV CEO (V): 150 IC (A): 0.3 Operating Temperature Range (°C.): -65 to +200	MIL-PRF-19500_366	TO205	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization
1	2N3700	Transistor, low power NPN BVcbo=140V; BVceo=80V Variants: 01, 02, 04, 05, 06 and 07 Operating Temperature Range (°C.): -65 to +200		TO-18, LCC3, LCC3+1	• STMicroelectronics	ESCC QPL	
1	2N5551	Transistor, low power NPN BVcbo=180V; BVceo=160V Variants: 01, 02, 04, 05, 08 and 09 Operating Temperature Range (°C.): -65 to +200		TO-18, LCC3, LCC3+1	• STMicroelectronics	ESCC QPL	
1	2N5666, 2N5667	hFE min/max: 40/120 @ IC = 1 A (2N5666) PD (W): 1.2 hFE min/max: 25/75 @ IC = 1 A (2N5667) PD (W): 1.2 BV CBO (V): 250 BV CEO (V): 200 IC (A): 5 (2N5666) BV CBO (V): 400 BV CEO (v): 300 IC (A): 5 (2N5667) Operating Temperature Range (°C.): -65 to +200		TO205	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2N2907	Transistor, low power PNP Vcbo=60V; Vceo=60V Variants: 01, 02, 04, 05, 06 and 07 Operating Temperature Range (°C.): -65 to +200		TO-18, LCC3, LCC3+1	• STMicroelectronics	ESCC QPL	
1	2N3637	hFE min/max: 100/300 @ IC = -50 mA pulsed PD (W): 1 BV CBO (V): -175 BV CEO (V): -175 IC (A): -1 Operating Temperature Range (°C.): -65 to +200	MIL-PRF-19500_357M	TO-205	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization
1	2N3867S, 2N3868S	hFE min/max: 40/120 @ IC = -1.5 A (2N3867S) PD (W): 1 hFE min/max: 30/150 @ IC = -1.5 A (2N3868S) PD (W): 1 BV CBO (V): -40 BV CEO (V): -40 IC (A): -3 (2N3867S) BV CBO (V): -60 BV CEO (v): -60 IC (A): -3 (2N3868S) Operating Temperature Range (°C.): -65 to +200	MIL-PRF-19500_350K	TO205	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization
1	2N5401	Transistor, low power PNP BVcbo=160V; BVceo=150V Variants: 01, 02, 04, 05, 06 and 07 Operating Temperature Range (°C.): -65 to +200		TO-18, LCC3, LCC3+1	• STMicroelectronics	ESCC QPL	
1	2N5415	hfe = 30/120 @ Ic=50mA Pdmax. = 0,75 W @Tamb. = +25°C. BV CBO = 200 V BV CEO = 200 V Ic = 1 A Operating Temperature Range (°C.): -65 to +200	MIL-PRF-19500_485M	TO39	• MICROSEMI LAWRENCE	MIL QML	Manufacturer Standardization

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2N5154	Transistor, high power NPNBVcbo=100V; BVceo=80VVariants: 04, 05, 06 and 07Operating Temperature Range (°C.): -65 to +200		TO-257, SMD .5	• STMicroelectronics	ESCC QPL	
1	BUX77	Transistor, highpower NPN BVcbo=10V; BVceo=80V Variants: 06 and 07 Operating Temperature Range (°C.): -65 to +200		TO-257	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2N5153	Transistor, high power PNP BVcbo=100V; BVceo=80V Variants: 04, 05, 06 and 07 Operating Temperature Range (°C.): -65 to +200		TO-257, SMD.5	• STMicroelectronics	ESCC QPL	
1	BUX78	Transistor, high power PNP BVcbo=100V; BVceo=80V Variants: 06 and 07 Operating Temperature Range (°C.): -65 to +200		TO-257	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	BUY10CS12J-01	MOSFET, N-Channel VGS=+-20V, V(BR)DS(min.)=100V ID=12.4A, Rds(on)=130mohm (VGS=10V & ID=8A) P_tot = 75W Rth(j-c) = 1.66°C/W Package: SMD0.5 Operating Temperature Range = 55 to +150°C		SMD0.5	• INFINEON TECHNOLOGIES A.G. Regensburg	ESCC QPL	
1	BUY25CS12J-01	MOSFET, N-Channel VGS=+-20V, V(BR)DS(min.)=250V ID=12.4A, Rds(on)=130mohm (VGS=10V & ID=8A) P_tot = 75W Rth(j-c) = 1.66°C/W Package: SMD0.5 Operating Temperature Range = 55 to +150°C		SMD0.5	• INFINEON TECHNOLOGIES A.G. Regensburg	ESCC QPL	
1	BUY25CS54A-01	MOSFET, N-ChannelVGS=+-20V, V(BR)DS(min.)=250VID=54A, Rds(on)=30mohm (VGS=10V & ID=34A)P_tot = 250WRth(j-c) = 0.5°C/WPackage: SMD2Operating Temperature Range = 55 to +150°C		SMD2	• INFINEON TECHNOLOGIES A.G. Regensburg	ESCC QPL	Special attention may need to be paid to the reliable mounting of this package type
1	JAXA R 2SK4048	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=100 V ID=42 A, Rds(on)=18 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4049	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=14 A, Rds(on)=155 mohm @ VGS=12 V Rth(ch-c)=2.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4050	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=100 V ID=15 A, Rds(on)=69 mohm @ VGS=12 V Rth(ch-c)=2.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4051	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=42 A, Rds(on)=33 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SK4052	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=33 A, Rds(on)=69 mohm @ VGS=12 V Rth(ch-c)=1.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4053	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=14 A, Rds(on)=155 mohm @ VGS=12 V Rth(ch-c)=2.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4054	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=250 V ID=42 A, Rds(on)=45 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4055	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=250 V ID=27 A, Rds(on)=98 mohm @ VGS=12 V Rth(ch-c)=1.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4056	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=250 V ID=12 A, Rds(on)=230 mohm @ VGS=12 V Rth(ch-c)=2.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4152	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=130 V ID=42 A, Rds(on)=17 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD2	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	
1	JAXA R 2SK4153	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=130 V ID=39 A, Rds(on)=39 mohm @ VGS=12 V Rth(ch-c)=0.83 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD1	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4154	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=130 V ID=15 A, Rds(on)=89 mohm @ VGS=12 V Rth(ch-c)=1.67 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD0.5	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SK4155	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=42 A, Rds(on)=16 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD2	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4156	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=32 A, Rds(on)=62 mohm @ VGS=12 V Rth(ch-c)=8.83 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD1	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4157	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=200 V ID=14 A, Rds(on)=148 mohm @ VGS=12 V Rth(ch-c)=1.67 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD0.5	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4158	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=250 V ID=42 A, Rds(on)=38 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD2	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4159	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=250 V ID=26 A, Rds(on)=91 mohm @ VGS=12 V Rth(ch-c)=0.83 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD1	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4160	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=250 V ID=12 A, Rds(on)=223 mohm @ VGS=12 V Rth(ch-c)=1.67 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD0.5	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4185	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=500 V ID=23 A, Rds(on)=0.18 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_103	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	
1	JAXA R 2SK4186	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=500 V ID=10 A, Rds(on)=0.48 mohm @ VGS=12 V Rth(ch-c)=1.0 °C/W Tch=150 °C	JAXA-QTS-2030_103	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SK4187	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=500 V ID=4.5 A, Rds(on)=1.15 mohm @ VGS=12 V Rth(ch-c)=2.0 °C/W Tch=150 °C	JAXA-QTS-2030_103	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4188	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=500 V ID=23 A, Rds(on)=0.18 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_103	SMD2	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4189	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=500 V ID=10 A, Rds(on)=0.48 mohm @ VGS=12 V Rth(ch-c)=0.83 °C/W Tch=150 °C	JAXA-QTS-2030_103	SMD1	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4190	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=500 V ID=4.5 A, Rds(on)=1.15 mohm @ VGS=12 V Rth(ch-c)=1.67 °C/W Tch=150 °C	JAXA-QTS-2030_103	SMD0.5	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4214	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=130 V ID=42 A, Rds(on)=24 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4215	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=130 V ID=35 A, Rds(on)=46 mohm @ VGS=12 V Rth(ch-c)=1.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4216	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=130 V ID=15 A, Rds(on)=96 mohm @ VGS=12 V Rth(ch-c)=2.0 °C/W Tch=150 °C	JAXA-QTS-2030_101	TO-254	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4217	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=100 V ID=42 A, Rds(on)=13 mohm @ VGS=12 V Rth(ch-c)=0.5 °C/W Tch=150 °C			• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SK4218	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=100 V ID=42 A, Rds(on)=28 mohm @ VGS=12 V Rth(ch-c)=0.83 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD1	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	JAXA R 2SK4219	MOSFET, N-channel VGS=+-20 V, V(BR)DS(min.)=100 V ID=15 A, Rds(on)=64 mohm @ VGS=12 V Rth(ch-c)=1.67 °C/W Tch=150 °C	JAXA-QTS-2030_102	SMD0.5	• Fuji Electric Device Technology Co., Ltd. Tokyo	JAXA QML	Export documents required
1	STRH100N10F SY3HRB	MOSFET, N-channel Vgs=+-20 V, V(br)ds(min.)=100 V Ids=48 A, Rds(on)=35 mohm @ Vgs=12V, Id=24A Variant 01 and 02		TO-254AA	• STMicroelectronics	ESCC QPL	
1	STRH100N6	MOSFET, N-channel Vgs=+-20 V, V(br)ds(min.)=60 V Ids=4A, Rds(on)=13.5mohm @ Vgs=12V, Id=40A Variants 01, 02		TO-254AA	• STMicroelectronics	ESCC QPL	TID tested capability of 70kRADs(Si)
1	STRH40N6	MOSFET, N-channel Vgs=+-20 V, V(br)ds(min.)=60 V Ids=30A, Rds(on)=45mohm @ Vgs=12V, Id=15A Variant 01		SMD.5	• STMicroelectronics	ESCC QPL	TID tested capability of 70kRADs(Si)
1	STRH8N10	MOSFET, N-channel Vgs=+-20 V, V(br)ds(min.)=100 V Ids=6 A, Rds(on)=300 mohm @ Vgs=12V, Id=4A Variant 01		SMD.5	• STMicroelectronics	ESCC QPL	TID tested capability of 70kRADs(Si)

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2N7389	VGS = ± 20V, Breakdown Voltage DS min. = -100 V, ID = -6.5 A max. thermal resistance = 5 °C/W, max. rds = 0.3 ohms @ Vgs = 12 V Operating Temperature Range (°C.): -55 to +150	MIL-PRF-19500_630	TO-205AF LCC	• INTERNATIONAL RECTIFIER	Others	
1	JAXA R 2SJ1A**	JAXA R 2SJ1A** is a planar type, P-channel enhancement MOSFET that consists of one chip and a seamless-welded hermetic seal package of metal CAN.Part type V DS I D I D(pulse) P D R DS(on) Package(**) (V) (A) (A) (W) Max(m Ohm) type01 - 100 -42 -168 250 45 TO-25402 -100 -25 -100 125 97 TO-25403 -100 -11 -44 62.5 226 TO-25404 -100 -42 -168 250 38 SMD-205 -100 -29 -116 150 90 SMD-106 -100 -13 -52 70 219 SMD-0.507 -200 -35 -140 250 91 TO-25408 -200 -16 -64 125 210 TO-25409 -200 -7.5 -30 62.5 487 TO-25410 -200 -37 -148 250 84 SMD-211 -200 -18 -72 150 203 SMD-112 -200 -8.5 -34 70 480 SMD-0.5V GS= ±20 V , Ta=25 degree C , Tch=150 degree C	JAXA-QTS-2030_104	TO-254, SMD-0.5, SMD-1, SMD-2	• FUJI ELECTRIC CO. LTD Matsumoto	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/)- General specification : JAXA-QTS-2030D- Detail specification : JAXA-QTS-2030/104- Application data sheet : JAXA-ADS-2030/1042) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use. Special attention may need to be paid to the reliable mounting of SMD1 and SMD2 package types.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SJ1A**	JAXA R 2SJ1A** is a planar type, P-channel enhancement MOSFET that consists of one chip and a seamless-welded hermetic seal package of metal CAN.Part type V DS I D I D(pulse) P D R DS(on) Package(**) (V) (A) (A) (W) Max(m Ohm) type01 -100 -42 -168 250 45 TO-25402 -100 -25 -100 125 97 TO-25403 -100 -11 -44 62.5 226 TO-25404 -100 -42 -168 250 38 SMD-205 -100 -29 -116 150 90 SMD-106 -100 -13 -52 70 219 SMD-0.507 -200 -35 -140 250 91 TO-25408 -200 -16 -64 125 210 TO-25409 -200 -7.5 -30 62.5 487 TO-25410 -200 -37 -148 250 84 SMD-211 -200 -18 -72 150 203 SMD-112 -200 -8.5 -34 70 480 SMD-0.5V GS= ±20 V , Ta=25 degree C , Tch=150 degree C	JAXA-QTS-2030_104	TO-254, SMD-0.5, SMD-1, SMD-2	• FUJI ELECTRIC CO. LTD Matsumoto	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/)- General specification : JAXA-QTS-2030D- Detail specification : JAXA-QTS-2030/104- Application data sheet : JAXA-ADS-2030/1042) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use. Special attention may need to be paid to the reliable mounting of SMD1 and SMD2 package types.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SJ1A**	JAXA R 2SJ1A** is a planar type, P-channel enhancement MOSFET that consists of one chip and a seamless-welded hermetic seal package of metal CAN.Part type V DS I D I D(pulse) P D R DS(on) Package(**) (V) (A) (A) (W) Max(m Ohm) type01 -100 -42 -168 250 45 TO-25402 -100 -25 -100 125 97 TO-25403 -100 -11 -44 62.5 226 TO-25404 -100 -42 -168 250 38 SMD-205 -100 -29 -116 150 90 SMD-106 -100 -13 -52 70 219 SMD-0.507 -200 -35 -140 250 91 TO-25408 -200 -16 -64 125 210 TO-25409 -200 -7.5 -30 62.5 487 TO-25410 -200 -37 -148 250 84 SMD-211 -200 -18 -72 150 203 SMD-112 -200 -8.5 -34 70 480 SMD-0.5V GS= ±20 V , Ta=25 degree C , Tch=150 degree C	JAXA-QTS-2030_104	TO-254, SMD-0.5, SMD-1, SMD-2	• FUJI ELECTRIC CO. LTD Matsumoto	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/)- General specification : JAXA-QTS-2030D- Detail specification : JAXA-QTS-2030/104- Application data sheet : JAXA-ADS-2030/1042) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use. Special attention may need to be paid to the reliable mounting of SMD1 and SMD2 package types.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA R 2SJ1A**	JAXA R 2SJ1A** is a planar type, P-channel enhancement MOSFET that consists of one chip and a seamless-welded hermetic seal package of metal CAN.Part type V DS I D I D(pulse) P D R DS(on) Package(**) (V) (A) (A) (W) Max(m Ohm) type01 - 100 -42 -168 250 45 TO-25402 -100 -25 -100 125 97 TO-25403 -100 -11 -44 62.5 226 TO-25404 -100 -42 -168 250 38 SMD-205 -100 -29 -116 150 90 SMD-106 -100 -13 -52 70 219 SMD-0.507 -200 -35 -140 250 91 TO-25408 -200 -16 -64 125 210 TO-25409 -200 -7.5 -30 62.5 487 TO-25410 -200 -37 -148 250 84 SMD-211 -200 -18 -72 150 203 SMD-112 -200 -8.5 -34 70 480 SMD-0.5V GS= ±20 V , Ta=25 degree C , Tch=150 degree C	JAXA-QTS-2030_104	TO-254, SMD-0.5, SMD-1, SMD-2	• FUJI ELECTRIC CO. LTD Matsumoto	JAXA QML	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/)- General specification : JAXA-QTS-2030D- Detail specification : JAXA-QTS-2030/104- Application data sheet : JAXA-ADS-2030/1042) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use. Special attention may need to be paid to the reliable mounting of SMD1 and SMD2 package types.
1	STRH40P10	P-Channel 100V (Technology EHD-2b, double gate oxide structure 470 angstrom)VGS= + - 20V, V(BR) DS (min) = -100VIDS= -34A, Rds(on)= 75 mohm @ VGS=-12VRth(j-s)= 0.71°C/WTj= 150°C		TO-254AA	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	2N2920A	hFE min/max: 150/600 @ IC = 10 uA PD (mW): 500 (both section) BV CBO (V): 60 BV CEO (V): 60 IC (mA): 30 Variants: 03, 06, 12, 15 Operating Temperature Range (°C.): -65 to +200		TO-77LCC6	• STMicroelectronics	ESCC QPL	
1	2N3810	hFE min/max: 150/450 @ IC = -1 mA PD (mW): 600 (both section) BV CBO (V): -60 BV CEO (V): -60 IC (mA): 50 Variants: 01,02, 07, 09 Operating Temperature Range (°C.): -65 to +200		TO-78, LCC6	• STMicroelectronics	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	BFY180	BV CBO (V): 15 BV CEO (V): 8 Ic (mA): 4.0 hFE min/max: 30/175 @ IC max = 0.25 mA Pout (mW): 30 Nf max: 3.2 dB @ 2 GHz MAG/MSG min: 12 dB @ 2 GHz fT min: 7.0 GHz Variant 01 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY181	BV CBO (V): 20 BV CEO (V): 12 Ic (mA): 20 hFE min/max: 55/175 @ IC max = 5.0 mA Pout (mW): 175 Nf max: 2,9 dB @ 2 GHz MAG/MSG min: 13.5 dB @ 2 GHz fT min: 7.0 GHz Variant 03 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY182	BV CBO (V): 20 BV CEO (V): 12 Ic (mA): 35 hFE min/max: 55/170 @ IC max = 30 mA Pout (mW): 250 Nf max: 2,9 dB @ 2 GHz MAG/MSG min: 13.5 dB @ 2 GHz fT min: 6.5 GHz Variant 04 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY183	BV CBO (V): 20 BV CEO (V): 12 Ic (mA): 65 hFE min/max: 55/160 @ IC max = 5.0 mA Pout (mW): 450 Nf max: 2,9 dB @ 2 GHz MAG/MSG min: 12.5 dB @ 2 GHz fT min: 7.0 GHz Variant 05 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY193	BV CBO (V): 20 BV CEO (V): 12 Ic (mA): 80 hFE min/max: 50/175 @ IC max = 30 mA Pout (mW): 580 Nf max: 2,9 dB @ 2 GHz MAG/MSG min: 12.5 dB @ 2 GHz fT min: 7.0 GHz Variant 06 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY193C	BV CBO (V): 20 BV CEO (V): 12 Ic (mA): 80 hFE min/max: 50/175 @ IC max = 30 mA Pout (mW): 580 Nf max: 2,9 dB @ 2 GHz MAG/MSG min: 12.5 dB @ 2 GHz fT min: 6.5 GHz Variant 08 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY196	BV CBO (V): 20 BV CEO (V): 12 Ic (mA): 100 hFE min/max: 50/175 @ IC max = 0.25mA Pout (mW): 700 Nf max: 3.5 dB @ 2 GHz MAG/MSG min: 10 dB @ 2 GHz fT min: 6 GHz Variant 07 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	BFY280	BV CBO (V): 8 BV CEO (V): 15 Ic (mA): 10 hFE min/max: 30/175 @ IC max = 0.25 mA Pout (mW): 80 Nf max: 2.9 dB @ 2 GHz MAG/MSG min: 13 dB @ 2 GHz fT min: 7.0 GHz Variant 02 of ESCC spec. Operating Temperature Range (°C.): -65 to +200		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY405	BV CBO (V): 15 BV CEO (V): 4.5 Ic (mA): 12 hFE min/max: 50/150 @ IC max = 2.0 mA Pout (mW): 55 Nf max: 1.8 dB @ 1.8 GHz Ic (mA): 2.0 fT min: 20 GHz Variant 01 of ESCC spec. Operating Temperature Range (°C.): -65 to +175		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY420	BV CBO (V): 15 BV CEO (V): 4.5 Ic (mA): 35 hFE min/max: 50/150 @ IC max = 20 mA Pout (mW): 160 Nf max: 1.7 dB @ 1.8 GHz Ic (mA): 5.0 fT min: 20 GHz Variant 02 of ESCC spec. Operating Temperature Range (°C.): -65 to +175		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY450	BV CBO (V): 15 BV CEO (V): 4.5 Ic (mA): 100 hFE min/max: 50/150 @ IC max = 20 mA Pout (mW): 450 Nf max: 2.0 dB @ 1.8 GHz Ic (mA): 10 fT min: 18 GHz Variant 03 of ESCC spec. Operating Temperature Range (°C.): -65 to +175		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY640	Variants 01, 02 03 BV CBO (V): 13 BV CEO (V): 4(tamb>0°C) Ic (mA): 50 hFE1 min/max: 135/250 @ IC max = 30 mA hFE2 min/max: 150/300 @ IC max = 20uA Pout (mW): 200 Operating Temperature Range (°C.): -65 to +175		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	
1	BFY640B, BFY650B	Variants 01, 02, 03, 04 BV CBO (V): 13 BV CEO (V): 4(tamb>0°C) Ic (mA): 50 (var 01-03), 150 (var 04) hFE min/max: 135/250 @ IC max = 30 mA Pout (mW): 200 (var 01-03) hFE min/max: 100/250 @ IC max = 80 mA Pout (mW): 600 (var 04) Nf max: see spec @ 1.8 GHz Ic (mA): 5 Operating Temperature Range (°C.): -65 to +175		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	BFY740B	BV CBO (V): 13 BV CEO (V): 4 (tamb>0°C) Ic (mA): 30 hFE min/max: 185/380 @ IC max = 20 mA Pout (mW): 120 Nf max: 0.75 dB @ 1.8 GHz Ic (mA): 8 Operating Temperature Range (°C.): -65 to +175		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	CFY 67 CFY 67_08	Pseudomorphic HEMT Vds (V): 3.5 Vdg (V): 4.5 Id (mA): 60 NF <= 0.8 dB Ga >= 11 dB @ 12 GHz (Variant 01 and 03) NF <= 1.0 dB Ga >= 10.5 dB @ 12 GHz (Variant 02 and 04) Ptot (mW): 200 Operating Temperature Range (°C.): -65 to +150		MICRO X	• INFINEON TECHNOLOGIES A.G. Neubiberg	ESCC QPL	Recommended for applications in X and Ku bands

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	1871	Low Frequency, Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Kapton, Light weight Variants 24 to 47 Wire size AWG 26 to 12, shielded and jacketed wires only, up to 3 cores Operating Temperature Range (°C): -100 to +200C		N/A	• NEXANS	ESCC QPL	
1	1872	Low Frequency, Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Kapton, medium weight Variants 31 to 73 Wire size AWG 28 to 18 Operating Temperature Range (°C): -100 to +200C		N/A	• NEXANS	ESCC QPL	
1	3901001**B	Low Frequency, Polyimide Insulation Variants 24 to 47 Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Kapton, Light weight Wire size AWG 26 to 12, shielded and jacketed wires only, up to 3 cores Operating Temperature Range (°C): -100 to +200C		N/A	• AXON'CABLE	ESCC QPL	
1	3901002**B	Low Frequency, Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Kapton, medium weight Variants 31 to 73 Wire size AWG 28 to 18 Operating Temperature Range (°C): -100 to +200C		N/A	• AXON'CABLE	ESCC QPL	
1	3901012**B	Low Frequency, 600V, Silver-plated Copper, Extruded Crosslinked Fluoropolymer Insulation. Voltage Rating (max Vrms): 600 Variants 02 to 10, 12 to 20, 22 to 30, 32 to 40, 42 to 50, 52 to 60, 62 to 70, 72 to 80 Wire size ISO 001, 002, 004, 006, 010, 012, 020, 030, shielded and unshielded , up to 4 cores Operating Temperature Range (°C): -100 to +200		N/A	• AXON'CABLE	ESCC QPL	
1	3901013**B	Low Frequency, PTFE/Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Extruded PTFE for flexibility Variants 01 to 77 Wire size AWG 30 to 18, shielded and unshielded, up to 5 cores Operating Temperature Range (°C): -100 to +200		N/A	• AXON'CABLE	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	3901018	Low Frequency, Polyimide/Fluorthermoplast. Voltage Rating, maximum (Vrms): 600 Wire size AWG 32 to 12, shielded and unshielded, up to 7 cores Variants 01 to 88 Operating Temperature Range (°C): -200 to +200		N/A	• LEONI SPECIAL CABLES GmbH	ESCC QPL	Conductor silver thickness shall be 2.0?m minimum
1	3901019	Low Frequency, Polyimide Insulation. Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Expanded PTFE All variants with the exceptions 01, 09, 17, 24, 25, 32, 48, 56, 64, 72, and 79 Wire size AWG 28 to 12, shielded and unshielded, up to 7 cores Operating Temperature Range (°C): -200 to +200		N/A	• LEONI SPECIAL CABLES GmbH	ESCC QPL	
1	3901019**B	Low Frequency, Polyimide Insulation. Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Expanded PTFE Variants 01 to 94 except those using AWG 30 Wire size AWG 28 to 12, shielded and unshielded, up to 7 cores Operating Temperature Range (°C): -200 to +200		N/A	• AXON'CABLE	ESCC QPL	
1	3901020	Extruded Cross-Linked Modified ETFE Insulated Wires & Cables on Silver-Plated Copper Conductors Lightweight Braided Low Frequency Variants 01 to 80 Operating Temperature Range (ºC): -100 to +200		N/A	• TYCO ELECTRONICS UK Ltd.	ESCC QPL	
1	3901021	Low Frequency, Polyimide insulted shielded cables with drain wire Voltage Rating, maximum (Vrms): 600 Wire size AWG 30 to 12, shielded and unshielded, up to 7 cores Variants 01 to 41 Operating Temperature Range (°C): -200 to +200		N/A	• LEONI SPECIAL CABLES GmbH	ESCC QPL	
1	3901021**B	Low Frequency, Polyimide insulted shielded cables with drain wire Voltage Rating, maximum (Vrms): 600 Wire size AWG 30 to 12, shielded and unshielded, up to 7 cores Variants 01 to 41 Operating Temperature Range (°C): -200 to +200		N/A	• AXON'CABLE	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	3901022	Extruded Cross-Linked Modified ETFE Insulated Wires and Cables on Silver-Plated Copper Conductor Lightweight Spiral Shielded Low Frequency Variants 01 to 72 Operating Temperature Range (ºC): -100 to +200		N/A	• TYCO ELECTRONICS UK Ltd.	ESCC QPL	
1	CSWL	Wires and Cables, Fluoropolymer Insulated, Low Frequency Variants: 01 to 64, except those based on AWG30 Wire size AWG 28 to 12, with and without jackets and shields, up to 4 cores Voltage Rating (max Vrms): 600 Operating Temperature Range (ºC): - 200 to +200		N/A	• AXON'CABLE	ESCC QPL	
1	CSWL	Wires and Cables, Fluoropolymer Insulated, Low Frequency Variants: 01 to 64 Wire size AWG 30 to 12, with and without jackets and shields, up to 4 cores Voltage Rating (max Vrms): 600 Operating Temperature Range (ºC): - 200 to +200		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	
1	FA 3901-1	Low Frequency, Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Kapton, Light weight All variants except those based on AWG 12-14 Wire size AWG 26 to 16, shielded and jacketed wires only, up to 3 cores Operating Temperature Range (°C): -100 to +200C		N/A	• DRAKA - FILECA	ESCC QPL	
1	FA 3901-2	Low Frequency, Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Kapton, medium weight Variants 31 to 73 and 74 to 91 Wire size AWG 28 to 18 Operating Temperature Range (°C): -100 to +200C		N/A	• DRAKA - FILECA	ESCC QPL	
1	MTV-BTV	Low Frequency, PTFE/Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Extruded PTFE for flexibility Variants 01 to 77 Wire size AWG 30 to 18, shielded and unshielded, up to 5 cores Operating Temperature Range (°C): -100 to +200		N/A	• NEXANS	ESCC QPL	
1	Series 55/995X	Low Frequency, 600V, Silver-plated Copper, Extruded Crosslinked Fluoropolymer Insulation. Voltage Rating (max Vrms): 600 Variants 01 to 80 Wire size ISO 001, 002, 004, 006, 010, 012, 020, 030, shielded and unshielded , up to 4 cores Operating Temperature Range (°C): -100 to +200		N/A	• TYCO ELECTRONICS UK Ltd.	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	SPC2110	Low Frequency, Polyimide Insulation Voltage Rating, maximum (Vrms): 600 Insulation Type: Extruded PTFE for flexibility Variants 01 to 66 Wire size AWG 28 to 12, shielded and unshielded, up to 7 cores Operating Temperature Range (°C): -200 to +200		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	
1	SPL	Low Frequency, Polyimide Insulation. Voltage Rating, maximum (Vrms): 600 Insulation Type: Polyimide/Expanded PTFE Variants 01 to 94 Wire size AWG 28 to 12, shielded and unshielded, up to 7 cores Operating Temperature Range (°C): -200 to +200		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	
1	SPLD	Low Frequency, Polyimide insulted shielded cables with drain wire Voltage Rating, maximum (Vrms): 600 Wire size AWG 30 to 12, shielded and unshielded, up to 7 cores Variants 01 to 41 Operating Temperature Range (°C): -200 to +200		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	
1	SPM	Low Frequency, Polyimide/Fluorthermoplast. Voltage Rating, maximum (Vrms): 600 Wire size AWG 32 to 12, shielded and unshielded, up to 7 cores Variants 01 to 88 except those based on AWG 30-32 Operating Temperature Range (°C): -200 to +200		N/A	• AXON'CABLE	ESCC QPL	
1	SPM	Low Frequency, Polyimide/Fluorthermoplast. Voltage Rating, maximum (Vrms): 600 Wire size AWG 32 to 12, shielded and unshielded, up to 7 cores Variants 01 to 88 Operating Temperature Range (°C): -200 to +200C		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	
1	SPP	Power Wires for Crimping, Low Frequency Voltage Rating, maximum (Vrms): 600 Insulation Type: Expanded PTFE Tape Wire size AWG 4 and 8 Operating Temperature Range (°C): -200 to +200C		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	3902002	Flexible, Coaxial, Triaxial and Symmetric Cables, -200 to +180ºC Variants 03 to 06 (Coaxial), 10 to 12 (Triaxial) and 20, 21, 23 to 30 (shielded line) Operating Voltage (Continuous) maximum ratings, (Vrms): Variants 03 180 Variants 04,10,21,23,24,26 to 30 200 Variants 06,25 250 Variants 05,11 to 12, 20 300 AWG Range: 20, 22, 24, 26, 28, 30 dependent on variant Temperature range (°C): -200 to +180		N/A	• AXON'CABLE	ESCC QPL	
1	50CIS	Coaxial, double shield coaxial, shielded and jacketed coaxial. Miniature, 50 Ohms, PTFE Dielectric, Polyimide Jacket Variants 01, 02, 03 Maximum Voltage: 900 Vrms Operating Temperature Range (°C): -100 to + 200 (variant 01) Operating Temperature Range (°C): -80 to + 200 (variant 02, 03)		N/A	• NEXANS	ESCC QPL	
1	GCX, GTX, GSC, GBL	Flexible, Coaxial, Triaxial and Symmetric Cables, -200 to +180ºC Variants 03 to 06 (Coaxial), 10 to 13 (Triaxial) and 20 to 30 (shielded line) Operating Voltage (Continuous), maximum ratings, (Vrms): Variants 03 180 Variants 04,10,21,22,23,24,26 to 30 200 Variants 06,25 250 Variants 05,11 to 13,20 300 AWG Range: 20, 22, 24, 26, 28, 30 dependent on variant Temperature range (°C): -200 to +180		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	Max AWG 28

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2120/D101-** (1 pair)	Conductor size : AWG20, AWG22, AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG20 – AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG20 – AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.22dB/m max.(AWG20), 0.24dB/m max.(AWG22), 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120/D101 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2120/D101-** (1 pair)	Conductor size : AWG20, AWG22, AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG20 – AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG20 – AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.22dB/m max.(AWG20), 0.24dB/m max.(AWG22), 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120/D101 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2120/D101-** (1 pair)	Conductor size : AWG20, AWG22, AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG20 – AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG20 – AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.22dB/m max.(AWG20), 0.24dB/m max.(AWG22), 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120/D101 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA 2120/D101-** (1 pair)	Conductor size : AWG20, AWG22, AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG20 – AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG20 – AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.22dB/m max.(AWG20), 0.24dB/m max.(AWG22), 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120/D101 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA2120/D102-** (4 pairs)	Conductor size : AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Propagation delay time difference(between pairs) : 0.13nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG24, AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG24,AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120 /D102 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA2120/D102-** (4 pairs)	Conductor size : AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Propagation delay time difference(between pairs) : 0.13nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG24, AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG24,AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120 /D102 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA2120/D102-** (4 pairs)	Conductor size : AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Propagation delay time difference(between pairs) : 0.13nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG24, AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG24,AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120 /D102 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA2120/D102-** (4 pairs)	Conductor size : AWG24, AWG26 and AWG28 Operating temperature range(degree C) : -200 to +180 Characteristic impedance(Ohm) : 100+-6 Maximum continuous operating voltage(Vrms) : 200 Propagation delay time : 4.3nsec/m as a maximum Propagation delay time difference(within a pair) : 0.08nsec/m as a maximum Propagation delay time difference(between pairs) : 0.13nsec/m as a maximum Radiation hardness : 10kGy Capacitance(Cond/Cond) : 45pF/m max.(AWG24, AWG26), 50 pF/m max.(AWG28) Capacitance(Cond/Shield) : 79pF/m max.(AWG24,AWG26), 90 pF/m max.(AWG28) RF transmission loss (100MHz) : 0.26dB/m max.(AWG24), 0.37dB/m max.(AWG26), 0.43dB/m max.(AWG28)			• Junkosha Inc.	JAXA QPL	1) The following documents are available at JAXA Qualified EEE parts database. (https://eeepitnl.tksc.jaxa.jp/en/) - General specification : JAXA-QTS-2120 , JAXA-QTS-2120 Appendix D - Detail specification : JAXA-QTS-2120 /D102 - Application data sheet : JAXA-ADS-2120/D101-102 2) As to Export License, Manufacturer will apply to METI (Ministry of Economy, Trade and Industry) for license in accordance with “Foreign Exchange and Foreign Trade Act (Law)” with information such as End User/End Use.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	3902003	Cable, Spacewire, Round, quad using Symmetric Cables, Flexible Variant 01 AWG 28/07 (white) and variant 02 AWG 26/07 (blue) Variant; Date Rate; Operating Voltage (Vrms); Current (A) 01 100Mb/s-400MHz 200V 1.5A 02 200Mb/s-400MHz 200V 2.5A Operating Temeprature Range (ºC): -200 to +180		N/A	• AXON'CABLE	ESCC QPL	
1	3902003	Cable, Spacewire, Round, quad using Symmetric Cables, Flexible Variant 01 AWG 28/07 (white) and variant 02 AWG 26/07 (blue) Variant; Date Rate; Operating Voltage (Vrms); Current (A) 01 100Mb/s-400MHz 200V 1.5A 02 200Mb/s-400MHz 200V 2.5A Operating Temperature Range (ºC): -200 to +180		N/A	• W.L.GORE & Associates GmbH	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	14xxxxxx	Power transformer based on EFD, RM or toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	THM, SMT (Flying leads optional)	• Flux A/S	Others	Qualification samples: Q7, Q9, Q10
2	14xxxxxx	Power transformer based on EFD, RM or toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	THM, SMT (Flying leads optional)	• Flux A/S	Others	Qualification samples: Q7, Q9, Q10
2	14xxxxxx	Power transformer based on EFD, RM or toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	THM, SMT (Flying leads optional)	• Flux A/S	Others	Qualification samples: Q7, Q9, Q10
2	14xxxxxx	Power transformer based on EFD, RM or toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	THM, SMT (Flying leads optional)	• Flux A/S	Others	Qualification samples: Q7, Q9, Q10
2	14xxxxxx	Power transformer based on EFD, RM or toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	THM, SMT (Flying leads optional)	• Flux A/S	Others	Qualification samples: Q7, Q9, Q10
2	14xxxxxx	Power transformer based on EFD, RM or toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	THM, SMT (Flying leads optional)	• Flux A/S	Others	Qualification samples: Q7, Q9, Q10
2	19xxxxxx	Power transformer assembly based on RM and toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Power transformer assembly based on RM and toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Power transformer assembly based on RM and toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	19xxxxxx	Power transformer assembly based on RM and toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Power transformer assembly based on RM and toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24
2	19xxxxxx	Power transformer assembly based on RM and toroidal cores.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-	FT08690020	SMT (THM optional)	• Flux A/S	Others	Qualification sample: Q24

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	14xxxxxx	Double aperture RF transformer.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM & SMT optional)	• Flux A/S	Others	Qualification sample: Q12
2	14xxxxxx	Double aperture RF transformer.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM & SMT optional)	• Flux A/S	Others	Qualification sample: Q12
2	14xxxxxx	Double aperture RF transformer.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM & SMT optional)	• Flux A/S	Others	Qualification sample: Q12
2	14xxxxxx	Double aperture RF transformer.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM & SMT optional)	• Flux A/S	Others	Qualification sample: Q12
2	14xxxxxx	Double aperture RF transformer.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM & SMT optional)	• Flux A/S	Others	Qualification sample: Q12
2	14xxxxxx	Double aperture RF transformer.Temperature range: -55ºC to +120ºCDielectric Withstanding Voltage 500V rms (unless agreed otherwise)Qualified in accordance with MIL-STD-981Mechanical Shock: 1000G	FT08690020	Flying leads (THM & SMT optional)	• Flux A/S	Others	Qualification sample: Q12

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	DBIT	DBIT Transformers 1553, moulded Min. Impedance: 3Kohm Max Leakage Inductance: 6uH Size max (mm): 16 X 16 X H DBIT-X-7P10. H(max): 17mm. Through Hole DBIT-X-3S. H(max): 3,81mm. SMD DBIT-X-5S. H(max): 5mm. SMD DBIT-X-7S. H(max): 7mm. SMD DBIT-X-7P. H(max): 11mm. Through Hole Operating temperature range (°C.): -55 to +125	MSP-003	AS PER SPEC.	• MICROSPIRE	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	T3	Microswitches, Sensitive, 1PDT Contact Rating: 4A, 28 Vdc, Contact Configuration SPDT Operating Temperature Range (°C): -55 to + 125		AS PER SPEC.	• ABB ENTRELEC	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	TH47	Switches, thermostatic, bimetallic, SPST, opening contact based on type TH47Contact Configuration SPST, Contact Rating: 4A, 30 Vdc Variant 01 to 03Range of components: Grade and Grade YRated Current (IR): 4 A (30 Vdc resistive)Operating Temperature Range (°C): -50 to + 150		AS PER SPEC.	• COMEPA	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	Coaxial ISOLATOR/CIRCULATOR T10 family	Low power coaxial isolators and circulators X to Ka band (7.9 GHz - 21.5 GHz) in T10 package developed and manufactured by Cobham Microwave - detail specification 60102965-069- PID 60102960-085	60102965-069	T10 / SMA connectors	• Cobham Microwave (Chelton Group)	Not qualified	
2	Coaxial ISOLATOR/CIRCULATOR T10 family	Low power coaxial isolators and circulators X to Ka band (7.9 GHz - 21.5 GHz) in T10 package developed and manufactured by Cobham Microwave - detail specification 60102965-069- PID 60102960-085	60102965-069	T10 / SMA connectors	• Cobham Microwave (Chelton Group)	Not qualified	
2	Coaxial ISOLATOR/CIRCULATOR T10 family	Low power coaxial isolators and circulators X to Ka band (7.9 GHz - 21.5 GHz) in T10 package developed and manufactured by Cobham Microwave - detail specification 60102965-069- PID 60102960-085	60102965-069	T10 / SMA connectors	• Cobham Microwave (Chelton Group)	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	Coaxial Attenuators	R.F. Attenuators, Fixed, Coaxial. Frequency Range (GHz): 0 - 22 Attenuation value range (dB): 0 - 20 Operating Temperature Range (°C): -55 + 125		AS PER SPEC.	• RADIALL	ESCC QPL	
2	R4042106	RF coaxial load 50W, DC to 18GHz, 1W SMA male connector Operating temperature range: -55 to +125 °C		SMA connector	• RADIALL	Not qualified	
2	R4043706	RF coaxial load 50W, DC to 18GHz, 2W TNC male connector Operating temperature range: -55 to +125 °C		TNC connector	• RADIALL	Not qualified	
1	RF Coaxial Loads	Passive Devices, RF, Coaxial, Loads Frequency Range (GHz): 0 - 22 Rated P (in) (W): 1 Impedance (Ohm): 50 VSWR (Max.): Type 0<f(GHz)<= 4; 4<f(GHz)< = 12.4; 12.4<f(GHz)< = 18; 18<f(GHz)<= 22 1 1.05 1.10 1.15 1.20 2 1.05 1.15 1.20 1.25 Operating Temperature Range (°C): -55 to + 125		AS PER SPEC.	• RADIALL	ESCC QPL	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	8090.0832.G03	Pulse Width Modulator Controller for DC/DC Converters for flyback, forward, push-pull and half bridge topologies, primary supply voltage range: 18 to 110V, Iout=1 mA for Vref @ 2.5 and 5.0V, Max. oscillator frequency: 250 kHz, Under-voltage lockout with hysteresis, Over-voltage protection, Ccurrent comparator, Voltage loop, Soft-start, Adjustable, Surface Mount, Hermetically Sealed,	8090	CQFP-84	• Thales Alenia Space - ETCA	Not qualified	According to PID 9100.0683, Issue 4.5 dated 10/09/2010 and HTIF HYB-GEN-ES-0017-01-02-HTIF-80900832G03, Issue 1.2 dated 20/08/2010
2	A0000055 (H757)	Thick Film Hermetic Hybrid - MIL-STD-1553B Dual Transceiver (Integrated MIL-STD-1553B Dual Complete Transmitter + MIL-STD-1553B Dual Complete Receiver) Operational Rated Temperature -30 to +85 °C	DPN-A5-ST-0426 Ed	Metallic FP-46	• Astrium Velizy	Others	PID GM.HYBR.NT.220.V.MMS Ed.13 Rev.00
2	A0005367	Thick Film Hermetic Hybrid - MIL-STD-1553B Remote Terminal Coupler (Integrated MIL-STD-1553B Single Transceiver + MIL-STD-1553B Remote Terminal ASIC) Operational Rated Temperature -30 to +85 °C	A5-PS-CA5-491-MMV Ed	Metallic FP-64	• Astrium Velizy	Others	PID GM.HYBR.NT.220.V.MMS Ed.13 Rev.00
2	MCM 21020 DSP BR334 (A0008778)	Multi-chip Module Digital Signal Processor 21020 (TSC21020E floating-point DPS + DPC co-prpcessor + 128 kwords on-module SRAM + cascadable timers, full duplex UARTs, 1355 serial links, watchdog timers and PWM channels). Operational Rated Temperature -30 to +85 °C	MCM-DSP-SPEC-DA0018353-V-ASTR Ed	CQFP-334	• Astrium Velizy	Others	PID GM.HYBR.NT.879.V.ASTR Ed.03 Rev 00. Det. Spec. is MCM DSP21020 Procurement specification. Replaces the old version MCM2102-A0005305 (obsolete)
2	MCM ERC32 (A0008608)	Multi Chip Module Software processing module (20 Mips at 25 MHz) based on a CPU core embedding the ERC32SC, VASI ASIC chip and memories Operational Rated Temperature -30 to +85 °C	MCM-ERC32-SP-00306-V-ASTR Ed	Dual-cavity co-fired	• Astrium Velizy	Others	PID GM.HYBR.NT.879.V.ASTR Ed.03 Rev 00. Det. Spec. is MCM ERC32 procurement specification.

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	AGT-01	Cascadable Amplifier (5-250 MHz) High Gain two stage 31 dB Medium output level +8.5 dBm Low VSWR < 1.3:1 Supply power range +8V to +15V	TD200368-178	TO-8	• Cobham Microwave (Chelton Group)	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
1	JAXA2020/01011DBCR**	Non isolated synchronous point of load (POL) DC/DC converter.Input voltage range: 4.5V to 16V.Adjustable output voltage : 1.2V to 3.3V (Preset:1.2V, 1.5V, 1.8V, 2.5V, 3.3V)Output current: 0A to 3A(Vout=1.2V to 1.8V), 0A to 2.6A(Vout = 2.5V), 0A to 2A(Vout=3.3V)Operating Temperature Range (Case) : -55°C to 125°C (ID number:00 to 04)Size and weight : 15mm x 19mm (thickness:6mm), 7.2g maximum<Line-up of JAXA2020/01011DBCR** (** means the part type)>part type circuit00 1.8V/3A output (std.)01 1.2V/3A output02 1.5V/3A output03 2.5V/2.6A output04 3.3V/2A output05 1.2V/3A output06 1.5V/3A output07 1.8V/3A output08 2.5V/2.6A output09 3.3V/2A output05-09 are the customized type which can reduce the number of external capacitors more than the standard type(00) or other lineup models(01-04).		26-lead, flat package	• Avionics Fukushima Co.,Ltd.	JAXA QPL	
2	MRF-01	Image Reject Mixer, variant V1=RF>LO, variant V2=RF<LO, LO to RF@1500 to 1650MHz=28 dB min., LO to IF@90 to 1510MHz= 35 dB min., Image Reject Ratio = 20 dB min., Hermetically Sealed, Ceramic Flatpack Package. Operating temperature range: -55 to +125 °C	TD200450-178D	FP	• Cobham Microwave (Chelton Group)	Not qualified	
2	MXF-01	Double Balanced Mixer (0.5 to 500 MHz), Conversion Loss: 7 dB max., Isolation: LO to RF, LO to IF @ midband: 35 dB min., RF to IF @ midband: 25 dB min., Hermetically Sealed. Operating Temperature Range: -55 to +125 °C	TD200369-178 Issue a	FP	• Cobham Microwave (Chelton Group)	Not qualified	
2	MXF-02	Double balanced Mixer 10 to 1500 MHz Operating temperature range: -55 to +125 °C	TD200370-178 Issue a	FP	• Cobham Microwave (Chelton Group)	Not qualified	
2	MXF-03	Termination Insensitive Mixer (1 to 3500 MHz), Isolation:LO to RF and LO to IF: 20 dB min. and RF to IF : 18 dB min., SSB Conversion Loss (RF to IF [60MHz] port): from 7.8 to 9.8 dB max., 3rd order intermodulation ratio degradation @ IF VSWR 3: 1: 3 dB typ., Hermetically Sealed, Metal Flatpack package. Operating Temperature Range: -55 to +125 °C	TD200542-178 Issue B	FP	• Cobham Microwave (Chelton Group)	Not qualified	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	Ovenized Crystal Oscillator (OCXO) AXIOM6060	Ultra-Low Phase Noise USO 100.000 MHz10 FM parts qualified to ESCC standards by TESAT, approved by CAST Beijing/China in 2013.In the meantime several EM parts with basically the same specification but with a frequency of 120.000 MHz ws supplied to DSO National Laboratories Singapore end of 2013. Actually we are producing 2 FM parts AXIOM6060-100.000 MHz for an ISS experiment for end-customer Astrium (through Timetech). More inquiries are proofing that this part is of general interest as low-noise high stability reference oscillator in many RF applications.	axiom6060_v4	60x60x30 mm	• AXTAL GmbH & Co. KG	Others	TID >100 kRad
2	Ovenized Crystal Oscillator (OCXO) AXIOM6060	Ultra-Low Phase Noise USO 100.000 MHz10 FM parts qualified to ESCC standards by TESAT, approved by CAST Beijing/China in 2013.In the meantime several EM parts with basically the same specification but with a frequency of 120.000 MHz ws supplied to DSO National Laboratories Singapore end of 2013. Actually we are producing 2 FM parts AXIOM6060-100.000 MHz for an ISS experiment for end-customer Astrium (through Timetech). More inquiries are proofing that this part is of general interest as low-noise high stability reference oscillator in many RF applications.	axiom6060_v4	60x60x30 mm	• AXTAL GmbH & Co. KG	Others	TID >100 kRad
2	Ovenized Crystal Oscillator (OCXO) AXIOM6060	Ultra-Low Phase Noise USO 100.000 MHz10 FM parts qualified to ESCC standards by TESAT, approved by CAST Beijing/China in 2013.In the meantime several EM parts with basically the same specification but with a frequency of 120.000 MHz ws supplied to DSO National Laboratories Singapore end of 2013. Actually we are producing 2 FM parts AXIOM6060-100.000 MHz for an ISS experiment for end-customer Astrium (through Timetech). More inquiries are proofing that this part is of general interest as low-noise high stability reference oscillator in many RF applications.	axiom6060_v4	60x60x30 mm	• AXTAL GmbH & Co. KG	Others	TID >100 kRad
2	SXO-1nnn DIL-14 SXO-2nnn Flatpack SVCXO-1nnn DIL-14 SVCXO-2nnn Flatpack	Crystal Controlled Oscillators 10-90MHz Voltage controled Crastal Oscillators 10-30MHz	DLR-RF-PS-STD-017,DLR-RF-PS-STD-018	DIL-14 and Flatpack	• KVG Quartz Crystal Technology	Others	

EPPL Part	Part Type	Description	Detail Specification	Package	Manufacturer(s)	Qualification Status	Remarks
2	SXO-1nnn DIL-14 SXO-2nnn Flatpack SVCXO-1nnn DIL-14 SVCXO-2nnn Flatpack	Crystal Controlled Oscillators 10-90MHz Voltage controled Crastal Oscillators 10-30MHz	DLR-RF-PS-STD-017,DLR-RF-PS-STD-018	DIL-14 and Flatpack	• KVG Quartz Crystal Technology	Others	