ESCC QUALIFIED PARTS LIST

REP005

Updated 15 June 2010

Document Custodian: European Space Agency - see https://spacecomponents.org

	General Information	
As affected		
Section/Page No.	**Description**	
Section 01 01-05-003-1	Index of Capacitors Type PM94S from Eurofarad	Amended Extended
Section 02 02-01-001-2 02-02-001-2 02-05-004-1	Index of Connectors D*M Series, Rectangular from SOURIAU D*MA Series, Rectangular from SOURIAU 8MCG, Rectangular from SOURIAU	Amended Extended Extended Added
Section 13 13-02-002-1	Index of Wires and Cables Coaxial, Triaxial, Balanced Shielded Line from W.L. Gore	Amended Extended

	General Information	
As affected		
Section/Page No.	**Description**	
Section 01	Index of Capacitors	
01-05-003	Type PM94S from Eurofarad	Amended
Section 02	Index of Connectors	Amended
02-01-001-2	D*M Series, Rectangular from SOURIAU	Amended
02-02-001-1	D*MA Series, Rectangular from C&K Components	Amended
02-02-001-2	D*MA Series, Rectangular from SOURIAU	Amended
02-04-001	SMA Series from Radiall	Extended
02-04-002	SMA 2.9 from Radiall	Extended
Section 08	Index of Microcircuits	Amended
08-80-001-2	4000 B Series from STMicroelectronics	Extended
08-80-002-2	54HCMOS Series from STMicroelectronics	Extended

	General Information	
As affected		
Section/Page No.	**Description**	
Section 01	Index of Capacitors	
01-05-001-1	Type HT86PS, High Voltage from Eurofarad	Amended
Section 02	Index of Connectors	
02-01-001-2	D*M Series, Rectangular from SOURIAU	Amended
02-02-001-2	D*MA Series, Rectangular from SOURIAU	Amended
Section 04	Index of Diodes	
04-02-003-1	Types BYW-81, BYV52,BYV54 from STMicroelectronics	Amended
04-05-001-3	Schottky, BAS 70 from Infineon	Amended
04-16-002-2	PIN, BXY42 from Infineon	Amended
04-16-002-4A-B	PIN, Fast Switching from Chelton	Amended
04-16-003	PIN, BXY43 and 44 from Infineon	Amended
Section 05	Index of Filters	
05-01-001-A-B	Types SFC, SFL, SFP from Eurofarad	Amended
Section 07	Index of Inductors	
07-01-001	Types MSCI,10000,12000,20000 from Microspire	Amended
07-02-002	Type SESI from Microspire	Amended
Section 08	Index of Microcircuits	
08-80-001-2	4000 B Series from STMicroelectronics	Amended
08-80-002-2	54HCMOS Series from STMicroelectronics	Amended
Section 09	Index of Relays	Amended
09-01-002	Type GP5 from LEACH	Extended
09-01-005	Type E from LEACH	Extended
09-02-002	Type GP2 from LEACH	Extended
09-02-006	Type D from LEACH	Extended
09-03-001	Type GP250 from LEACH	Extended
Section 10	Index of Resistors	
10-11-001-1	Single & Double Layer from IRCA	Amended
Section 12	Index of Transistors	
12-01-002-3A-B	Types NPN from STMicroelectronics	Amended
12-01-003-1	Type 2N2369A from STMicroelectronics	Amended
12-02-002-3A-B	Types PNP from STMicroelectronics	Amended
12-10-001	Types BFY 193 from Infineon	Amended
12-10-002	Types BFY 405-450 from Infineon	Amended
12-16-001	Types CFY66&67 High Electron Mobility, Low Noise from Infineon	Amended
Section 13	Index of Wires and Cables	Amended
13-01-010-1	Polyimide, Insulated, Shielded, Type SPLD, Drain Wire from W.L. Gore	Extended
13-02-001	PTFE/Polyimide, Type 50 CIS from Nexans	Amended
Section 14	Index of Miscellaneous	
14-30-10-002-2	Coaxial Loads, 0 to 22CHz from Radiall	Amended
14-30-10-004	Attenuators, Types R413 from Radiall	Amended

	General Information	
As affected	Qualified variants information has been moved to “Characteristics” box for all certificates. Betatherm Sensors is now known as MEAS Ireland (Betatherm) Ltd.	
Section/Page No.	**Description**	
Section 01 01-03-004	Index of Capacitors Type TAJ from AVX (Czech Republic)	Amended Re-qualified
Section 02 02-02-005 02-02-006 02-02-007-1 02-02-008	Index of Connectors Series I, Circular, Crimp from SOURIAU Series II, Circular, Crimp from SOURAU Series III, Circular, Miniature from SOURIAU Series III, Hermetic from SOURIAU	Amended Extended Extended Extended Extended
Section 04 04-13-003-2	Index of Diodes Varactor, DH 267 from Chelton	Amended Extended
Section 10 10-10-001	Index of Resistors Single-in-Line from Vishay SA Sfernice (F)	Amended Deleted
Section 11 11-01-001	Index of Thermistors Types G15K4D489 and *K3A35* from MEAS	Amended Amended
Section 13 13-01-009	Index of Wires and Cables PTFE, Polyimide/PFA Insulated, Shielded, Type SPM from W.L. Gore	Amended Extended

	General Information	
As affected		
Section/Page No.	**Description**	
Section 01	Index of Capacitors	
01-03-004	Type TAJ from AVX (GB)	Amended
Section 02	Index of Connectors	
02-02-005	Series I, Circular, Crimp from SOURIAU	Amended
02-02-006	Series II, Circular, Crimp from SOURIAU	Amended
02-02-007-1	Series III, Circular, Miniature from SOURIAU	Amended
02-02-008	Series III, Hermetic from SOURIAU	Amended
Section 03	Index of Crystels	
03-01-001-1	TO-5 Can from Rakon (Fr.)	Amended
03-01-002	TO-8 Can from Rakon (Fr.)	Amended
Section 04	Index of Diodes	
04-13-003-2	Varactor, DH 267 from Chelton	Amended
Section 08	Index of Microcircuits	
08-80-001-2	4000 B Series from ST Microelectronics	Amended
08-80-002-2	54HCMOS Series from ST Microelectronics	Amended
Section 09	Index of Relays	
09-01-002	Type GP5 from LEACH	Amended
09-01-006	Type 317 from STPI	Amended
09-02-006	Type D from LEACH	Amended
09-02-007	Type 3*7B from STPI	Amended
09-03-001	Type GP250 from LEACH	Amended
Section 13	Index of Wires and Cables	Amended
13-01-001-1	Polyimide,Types FA-3901-1, FA3901-2 from Draka Fileca	Extended
13-01-001-2	Polyimide, Types 1871-1872 from Nexans	Amended
13-01-003	PTFE, Types MTV-BTV from Nexans	Amended

	General Information	
As affected		
Section/Page No.	**Description**	
Section 09 09-02-001	Index of Relays Type TL from REL STPI	Amended Re-qualified

	General Information	
As affected		
Section/Page No.	**Description**	
Section 13	Index of Wires and Cables	Amended
13-01-009-3	PTFE Polyimide / PFA Insulated, Shielded, Type SPM from Axon' Cable	Added
13-01-012-1	Fluoropolymer, Lightweight, based on Type CSWL from Axon' Cable	Added
13-02-002-2	Coaxial, Triaxial, Balanced Shielded Line from Axon' Cable	Added

	General Information	
As affected		
Section/Page No.	**Description**	
Section 04 04-02-001-3 Section 11 11-01-001	Index of Diodes Types 1N5806U and 1N5811U from STMicroelectronics Index of Thermistors Types G15K4D489 and *K3A35* from Betatherm Sensors	Amended Added Amended Extended

	General Information	
As affected		
Section/Page No.	**Description**	
Section 02	Index of Connectors	Amended
02-03-001-1	HE 801 Series from Hypertac	Extended
02-03-004-1	IHD Interposer from Hypertac	Extended
02-04-001	SMA Series from Radiall	Amended
02-04-002	SMA 2.9 from Radiall	Amended
Section 07	Index of Inductors	
07-02-002	Types SESI from Microspire	Amended
Section 09	Index of Relays	Amended
09-01-001	Type T** from REL STPI	Re-Qualified
Section 10	Index of Resistors	Amended
10-08-006	Surface Mount, Type MS1 from Vishay Electron (Sepb	Extended
10-11-001-1	Single & Double Layer IRCA	Extended
Section 12	Index of Transistors	Amended
12-15-001	Type CLY 32 from Infineon	Deleted
Section 13	Index of Wires and Cables	Amended
13-01-004-4	Polyimide, Types 3901019 from Leoni	Added
13-01-009-2	PTFE, Polyimide/PFA Shielded Insulated type 3901018 from Leoni	Added
13-01-010-3	Polyimide, Insulated, Shielded, Drain wire, Type 3901021 from Leoni	Added
Section 18	Section of Optoelectronics	Amended
18-04-001	Photovoltaic type AE 9493 from OSI	Deleted

	General Information	
As affected		
Section/Page No.	**Description**	
Section 01	Index of Capactiors	Amended
01-11-001	Type 101M, 201M, 400M, 401M from Chelton	Amended
Section 02	Index of Connectors	Amended
02-01-001-1	D*M Series, Rectangular from C&K Components	Extended
02-02-001-1	D*MA Series, Rectangular from C&K Components	Extended
02-03-002-1	KMC Series from Hypertac	Extended
02-03-003-1	MHD Series from Hypertac	Extended
02-05-001-1	MDM Series, Rectangular from C&K Components	Extended
02-05-002-1	MTB Series, Rectangular from C&K Components	Extended
Section 04	Index of Diodes	Amended
04-13-003-2	Varactor, DH 276 from Chelton	Amended
04-13-003-3	Varactor, Tuning, DH 76xxx from Chelton	Amended
04-16-02-4A-B	PIN, Fast Switching from Chelton	Amended
Section 10	Index of Resistors	
10-9-002	Type P HR from Vishay SA	Amended
Section 13	Index of Wires and Cables	Amended
13-01-005-1	Crosslinked PTFE, Type Silver-Plated Copper from Tyco Electronics	Extended
Section 18	Section Optoelectronics	
18-04-001	Photovoltaic type AE 9493 from OSI	Amended

	General Information
As affected	
Section/Page No.	**Description**
Section 12 12-15-001-1	Index of Transistors Types CLY 32 from Infineon Amended

	General Information	
As affected		
Section/Page No.	**Description**	
Section 10 10-08-006	Index of Resistors Surface Mount, Type MS1 from Vishay Selb	Amended
Section 18 18-04-001	Index of Optoelectronics Photovoltaic Type AE 9493 from OSI	Amended

TABLE OF CONTENTS

1. FOREWORD

This document contains a list of components that have been qualified to the rules of the ESCC System and are intended for use in ESA and other spacecraft and associated equipment in accordance with the requirements of the ECSS Standard ESCC-Q-ST-60.

It is permitted to advertise the ESCC qualification status of a product provided such publicity or advertisement does not state or imply that the product is the only qualified or capability approved one of that particular type, range or family.

2. PROCURORS' RESPONSIBILITY

When procuring ESCC qualified or capability approved components, the procurer is responsible for ensuring that the qualification or capability approval status is valid and that delivered components fulfill the specified requirements of the applicable ESCC specifications. The procurer is advised to utilise the ESCC non-conformance system in the event that a qualified or capability approved manufacturer delivers non-conforming components.

3. USE OF TABLES

3.1 Publication

The individual entries are published in sections within this document and are presented by manufacturer on the web, the starting point for which is:

https://escies.org/public/escc/qpl

3.2 Type Designation

The referenced type (style) designations are derived from industrial standards (i.e., JEDEC PRO-ELECTRON, MIL, IEC and CECC). The purpose is to identify the similarity of a listed qualified component to a standard type designation.

3.3 Components Characteristics

The electrical characteristics are listed for guidance only and, unless otherwise stated, are specified at +25°C. The precise characteristics of the qualified component are defined in the referenced ESCC specification.

3.4 Manufacturer

Plant locations are indicated in the individual listing; contact information is given in full on the appropriate web pages accessed from:

https://escies.org/public/escc/qpl

4. REVISION PROCEDURE

Amendments to earlier issues of the QPL implemented herein are indicated by the date on the front page and by the content of the "Document Changes" pages. The latter provides the changes over a one year period. The same issue date appears on the table at the start of each Section on the Appendix irrespective of whether changes have been made in a particular section. This indicates the information has been reviewed and is current. Finally, it should be noted that the ESA/SCC System is superseded by the ESCC (European Space Components Coordination) System.

5. TABLE OF QUALIFIED COMPONENTS

Components qualified to the ESCC System are grouped by component type designations. Individual components are listed within the relevant sections as indicated in Table 5.1

TABLE 5.1

Section	Component Types
01	Capacitors
02	Connectors
03	Crystals
04	Diodes
05	Filters
06	Fuses
07	Inductors
08	Microcircuits
09	Relays
10	Resistors
11	Thermistors
12	Transistors
13	Wires and Cables
14	Miscellaneous
18	Optoelectronics

APPENDIX A

Qualified Components List

Section 01 **Component Type: Capacitors**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
01-01			Ceramic, Fixed	
	01-01-005	231 E	Type II, High Capacitance	AVX (N.I.)
	01-01-006	262 C	Type II, High Voltage	AVX (N.I.)
01-02			Ceramic, Fixed, Chip	
	01-02-001-1	109 J	Type I	AVX/TPC
	01-02-002-1	110 J	Type II	AVX/TPC
	01-02-004-1	264 C	Type II, High Voltage	AVX (N.I.)
01-03			Tantalum, (Solid), Fixed, Electrolytic	
	01-03-004	196 D	Type TAJ	AXV (CZ)
01-05			Fixed, Film	
	01-05-001-1	251 D	Type HT86PS, High Voltage	Eurofarad
	01-05-003-1	270 C	Type PM94S	Eurofarad
01-11			Semiconductor	
	01-11-001	286	Type 101M, 201M, 400M and 401M	Chelton

Types covered by similarity:	Remarks: Capacitors no longer use a varnish finish.
±20% tolerance	

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3001 Detail ESCC 3001/030	AVX Limited Coleraine Northern Ireland	Qualification	DRA	Jul 1996
		Extension	DERA	Jul 1999
		Extension	DERA	Jul 2001
		Extension	QinetiQ	Oct 2003
		Extension	QinetiQ	Mar 2006
		Extension	BNSC	Jun 2008

Characteristics: E12 series

Qualified Range:

Variants 01 to 74 capacitance range for 50V, 100V and 200V, as per Detail Specification
Variants 01 to 52, and 59 to 60, for 500V are qualified
±10% tolerance

Operating Temperature Range (°C): -55 to +125

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CAPACITORS,
CERAMIC, TYPE II, HIGH CAPACITANCE,
BASED ON CASE STYLES BR, CV, AND CH

Current Validity of Qualification		Page
Certificate	Valid Until	01-01
231 E	June 2010	005

Types covered by similarity:	Remarks:
±20% tolerance	

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3001 Detail ESCC 3001/034	AVX Limited Coleraine Northern Ireland	Qualification Extension Extension Extension	DERA QinetiQ QinetiQ BNSC	Sep 2000 Aug 2002 Mar 2006 Jan 2009

Characteristics: E12 series

Qualified Range:

Variants 01 to 22 are qualified
±10% tolerance

Operating Temperature Range (°C): -55 to +125

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QPL

CAPACITORS,
CERAMIC, TYPE II, HIGH VOLTAGE, 1.0 TO 5.0 KV,
BASED ON CASE STYLES VR, CV, AND CH

Current Validity of Qualification		Page
Certificate	Valid Until	01-01
262 C	January 2011	006

Types covered by similarity:

Tolerance (±): 0.5pF; 2, 5, 20%

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3009 Detail ESCC 3009/003 3009/004 3009/005 3009/006 3009/022	AVX/TPC St Apollinaire France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1983
Extension	CNES	Sep 1986
Requalification	CNES	Apr 1992
Extension	CNES	Jan 1995
Extension	CNES	Jun 1998
Extension	CNES	Nov 2000
Extension	CNES	Jun 2003
Requalification	CNES	Feb 2005
Extension	CNES	May 2007
Extension	CNES	Jun 2009

Characteristics: Operating Temp. Range (°C), -55 to +125
Variants 01 and 06 are qualified
Values covered by ESCC Specifications defined below.

Style	Model	Detail Spec.	Variants	Capacitance Range (pF)	Rated Volt. (V)	Tolerance (±%)	TC (ppm/°C)
0805	A_12C	3009/003	01, 06	4.7 to 9.1 10 to 1500	50, 100 50, 100	0.5pF 1, 2, 5, 10	±30
1206	A_20C	3009/022	01, 06	10 to 3900	50, 100	1, 2, 5, 10	±30
1210	A_13C	3009/004	01, 06	22 to 6800	50, 100	1, 2, 5, 10	±30
1812	A_14C	3009/005	01, 06	100 to 15000	50, 100	1, 2, 5, 10	±30
2220	A_15C	3009/006	01,06	470 to 33000	50, 100	1, 2, 5, 10	±30

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CAPACITORS,
CERAMIC, FIXED,
CHIP, TYPE I

Current Validity of Qualification		Page
Certificate	Valid Until	01-02
109 J	June 2011	001-1

Types covered by similarity:

Tolerance (±%): 10, 20%

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3009 Detail ESCC 3009/008 3009/009 3009/010 3009/011 3009/023	AVX/TPC St Apollinaire France

Characteristics:

See Table on next page

Operating Temperature Range (°C), -55 to +125

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1983
Extension	CNES	Sep 1986
Requalification	CNES	Oct 1992
Extension	CNES	Mar 1995
Extension	CNES	Jun 1998
Extension	CNES	Nov 2000
Extension	CNES	Jun 2003
Requalification	CNES	Feb 2005
Extension	CNES	May 2007
Extension	CNES	Jun 2009

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QPL

CAPACITORS,
CERAMIC, FIXED,
CHIP, TYPE II

Current Validity of Qualification		Page
Certificate	Valid Until	01-02
110 J	June 2011	002-1A

Characteristics:

Style	Model	Detail Spec.	Variants	Capacitance Range (pF)			Rated Volt. (V)	Tol. (±%)
0805	A_12G	3009/008	01, 06	10000 3900 820	to to to	47000 27000 10000	25 50 100	5, 10, 20 5, 10, 20 5, 10, 20
0805	A612Z	3009/008	07	27000 10000	to to	68000 47000	25, 50 100	5, 10, 20
1210	A_13G	3009/009	01, 06	47000 33000 3900	to to to	220000 120000 47000	25 50 100	5, 10, 20 5, 10, 20 5, 10, 20
1210	A613Z	3009/009	07	100000 47000	to to	330000 220000	25, 50 100	5, 10, 20
1812	A_14G	3009/010	01, 06	82000 56000 6800	to to to	470000 270000 82000	25 50 100	5, 10, 20 5, 10, 20 5, 10, 20
1812	A614Z	3009/010	07	220000 82000	to to	680000 470000	25, 50 100	5, 10, 20
2220	A_15G	3009/011	01, 06	180000 100000 18000	to to to	1000000 680000 180000	25 50 100	5, 10, 20 5, 10, 20 5, 10, 20
2220	A615Z	3009/011	07	470000 180000	to to	1500000 1000000	25, 50 100	5, 10, 20
1206	A_20G	3009/023	01, 06	27000 12000 2200	to to to	100000 68000 22000	25 50 100	5, 10, 20 5, 10, 20 5, 10, 20
1206	A620Z	3009/023	07	47000 27000	to to	150000 100000	25, 50 100	5, 10, 20

Types covered by similarity:

±20% tolerance

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3009 Detail ESCC 3009/034	AVX Limited Coleraine Northern Ireland

Nature of Approval	Supervising Authority	Date
Qualification	DERA	Feb 2001
Extension	QinetiQ	Apr 2003
Extension	QinetiQ	May 2006
Extension	BNSC	Jan 2009

Characteristics: E12 series

Qualified Range:
Variants 01 to 12 are qualified
Terminations:
Variants 01 to 12: metallised pads

Operating Temperature Range (°C):-55 to +125

Style	Rated Voltage (kV)	Capacitance Range (pF)			Tol. (±%)
1812	1.0	3 900	to	22 000	10
	2.0	1 500	to	1 800	10
	3.0	820	to	1 000	10
1825	1.0	27 000	to	56 000	10
	2.0	2 200	to	6 800	10
	3.0	820	t0	2 700	10

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CAPACITORS, FIXED, CHIP,
CERAMIC, TYPE II, HIGH VOLTAGE,
BASED ON 1812 and 1825

Current Validity of Qualification		Page
Certificate	Valid Until	01-02
264 C	January 2011	004-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3012 Detail ESCC 3012/001	AVX Czech Republic sro Tantalum Division Lankroun Czech Republic	Qualification Extension Extension Extension Re-qualification	DRA DERA QinetiQ BNSC ESTEC	Jun 1993 Apr 2001 Apr 2003 Mar 2008 Mar 2010

Characteristics:

Variants 01 to 07 and 11 to 17 are qualified

Types covered by similarity:

20% tolerance by variant where applicable

Remarks: Maintenance of qualification testing is under-way.

Procurement Specifications	Manufacturer
Generic ESCC 3006 Detail ESCC 3006/022	EUROFARAD Lagny sur Marne France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Aug 1998
Extension	CNES	Jan 2001
Extension	CNES	Aug 2003
Extension	CNES	Dec 2005
Extension	CNES	Apr 2008

Characteristics: Operating Temperature Range, (°C): -55 to +125
All values defined by the ESCC Detail Specification

Capacitance Range (pF)			Tol. (±%)	U_R(V)
33 000	to	2 200 000	10	1 500
15 000	to	1 500 000	10	2 500
15 000	to	1 000 000	10	3 500
6 800	to	470 000	10	5 000
2 200	to	220 000	10	7 500
1 000	to	100 000	10	10 000
3 300	to	68 000	10	12 500
1 500	to	33 000	10	15 000
680	to	15 000	10	20 000

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CAPACITORS,
FIXED, RECONSTITUTED MICA, HIGH VOLTAGE,
BASED ON TYPE HT86PS

Current Validity of Qualification		Page
Certificate	Valid Until	01-05
251 D	April 2010	001-1

Types covered by similarity:

All values defined by the ESCC Detail Specification
±20% (E6 Series) tolerance by variant where applicable

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3006 Detail ESCC 3006/024	EUROFARAD Marmoutier France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Aug 2002
Extension	CNES	Apr 2005
Extension	CNES	Aug 2007
Extension	CNES	Jun 2010

Characteristics: E12 Series
All values defined by the ESCC Detail Specification

Sizes Available 01, 02, 03, 04

Maximum dimensions (mm):
01: 10.7 x 10.7 x B
02: 15.5 x 15.5 x B
03: 16.5 x 15.5 x B
04: 18.5 x 17.0 x B

Where B= 6, 8, 10, 12, 14, 15 depending on capacitance value

Operating Temperature Range, (°C):
-55 to +125

Capacitance Range (µF)			Tol. (±%)	U_R(V)
2.2	to	47	10	50
1.5	to	22	10	63
0.56	to	12	10	100
0.33	to	5.6	10	200
0.22	to	4.7	10	250
0.10	to	1.8	10	400

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CAPACITORS,
FIXED, SURFACE MOUNT, D.C. SELF-HEALING, NON-INDUCTIVE,
POLYTEREPHTHALATE DIELECTRIC,
BASED ON TYPE PM94S

Current Validity of Qualification		Page
Certificate	Valid Until	01-05
270 C	August 2011	003-1

Types covered by similarity:

Unless otherwise stated in Table 1(a) of the Detail Specification, 10% and 20% tolerance are available.

Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5010 Detail ESCC 5711/002	CHELTON Les Ulis France	Qualification	CNES	Dec 2008

Characteristics: Operating Temperature Range, (°C): $^{-}$55 to $^{+}$150

All variants defined by the ESCC Detail Specification.

Type	Capacitance Range (pF)	U_R(V)
400M106A & C 400M10xA & 107C 400M108A & C 400M110A & C 400M113J & 114J	8.2, 10, 12, 15 18, 22, 27, 33, 39 47, 56, 68 81, 100 10	40
101M106A & C 101M10xA & 107C 101M108A & C	3.9, 4.7, 5.6, 6.8 10, 12, 15 22, 27, 33, 39	100
201M106C 201M106A 201M10xA & 107C 201M108A & C 201M111J & 112J	2.2, 2.7, 3.3 0.1X (201M106C, -107C, -108C) + 210M106C 3.9, 4.7, 5.6, 6.8, 8.2 10, 12, 15, 18 0.25 & 0.4	200
401M111J 401M112J	0.125 0.2	400

Section 02 **Component Type: Connectors**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
02-01			Multipin, Solder Contacts	
	02-01-001-1	71 M	D*M Series, Rectangular	C&K COMPONENTS
	02-01-001-2	155 J	D*M Series, Rectangular	SOURIAU
02-02			Multipin, Crimp Contacts	
	02-02-001-1	72 M	D*MA Series, Rectangular	C&K COMPONENTS
	02-02-001-2	156 H	D*MA Series, Rectangular	SOURIAU
	02-02-003	25 K	DBAS Series, Circular	Deutsch
	02-02-005	220 E	Series I, Circular, Crimp	SOURIAU
	02-02-006	221 E	Series II, Circular, Crimp	SOURIAU
	02-02-007-1	222 E	Series III, Circular, Miniature	SOURIAU
	02-02-008	223 D	Series III, Hermetic	SOURIAU
	02-02-009	288	Series ACB1	Axon' Cables
02-03			Printed Circuit Board	
	02-03-001-1	99 K	HE 801 Series	HYPERTAC
	02-03-001-2	217 E	HE 801 Series	HYPERTAC UK
	02-03-002-1	149 H	KMC Series	HYPERTAC
	02-03-003-1	250 D	MHD Series	HYPERTAC
	02-03-004-1	281 A	IHD INTERPOSER	HYPERTAC
02-04			R.F. Coaxial	
	02-04-001	68 K	SMA Series	Radiall
	02-04-002	283A	SMA 2.9	Radiall
02-05			Micro-miniature, Crimp Contacts	
	02-05-001-1	140 K	MDM Series, Rectangular	C&K COMPONENTS
	02-05-002-1	141 K	MTB Series, Rectangular	C&K COMPONENTS
	02-05-003-1	290	MDMA, Rectangular	C&K COMPONENTS
	02-05-004-1	301	8MCG, Rectangular	Souriau

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/001 3401/004 3401/022 3401/040 3401/080	C&K COMPONENTS Dole France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1981
Extension	CNES	Jun 1983
Extension	CNES	Sep 1986
Extension	CNES	Oct 1988
Extension	CNES	Jun 1989
Extension	CNES	Sep 1991
Extension	CNES	Apr 1994
Extension	CNES	Jan 1997
Extension	CNES	Jan 2000
Extension	CNES	Apr 2003
Extension	CNES	Aug 2005
Extension	CNES	Aug 2007
Extension	CNES	Sep 2009

Characteristics: Complete range as defined in the corresponding Detail Specifications are qualified
Shell Size: E, A, B, C, D, F

Range of Contacts: 9, 15, 25, 37 and 50 size 20 contacts for standard density layout
3W3, 5W1 to 47W1 combined contact arrangements
15, 26, 44, 62, 78 and 104 size 22 contacts for high density layout

Mounting Type: Blank: standard mounting holes
Y: floating mount
E: captive nuts

Termination contacts: solder bucket, straight PCB, 90 ° PCB
Gold-plated non-magnetic coating
Coaxial contact arrangements: 3401/004 variants 01 to 25
Power contact arrangements: 3401/040 variants 01 to 17

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS,
RECTANGULAR RECEPTACLE AND PLUG,
BASED ON TYPE D*M

Current Validity of Qualification		Page
Certificate	Valid Until	02-01
71 M	September 2011	001-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/001 3401/022 3401/072	SOURIAU Connection Technology Marolles en Brie France

Characteristics:

Complete range as defined in the Detail Specifications are qualified except for

- high density 104 contacts arrangement
- coaxial and power contacts and arrangement

3401/022: variants 01 to 16, 44 to 57, 65 to 80
3401/072: variants 01 to 04, 41 to 45

Range of Contacts: Size 20: 9, 15, 25, 37 and 50 contacts.
Range of Contacts: Size 22:15, 26, 44, 62, 78 contacts.

Mounting Type=
blank: standard mounting holes
Y: floating mount
E: captive nuts

Gold-plated non-magnetic coating

Operating Temperature Range (°C): -55 to +125

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Sep 1988
Extension	CNES	Apr 1991
Extension	CNES	Jan 1994
Extension	CNES	Jul 1996
Extension	CNES	Oct 1997
Extension	CNES	Mar 2000
Extension	CNES	Apr 2003
Extension	CNES	Mar 2006
Extension	CNES	May 2008
Extension	CNES	May 2010

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS,
NON-REMOVABLE, RECTANGULAR RECEPTACLE AND PLUG,
BASED ON TYPE D*M

Current Validity of Qualification		Page
Certificate	Valid Until	02-01
155 J	May 2012	001-2

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/002 3401/005 3401/020 3401/021	C&K COMPONENTS Dole France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1981
Extension	CNES	Jun 1983
Extension	CNES	Sep 1986
Extension	CNES	Oct 1988
Extension	CNES	Jun 1989
Extension	CNES	Sep 1991
Extension	CNES	Apr 1994
Extension	CNES	Jan 1997
Extension	CNES	Jan 2000
Extension	CNES	Apr 2003
Extension	CNES	Aug 2005
Extension	CNES	Aug 2007
Extension	CNES	Sep 2009

Characteristics: Complete range defined in the corresponding Detail Specifications are qualified
Shell Size: E, A, B, C, D, F

Range of Contacts: 9, 15, 25, 37 and 50 size 20* contacts for standard density layout
*Accepts wire sizes AWG # 20 to 24 (standard bucket: variants 01 and 02) per 3401/005
*Accepts wire sizes AWG # 26 and 28 (reduced bucket: variants 03 and 04) per 3401/005
*Accepts wire size AWG # 18 and 20 (large bucket: variants 05 to 06) per 3401/005
15, 26, 44, 62, 78 and 104 size 22** contacts for high density layout
** Accepts wire sizes AWG # 22 to 26 (standard bucket: variants 07 to 08) per 3401/005

Mounting Type: standard mounting holes; floating mount, captive nuts

Gold-plated non-magnetic coating

Connector Savers: For usage with above connector range

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, CRIMP CONTACTS,
RECTANGULAR RECEPTACLE AND PLUG,
BASED ON TYPE D*MA

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
72 M	September 2011	001-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401 Detail ESCC 3401/002 3401/005 3401/020 3401/021 3401/022 3401/072	SOURIAU Connection Technology Marolles en Brie France	Qualification Extension Extension Extension Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES	Sep 1988 Apr 1991 Jan 1994 Jul 1996 Mar 2000 Apr 2003 Mar 2006 May 2008 Jun 2010

Characteristics: Complete range as defined in the Detail Specifications except high density 104 contacts arrangement are qualified
3401/022: variants 01 to 16, 44 to 57, 65 to 80
3401/072: variants 01 to 04, 41 to 45

Connectors:- *Accepts wire sizes AWG # 20 to 24 (standard bucket: variants 01 and 02)
*Accepts wire sizes AWG # 26 and 28 (reduced bucket: variants 03 and 04)
*Accepts wire size AWG # 22, 24 and 26 (contact AWG # 22 for high density, contact arrangements, variants 07 and 08)

Range of Contacts: 9, 15, 25, 37 and 50 contacts size 20 for standard contact arrangements
15, 26, 44, 62, 78 contacts size 22 for high density contact arrangements

Gold-plated non-magnetic coating

Operating Temperature Range (°C): -55 to +125

Connector Savers- For usage with above connector range

ESCC European Space Components Coordination
QPL

CONNECTORS AND CONNECTOR SAVER,
ELECTRICAL, CRIMP CONTACTS, REMOVABLE
RECTANGULAR RECEPTACLE AND PLUG,
BASED ON TYPE D*MA

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
156 H	May 2012	001-2

Types covered by similarity:

Remarks: Maintenance of qualification testing is under-way.

Maximum Ratings are stated for one isolated contact.

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/008 3401/009 3401/012	Cie DEUTSCH Evreux France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jul 1979
Extension	CNES	Nov 1982
Extension	CNES	Nov 1985
Extension	CNES	Oct 1989
Extension	CNES	Apr 1992
Extension	CNES	Aug 1994
Extension	CNES	Feb 1997
Extension	CNES	May 1999
Extension	CNES	Aug 2001
Extension	CNES	Nov 2004
Extension	CNES	May 2007

Characteristics: All variants defined in the Detail Specifications are qualified

Wire Sizes (AWG) #	8	10	12, 14	16, 20	20, 24	18, 22	26, 30
Max Rating (A)	46	33	23	13	7.5	10	2.0

Variants 01 to 20 are qualified

Cylindrical Multicontacts
Range of shell sizes: 3, 7, 12, 19, 27, 37, 61 contacts in wire size AWG # 20 and solder gauge 8
Other arrangements with contacts size AWG 22, 20, 16, 12 and 8

Operating Temperature Range (°C): -65 to +200

ESCC European Space Components Coordination
QPL

CONNECTORS,
MINIATURE, ELECTRICAL, CIRCULAR, PUSH-PULL COUPLING,
REMOVABLE CRIMP CONTACTS,
BASED ON TYPE DBAS

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
25 K	May 2009	003

Types covered by similarity:

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/052 3401/058 3401/062	SOURIAU Connection Technology Marolles en Brie France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	May 1995
Extension	CNES	Mar 1998
Extension	CNES	Jul 2001
Extension	CNES	Jun 2005
Extension	CNES	Mar 2008
Extension	CNES	Mar 2010

Characteristics: All connector variants are qualified
For 3401/058, variants 01 to 14 are qualified
For 3401/062, variants 01 to 27 are qualified

Contact Size	Ratings (A)
8	46.0
12	23.0
16	13.0
20	7.5

Range: # 20 with standard contact arrangements 3, 6, 10, 19, 26, 32, 41, 53, 61
22 with high density arrangements 6, 13, 22, 37, 55, 66, 79, 100, 128

Other arrangements with contact sizes: 20, 16, 12, 8
Receptacle and Plug Shell Sizes: 09, 11, 13, 15, 17, 19, 21, 23, 25

Operating Temperature Range (°C): $^{-}$65 to $^{+}$200

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, CIRCULAR, BAYONET COUPLING, SCOOP-PROOF,
REMOVABLE CRIMP CONTACTS,
BASED ON TYPE MIL-C-38999, SERIES I

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
220 E	March 2012	005

Types covered by similarity:

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/044 3401/045 3401/062	SOURIAU Connection Technology Marolles en Brie France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	May 1995
Extension	CNES	Mar 1998
Extension	CNES	Jul 2001
Extension	CNES	Jun 2005
Extension	CNES	Mar 2008
Extension	CNES	Mar 2010

Characteristics: For 3401/044, all variants are qualified
For 3401/045, variants 01 to 08 are qualified
For 3401/062, variants 01 to 27 are qualified

Contact Size	Ratings (A)
12	23.0
16	13.0
20	7.5

Range: # 20 with standard contact arrangements 3, 6, 10, 18, 26, 32, 41, 55, 61
22 with high density arrangements 6, 13, 22, 37, 55, 66, 79, 100, 128

Other arrangements with contact sizes: 20, 16, 12
Receptacle and Plug Shell Sizes: 08, 10, 12, 14, 16, 18, 20, 22, 24

Operating Temperature Range (°C): $^{-}$65 to $^{+}$200

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, CIRCULAR, BAYONET COUPLING,
REMOVABLE CRIMP CONTACTS,
BASED ON TYPE MIL-C-38999, SERIES II

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
221 E	March 2012	006

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/056 3401/058 3401/062 3401/066 3401/070	SOURIAU Connection Technology Marolles en Brie France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	May 1995
Extension	CNES	Mar 1998
Extension	CNES	Jul 2001
Extension	CNES	Jun 2005
Extension	CNES	Mar 2008
Extension	CNES	Mar 2010

Charac-teristics:
3401/056 all variants are qualified
3401/058 variants 01 to 14 are qualified
3401/062 variants 28 to 54 are qualified
3401/066 variants 01 and 02 are qualified
3401/058 crimp contacts and 3401/066 triax contacts to be mounted on 3401/056 connectors
3401/070 connector receptacles with PCB contacts

Crimp Contact Size	Ratings (A)	PCB Contact Size	Ratings (A)
4	80.0	16	10.0
8	46.0	20	5.0
12	23.0	22	3.0
16	13.0		
20	7.5		
22	5.0		

Range: # 20 with standard contact arrangements (3, 4, 5, 6, 7, 8, 10, 18, 19, 26, 32, 41, 53, 55, 61 contacts)
22 with high density arrangements (6, 13, 22, 37, 55, 66, 79, 100, 128 contacts)

Other arrangements with contact sizes:# 20, 16, 12, 8 ,4
Receptacle and Plug Shell Sizes: 09, 11, 13, 15, 17, 19, 21, 23, 25. Triax contact= (layout 09-01 only)

Operating Temperature Range (°C): $^{-}$65 to $^{+}$200

ESCC European Space Components Coordination
QPL

CONNECTORS, MINIATURE, ELECTRICAL, CIRCULAR, TRIPLE-START SELF-LOCKING COUPLING, SCOOP-PROOF, REMOVABLE AND NON-REMOVABLE CONTACTS
BASED ON TYPE MIL-C-38999, SERIES III

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
222 E	March 2012	007-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401 Detail ESCC 3401/057	SOURIAU Connection Technology Marolles en Brie France	Qualification Requalification Extension Extension Extension	CNES CNES CNES CNES CNES	May 1995 Jul 2001 Jun 2005 Mar 2008 Mar 2010

Characteristics: All variants are qualified

Contact Size	Ratings (A)
8, 12, 16 20, 22D	33, 17, 10 5.0, 3.0

Range: # 20 with standard contact arrangements (3, 6, 10, 19, 26, 32, 41, 53, 61 contacts)
22 with high density arrangements (6, 13, 22, 37, 55, 66, 79, 100, 128 contacts)

Receptacle Shell Sizes: 09, 11, 13, 15, 17, 19, 21, 23, 25

Receptacle (contacts # 8, 12, 16, 20, 22D) and Feedthrough (contacts # 8, 12, 16, 20, 22D)

Operating Temperature Range (°C): $^{-}$65 to $^{+}$200

ESCC European Space Components Coordination
QPL

CONNECTORS, MINIATURE, ELECTRICAL, CIRCULAR, TRIPLE-START SELF-LOCKING COUPLING, SCOOP-PROOF, HERMETIC RECEPTABLE AND FEEDTHROUGH,
BASED ON TYPE MIL-C-38999, SERIES III

Current Validity of Qualification		Page
Certificate	Valid Until	02-02
223 D	March 2012	008

Types covered by similarity:	Remarks:
Variants 02 and 10	

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401 Detail ESCC 3401/079	AXON' CABLE S.A. Montmirail France	Qualification	CNES	May 2009

Characteristics::

Variants 01 to 16 are qualified

Variants 01 to 08: Plug 3 and 4 Lugs, Straight and Right Angle with pin contact
Variants 09 to 16: Bulkhead Jacks, 3 and 4 Lugs, Straight and Right Angle with solder contact

All cables are 77Ω MIL-STD– 1553B Data Bus twisted shielded pairs

Working Voltage: 200 Vrms
Rated Current (contact): 1A

Operating Temperature Range (°C): $^{-}$55 to $^{+}$150

		Current Validity of Qualification		Page
ESCC European Space Components Coordination QPL	CONNECTORS, ELECTRICAL, TRIAXIAL, BAYONE COUPLING, NON-REMOVABLE CRIMP CONTACTS, MIL-STD-1553B DATABUS, BASED ON TYPE ACB1 SERIES	Certificate	Valid Until	02-02
		288	May 2011	009

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/016 3401/017	HYPERTAC SA Saint-Aubin-Lès-Elbeuf France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Nov 1982
Extension	CNES	May 1985
Extension	CNES	May 1988
Extension	CNES	Apr 1991
Extension	CNES	Jan 1994
Extension	CNES	Mar 1996
Extension	CNES	Mar 1998
Extension	CNES	Jan 2002
Extension	CNES	Jun 2004
Extension	CNES	Mar 2007
Extension	CNES	Oct 2009

Characteristics: All variants are qualified

Shell specifications and sizes: 3401/016
Contact: 3401/017 Crimp wire-wrap solder and savers, 1 to 22 and 64 to 70

2 rows: 17, 29, 41, 53, 65, 72, 84, 96, 120 contacts
3 rows: 62, 80, 98, 160 contacts

Contact Ratings: 5 A (1 contact AWG 22)
1.5 A (>31 contacts, AWG 22)

Operating Temperature Range (°C): $^{-}$55 to $^{+}$125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, REMOVABLE CONTACTS, CRIMP WIRE-WRAP
SOLDER AND SAVER, PRINTED CIRCUIT BOARD,
BASED ON TYPE HE 801

Current Validity of Qualification		Page
Certificate	Valid Until	02-03
99 K	October 2011	001-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/016 3401/017	HYPERTAC LTD London England

Nature of Approval	Supervising Authority	Date
Qualification	DRA	Jul 1994
Extension	DRA	Nov 1996
Extension	DERA	Nov 1998
Extension	QinetiQ	Apr 2002
Extension	QinetiQ	Mar 2005
Extension	BNSC	Jan 2009

Characteristics:

Shell specifications and sizes: 3401/016
Range of components: 17 to 160 way connectors
PCB, 90°, crimp, wire-wrap and saver contacts

Guiding/locking device numbers: 26, 27, 28, 29, 33, 34, 35, 36, 40, 41, 43, 46, 54, 55, 71, 72, 76, 77, 78

Contact Ratings: 5 A (1 contact AWG 22)
1.5 A (>31 contacts, AWG 22)

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, REMOVABLE CONTACTS, CRIMP WIRE-WRAP
SOLDER AND SAVER, PRINTED CIRCUIT BOARD,
BASED ON TYPE HE 801

Current Validity of Qualification		Page
Certificate	Valid Until	02-03
217 E	January 2011	001-2

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/039	HYPERTAC SA Saint-Aubin-Lès-Elbeuf France

Characteristics:

3 rows 26, 44, 62, 80, 98, 144 contacts

Contact Ratings: 2 A (1 contact)

Operating Temperature Range (°C): -55 to +125

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Mar 1987
Extension	CNES	May 1990
Extension	CNES	Jan 1993
Extension	CNES	Oct 1995
Extension	CNES	Mar 1998
Extension	CNES	Jan 2002
Extension	CNES	Jun 2004
Extension	CNES	Mar 2007
Extension	CNES	Sep 2009

ESCC European Space Components Coordination

QPL

CONNECTORS,
ELECTRICAL, NON-REMOVABLE SOLDER AND
WIRE-WRAP CONTACTS AND SAVERS, PRINTED CIRCUIT BOARD,
BASED ON TYPE KMC

Current Validity of Qualification		Page
Certificate	Valid Until	02-03
149 H	September 2011	002-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401 Detail ESCC 3401/065	HYPERTAC SA Saint-Aubin-Les-Elbeuf France	Qualification Extension Extension Extension Extension	CNES CNES CNES CNES CNES	Aug 1998 Jan 2002 Jun 2004 Mar 2007 Sep 2009

Characteristics:

Contact: 52, 100, 152, 200, 252, 300, 352 and 400
Contact Codes: 10, 11, 12, 30, 31, 43, 45, 47 and 91
Guiding and Locking Devices Codes: 110, 111, 121, 124, 134 and 201

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination
QPL

CONNECTORS AND SAVERS,
ELECTRICAL, RECTANGULAR, NON-REMOVABLE,
PRINTED CIRCUIT BOARD,
BASED ON TYPE MHD

Current Validity of Qualification		Page
Certificate	Valid Until	02-03
250 D	September 2011	003-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401 Detail ESCC 3401/076	HYPERTAC SA Saint-Aubin-Les-Elbeuf France	Qualification Extension	CNES CNES	Aug 2007 Oct 2009

Characteristics: All design envelops specified in Table 1(a) of ESCC Detail Specification are qualified

Max. number of rows 11
Max. number of contacts: 660

Locking and Guiding Devices:
-Through holes only
-M2 studs with locking nuts and washers
-Locating pins not available

Rated current: 1A each contact
Total contact compression range: 0.1 to 0.65 mm per contact
Compression force: 1.6N per contact
Torque for locking devices: 10 Ncm

Operating Temperature Range (°C): $^{-}$55 to $^{+}$125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, CRIMP CONTACTS, Z-AXIS INTERPOSER,
PRINTED CIRCUIT BOARD,
BASED ON TYPE RX

Current Validity of Qualification		Page
Certificate	Valid Until	02-03
281 A	October 2011	004-1

Types covered by similarity:

- Hermetically sealed receptacle

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3402 Detail ESCC 3402/001 3402/002 3402/003	RADIALL La Verpilliere France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1981
Extension	CNES	Apr 1983
Extension	CNES	Apr 1986
Extension	CNES	Nov 1989
Extension	CNES	Jul 1992
Extension	CNES	Nov 1994
Extension	CNES	May 1998
Extension	CNES	Aug 2002
Extension	CNES	Jan 2005
Extension	CNES	Dec 2007
Extension	CNES	May 2010

Characteristics:

Frequency Range 0-18 GHz
3402/001 Pin contact (Plug). Variants 01 to 47
3402/002 socket contact (Receptacle). Variants 01 to 85
3402/003 Adapters. Variants 01 to 14
Crimp– or solder-type contact for flexible and semi-rigid cables, contacts for micro strip
Gold-plated beryllium copper non-magnetic or stainless steel

Operating Temperature Range (°C): See Detail Specifications

ESCC European Space Components Coordination
QPL

CONNECTORS,
RF, COAXIAL, SOLDER AND CRIMP CONTACTS, MALE, FEMALE
ADAPTORS AND CONNECTING PIECES,
BASED ON TYPE SMA

Current Validity of Qualification		Page
Certificate	Valid Until	02-04
68 K	December 2011	001

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3402 Detail ESCC 3402/021 3402/022 3402/023	RADIALL La Verpilliere France	Qualification Extension	CNES CNES	Dec 2007 May 2010

Characteristics:

Frequency Range 0-40 GHz
50 Ohms

3402/021 Pin contact (Plug). Variants 01 to 06
3402/022 Socket contact (Receptacle). Variants 01 to 05
3402/023 Adapters. Variants 01 to 06
Crimp– or solder-type contact for flexible and semi-rigid cables, contacts for micro strip
Gold-plated beryllium copper non-magnetic or stainless steel

Operating Temperature Range (°C): -65 to +165

ESCC European Space Components Coordination
QPL

CONNECTORS,
RF, COAXIAL, SOLDER AND CRIMP CONTACTS, MALE, FEMALE
ADAPTORS AND CONNECTING PIECES,
BASED ON TYPE SMA 2.9

Current Validity of Qualification		Page
Certificate	Valid Until	02-04
283A	December 2011	002

Types covered by similarity:

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/029 3401/041 3401/032	C&K COMPONENTS Dole France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Oct 1986
Extension	CNES	Oct 1988
Extension	CNES	Jun 1989
Extension	CNES	Sep 1991
Extension	CNES	Apr 1994
Extension	CNES	Jan 1997
Extension	CNES	Oct 1999
Extension	CNES	Apr 2003
Extension	CNES	Nov 2005
Extension	CNES	Aug 2007
Extension	CNES	Sep 2009

Characteristics:

Layout: 9 - 15 - 21- 25 - 31 - 37 - 51 Contacts

Non removable crimp contacts

Termination types:

Nickel or Gold Plated Shells

Operating Temperature Range (°C): -55 to +125

AWG #	ESCC No.	Max. Rated (A)
25	Uninsulated rigid wire Bent and straight PCB	1.5
26	3901 013 02 3901 002 56	2.5
28	3901 013 01 3901 002 61	1.5

ESCC European Space Components Coordination

QPL

CONNECTORS,
ELECTRICAL, RECTANGULAR, MICROMINIATURE,
CRIMP CONTACT,
BASED ON TYPE MDM

Current Validity of Qualification		Page
Certificate	Valid Until	02-05
140 K	September 2011	001-1

Types covered by similarity:

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3401 Detail ESCC 3401/031	C&K COMPONENTS Dole France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Oct 1986
Extension	CNES	Oct 1988
Extension	CNES	Jun 1989
Extension	CNES	Sep 1991
Extension	CNES	Apr 1994
Extension	CNES	Jan 1997
Extension	CNES	Oct 1999
Extension	CNES	Apr 2003
Extension	CNES	Nov 2005
Extension	CNES	Aug 2007
Extension	CNES	Sep 2009

Characteristics:

Shell sizes: 5 through 81 contacts

Non removable crimp contacts

Termination Types:

AWG #	ESCC No.	Max. Rated (A)
25	Uninsulated rigid wire Bent PCB	1.5
26	3901 013 02	2.5
28	3901 013 01	1.5

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination

QPL

CONNECTORS,
ELECTRICAL, MICROMINIATURE,
CRIMP CONTACT, SINGLE-IN-LINE,
BASED ON TYPE MTB

Current Validity of Qualification		Page
Certificate	Valid Until	02-05
141 K	September 2011	002-1

Types covered by similarity: Contact sizes 21, 31		Remarks:		
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 3401 Detail ESCC 3401/077 3401/078	C&K COMPONENTS Dole France	Qualification	CNES	Jun 2009

Characteristics: All variants are qualified

Range of contacts: 9 - 15 - 21- 25 - 31 - 37

Accepts wires AWG 26 and 28

Max. rating for 1 isolated contact:- uninsulated AWG 25 wire: 2.5 A
AWG 26 wire: 2.5 A
AWG 28 wire: 1.5 A

Nickel or Gold Plated Shells

150Vrms

Operating Temperature Range (°C): $^{-}$55 to $^{+}$125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, RECTANGULAR, MICROMINIATURE,
REMOVABLE CRIMP CONTACT,
BASED ON TYPE MDMA

Current Validity of Qualification		Page
Certificate	Valid Until	02-05
290	June 2011	003-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401 Detail ESCC 3401/081 3401/082 3401/083 3401/084	Souriau Connection Technology Marolles en Brie France	Qualification	CNES	Jun 2010

Characteristics:

3401/081: Shell variant 01 (glass-fibre reinforced thermoplastic), variant 02 (aluminium alloy). Contact arrangements 7, 25, 51, 104 contacts. Contact termination OL3 (straight PCB), 1A7N (90^0 PCB 2.54mm spacing), 1B7N (90^0 PCB 2.84mm spacing).
3401/082: Shell variant 01 (glass-fibre reinforced thermoplastic), variant 02 (aluminium alloy). Contact arrangements 7, 25, 51, 104 contacts.
3401/083: Contact variant 01 (male crimp barrel 26), 02 (female crimp barrel 26), 03 (male crimp barrel 24), 04 (female crimp barrel 24).
3401/084: Accessory variants 01 to 62.

Range of contacts: A-F-H-J or 7 - 25 - 51 - 104

Working voltage: U_R=150 Vrms

Operating Temperature Range (°C): $^{-}$55 to $^{+}$125

ESCC European Space Components Coordination
QPL

CONNECTORS,
ELECTRICAL, RECTANGULAR, MICROMINIATURE, REMOVABLE
AND NON-REMOVABLE, PCB PIN CONTACT,
BASED ON TYPE 8MCG

Current Validity of Qualification		Page
Certificate	Valid Until	02-05
301	June 2012	004-1

Section 03 **Component Type: Crystals**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
03-01			Crystals	
	03-01-001-1	33 J	TO-5 Can	RAKON (F)
	03-01-002	34 J	TO-8 Can	RAKON (F)

Types covered by similarity:	Remarks: Maintenance of qualification testing is under-way.

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3501 Detail ESCC 3501/001 3501/008 3501/011 3501/012 3501/018	RAKON France Argenteuil France	Qualification Extension Extension Extension Extension Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES	Oct 1979 Jun 1983 Oct 1986 Jul 1989 Jan 1995 Nov 1996 Apr 2000 Nov 2002 Jun 2005 Mar 2008

Characteristics: All variants are qualified.

TO-5 Can (T 807)

Frequency Range: 15 - 140 MHz

Types covered by similarity:	Remarks: Maintenance of qualification testing is under-way.

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3501 Detail ESCC 3501/002 3501/009 3501/019	RAKON France Argenteuil France	Qualification	CNES	Oct 1979
		Extension	CNES	Jun 1983
		Extension	CNES	Oct 1986
		Extension	CNES	Jul 1989
		Extension	CNES	Jan 1995
		Extension	CNES	Apr 1997
		Extension	CNES	Apr 2000
		Extension	CNES	Nov 2002
		Extension	CNES	Jun 2005
		Extension	CNES	Mar 2008

Characteristics: All variants are qualified.

TO-8 Can (T 1507)

Frequency Range: 2.5 - 20 MHz

04-02			Power Rectifier	
	04-02-001-3	297	Types 1N5806U and 1N5811U	STMicroelectronics
	04-02-002-1	272 C	Type STPS20H100	STMicroelectronics
	04-02-003-1	274 B	Types BYW-81, BYV52, BYV54	STMicroelectronics
04-05			RF/Microwave, Silicon Schottky	
	04-05-001-3	227 B	Schottky, BAS 70	Infineon
04-13			RF/Microwave, Varactors	
	04-13-003 1A-B	200 D	PIN and Varactors	Cobham MAL
	04-13-003-2	225 D	Varactor, DH 267	Chelton
	04-13-003-3	273 B	Varactor, Tuning, DH 76xxx	Chelton
04-16			RF/Microwave, PIN	
	04-16-002-2	224 C	PIN, BXY 42	Infineon
	04-16-002-4A-B	259 B	PIN, Fast Switching	Chelton
	04-16-003	236 C	PIN, BXY 43 and 44	Infineon

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5000 Detail ESCC 5101/013 5101/014	ST Microelectronics Rennes France	Qualification	CNES	Nov 2009

Characteristics: Variants 11 and 12 of 5101/013 and Variants 13 and 14 of 5101/014 are qualified

Type	V_{BR} (V)	V_F (Vmax)	I_R (µA) @ DC $V_R=V_{BR}$	I_{FSM} (A)	I_O (A) @ Tcase
1N5806	160	0.88 @ I_F=1A.	10	33	2.5
1N5811	160	0.9 @ I_F=4A	10	100	6

Operating Temperature Range (°C): $^{-}$65 to $^{+}$175
Package Types: LCC2-A for 5101/014 and LCC2-B for 5101/013

ESCC European Space Components Coordination
QPL

DIODES, POWER RECTIFIER,
BASED ON TYPES 1N5806 AND 1N5811

Current Validity of Qualification		Page
Certificate	Valid Until	04-02
297	November 2011	001-3

Types covered by similarity:	Remarks:
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Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5000 Detail ESCC 5106/016 5106/017 5106/018 5106/019	ST Microelectronics Rennes France	Qualification Extension Extension Extension	CNES CNES CNES CNES	Nov 2002 Mar 2006 Jul 2008 Feb 2009

Characteristics:

Maximum Ratings for 5106/016:

V_{RRM}:	100 V
I_O:	2 x 20 A
dV/dt	10 000 V/µs
T_J:	+ 175°C
Package Types	TO254, SMD.5 and SMD1

Operating Temperature Range (°C): -65 to +175

ESCC European Space Components Coordination

QPL

DIODES, POWER, SCHOTTKY BARRIER,
BASED ON TYPE STPS20H100

Current Validity of Qualification		Page
Certificate	Valid Until	04-02
272 C	February 2011	002-1A

Types covered by similarity:

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ESCC COMP. NO.	VARANTS	RANGE OF COMPONENTS	BASED ON
5106/016	01	TO254	STPS20100FSY
	02	TO254	STPS20100AFSY
	03	TO254	STPS20100CFSY
	04	TO254	STPS20100SFSY
	05	SMD.5	STPS20100S
	06	SMD1	STPS20100SA
	07	SMD1	STPS20100CSA
5106/017	01	SMD.5	STPS1045S
	02	SMD.5	STPS1045CS
5106/018	01	TO254	STPS6045CFSY
	02	SMD1	STPS6045CSA
5106/019	01	TO254	STPS40100C2FSY
	02	TO254	STPS40100C1FSY
	03	SMD1	STPS40100CSA

Types covered by similarity:	Remarks: Maintenance of qualification testing is under-way.
.	

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5000 Detail ESCC 5103/029 5103/030 5103/031	ST Microelectronics Rennes France	Qualification Extension Extension	CNES CNES CNES	Aug 2003 Mar 2006 Jul 2008

Characteristics:

5103/029 variants 01 to 05 are qualified
5103/030 variant 01 is qualified
5103/031 variant 01 to 05 are qualified
Maximum Ratings:

V_{RRM}:	200 V
I_O:	40 A for BYV 54-200, 30 A for BYV52-200, 15 and 30 A for BYW-81-200
T_J:	+ 150°C
Package Type	TO254, TO254AA and SMD0.5

Operating Temperature Range (°C): -55 to +150

ESCC European Space Components Coordination
QPL

DIODES, SILICON, POWER RECTIFIER,
HIGH EFFICIENCY, FAST RECOVERY,
BASED ON TYPES BYW81, BYV52 AND BYV54

Current Validity of Qualification		Page
Certificate	Valid Until	04-02
274 B	July 2010	003-1

Types covered by similarity: Variant 03

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Remarks: Maintenance of qualification testing is pending a completion of facility move.

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5512/020	INFINEON Technologies AG München Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Sep 1995
Extension	DLR	Jan 2000
Requalification	DLR	Mar 2008

Characteristics:

Maximum Ratings:

V_{RR}: -70 V

I_F: 70 mA

I_{FSM}: 85 mA_{pk} @ t<10ms, duty cycle=10%

D.C Parameters: I_R = 100 nA max @ V_R = -56 V
At room temp. V_{BR} = 70V min @ I_R = -10µA

V_{F1} = 0.44 V max. @ I_F = 1.0 mA
V_{F2} = 0.78 V max. @ I_F = 10 mA
V_{F3} = 1.00 V max. @ I_F = 15 mA

Package Type T1 P_{tot}=0.25W @ T_{case}= 125 °C

Operating Temperature Range (°C): -55 to +150

ESCC European Space Components Coordination
QPL

DIODES,
MICROWAVE, SILICON, SCHOTTKY, GENERAL PURPOSE,
BASED ON TYPE BAS 70

Current Validity of Qualification		Page
Certificate	Valid Until	04-05
227 B	March 2010	001-3

Types covered by similarity:	Remarks:
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Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5010 Detail ESCC See types covered by similarity	Cobham MAL Milton Keynes England	Qualification Extension Extension Extension Extension	DRA DERA QinetiQ QinetiQ BNSC	Dec 1993 Oct 1997 Mar 2002 Feb 2006 Nov 2008

Characteristics:

Operating Temperature Range (°C): -65 to +125 and 150

Types covered by similarity:

ESCC Spec. No.	Component Type
5513/007	ML4207 to ML 4209, variants 01-03, 06, 08-13, 17, 19, 21-27, 30, 32-37, 41, 43, 45-51, 54, 56-61, 65, 67, 69-72
5513/009	ML4610, ML4617 to ML4619, variants 01-03, 06, 08-13, 17, 19, 21-23, 25-28, 31, 33-38, 42, 44, 46-48, 50-53, 56, 58-63, 67, 69, 71-73, 75-78, 81, 83-88, 92, 94, 96-99
5513/010	ML4611, ML4612, ML4614, ML4615, variants 01-03, 06, 08-13, 17, 19, 21-23, 25-28, 31, 33-38, 42, 44, 46-48, 50-53, 56, 58-63, 67, 69, 71-73, 75-78, 81, 83-88, 92, 94, 96-99
5513/014	ML4622 to ML4624, variants 01-03, 06, 08-13, 17, 19, 21-23, 25-28, 31, 33-38, 42, 45-47, 49-52, 55, 57-58, 61, 63
5513/015	ML4627 to ML4629, variants 01-03, 06, 08-13, 17, 19, 21-23, 25-28, 31, 33-38, 42, 45-47, 49-52, 55, 57-58, 61, 63
5512/001	ML4402, ML4404 to ML4409 and ML40721, variants 01-03,05, 07-12, 14-18, 20, 22-27, 29-33, 35, 37-42, 44-48, 50, 52-57, 59-63, 65, 67-72, 74-78, 80, 82-84, 86, 88, 90-92
5512/003	ML4310 to ML4319, variants 01-02, 05-06, 09-13, 16-17, 20-24, 27-28, 31-35, 38-39, 42-46, 49-50, 53-57, 60-61, 64-68, 71-72, 75-79, 83-85, 89-91, 95
5512/004	ML4331 to ML4335, variants 01-02, 05-06, 09-13, 16-17, 20-24, 27-28, 31-35, 38-39, 42-46, 49-50, 53-55
5512/005	ML4336 to ML4343, variants 01-02, 06-08, 12-14, 18-20, 24-26, 30-32, 36-38, 42-44, 48
5512/006	ML4351 to ML4354, variants 01-02, 05-06, 09-13, 16-17, 20-24, 27-28, 31-35, 38-39, 42-44
5512/007	ML4355 to ML4365, variants 01-02, 06-08, 12-14, 18-20, 24-26, 30-32, 36-38, 42-44, 47-48, 51-52, 55-56

Types covered by similarity:	Remarks:
.	

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5512/016	CHELTON Les Ulis France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jun 1995
Extension	CNES	Aug 1998
Extension	CNES	Jun 2003
Extension	CNES	Mar 2007
Extension	CNES	Mar 2010

Characteristics: The variants are based on the following types

Variants	CT(max.)	Based on Type
10 to 15	0.4 pF	DH 267
16	0.5 pF	DH 267
20 to 25	0.6 pF	DH 292
26	0.7 pF	DH 292
30 to 35	1.2 pF	DH 256
36	1.3 pF	DH 256
40 to 45	2.1 pF	DH 252
46	2.2 pF	DH 252
50 to 55	7.1 pF	DH 294
56	7.2 pF	DH 294

Maximum Ratings: V_R = -15 V to –45 V

I_F = 250 to 1000 mA at T_{amb} = +75 °C

P_{tot} = +0.5 to 1.25 W at T_{amb}

Operating Temperature Range (°C): -55 to +150

ESCC European Space Components Coordination

QPL

DIODES,

MICROWAVE, SILICON, MULTPLIER VARACTOR

BASED ON TYPES DH 267 AND DH 294

Current Validity of Qualification		Page
Certificate	Valid Until	04-13
225 D	March 2012	003-2

Types covered by similarity: .	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5010 Detail ESCC 5512/023	CHELTON Les Ulis France	Qualification Extension Extension	CNES CNES CNES	Jun 2003 Mar 2007 Jun 2009

Characteristics: All variants are qualified.

Variants	C_j(typ.) (-4 V)	Based on Type
01 to 09	1.0 pF	DH 76010
10 to 18	1.50 pF	DH 76015
19 to 27	2.20 pF	DH 76022
28 to 36	2.30 pF	DH 76033
37 to 45	4.70 pF	DH 76047
46 to 54	6.80 pF	DH 76068
55 to 63	10.00 pF	DH 76100
64 to 72	15.00 pF	DH 76150

Maximum Ratings: V_R = 20 at I_R = 10 μA and T_{amb} = +25 °C

Operating Temperature Range (°C): -55 to +155

ESCC European Space Components Coordination
QPL

DIODES,
MICROWAVE, SILICON, HYPER-ABRUPT JUNCTION TUNING
VARACTOR
BASED ON TYPES DH 76xxx

Current Validity of Qualification		Page
Certificate	Valid Until	04-13
273 B	June 2011	003-3

Types covered by similarity: Variant 02 .	Remarks: Maintenance of qualification testing is pending a completion of facility move.

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5513/017	INFINEON Technologies AG München Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Jun 1995
Extension	DLR	Jan 2000
Extension	DLR	Jan 2004
Requalification	DLR	Mar 2008

Characteristics:

Maximum Ratings:

V_R: -50 V

I_{FM}: 5.0 A @ tp=1.0 μs, duty cycle = 0.001%

D.C Parameters: I_{R1} = 10 μA max @ V_R = -50 V
I_{R2} = 5 nA max @ V_R = -40 V
V_F = 1.1 V max. @ I_F = 100 mA

Package Type T1 P_D= 350mW

Operating Temperature Range (°C): -55 to +175

ESCC European Space Components Coordination
QPL

DIODES,
MICROWAVE, SILICON, PIN,
BASED ON TYPE BXY 42- MESA

Current Validity of Qualification		Page
Certificate	Valid Until	04-16
224 C	March 2010	002-2

Types covered by similarity:

.

Remarks: Maintenance of qualification testing is under-way.

New package BH 155 introduced

Procurement Specifications Issues in effect on certification date	Manufacturer
Generic ESCC 5010 Detail ESCC Please refer to the next page	CHELTON Les Ulis France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Mar 2000
Extension	CNES	Dec 2003
Extension	CNES	Feb 2008

Characteristics:

	V_{Rmax} @ I_R= 10µA	R_{SF} (Ω) (max.)	τ_L (ns)	C_T
DH 50033	- 30	1.8	40 max.	0.25
DH 50101	- 100	1.9	300 max.	0.19
DH 50151	- 150	2.0	160 min.	0.19
DH 50251	- 250	2.4	265 min.	0.19

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination

QPL

DIODES,

MICROWAVE, SILICON, PIN, FAST SWITCHING

Current Validity of Qualification		Page
Certificate	Valid Until	04-16
259 B	February 2010	002-4A

Types covered by similarity:

ESCC Spec. No.	Component Type
5513/031	DH 50151 to DH 50157, Variants 01 to 56
5513/032	DH 50033 to DH 50037, Variants 01 to 40
5513/033	DH 50201 to DH 50209, Variants 01 to 70
5513/034	DH 50251 to DH 50256, Variants 01 to 41
5513/036	DH 50052 to DH 50057, Variants 01 to 48
5513/037	DH 50071 to DH 50077, Variants 01 to 56
5513/038	DH 50101 to DH 50107, Variants 01 to 56

Types covered by similarity: .	Remarks: Maintenance of qualification testing is pending a completion of facility move.

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5513/030	INFINEON Technologies AG München Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Oct 1996
Extension	DLR	Jan 2000
Extension	DLR	Jan 2004
Requalification	DLR	Mar 2008

Characteristics:	Variants 01 - 08 are qualified.	
	BXY 43 (variants 01-04)	BXY 44 (variants 05-08)
Maximum Ratings:	V_R = -150 V	-200 V
	I_F = 400 mA P_D = 500 mW	
D.C Parameters:	I_R = 100 nA max @ V_R = -150 V V_F = 1.0 V max.	5 nA @ V_R = -100 V 1.05 V max. @ I_F = 100 mA
Package Type	T, T1, Teller, Pill, Flatpack	
Operating Temperature Range (°C): -55 to +150		

ESCC European Space Components Coordination
QPL

DIODES,
MICROWAVE, SILICON, PIN, PLANAR
BASED ON TYPES BXY 43 AND 44

Current Validity of Qualification		Page
Certificate	Valid Until	04-16
236 C	March 2010	003

Section 05 **Component Type: Filters**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
05			Feedthrough	
	05-01-001-A-B	252 D	Types SFC, SFL, SFP	Eurofarad

Types covered by similarity:	Remarks: Maintenance activities are ongoing.
.	

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3008 Detail ESCC Please refer to the next page	EUROFARAD Lagny sur Marne France	Qualification Extension Extension Extension Extension	CNES CNES CNES CNES CNES	Aug 1998 Apr 2001 Nov 2003 Mar 2006 Jun 2008

Characteristics:

All variants specified in the Detail Specifications are qualified.

Operating Temperature Range (°C): -55 to +125

Types covered by certificate:

Style	Detail Specification	Variants	Capacitance Range (nF)	Rated Current (A)	Rated Voltage (V)
SFP 040	3008/014	01 to 40	0.75 to 44.8	10 (DC 7 LF)	70 to 250
SFP 060	3008/021	01 to 14	2.4 to 89.6	10	35 to 500
SFP 035	3008/025	01 to 20	2.4 to 35.2	10	35 to 200
SFP 100	3008/028	01 to 06	0.16 to 1312.0	10	50 to 300
SFP 060	3008/030	01 to 28	2.4 to 89.6	10	35 to 500
Capacitance Range (pF)					
SFC 030	3008/020	01 to 12	470 to 22000	1.0 to 5.0	25 to 200
SFC 060	3008/026	01 to 06	680 to 220000	10	25 to 200
SFC 100	3008/027	01 to 06	1000 to 1000000	10	25 to 200
SFC 035	3008/031	01 to 06	470 to 22000	10	25 to 200
SFC 040	3008/032	01 to 12	470 to 22000	10	25 to 200
SFC 060	3008/033	01 to 12	680 to 220000	10	25 to 200
Capacitance Range (nF)					
SFL 100	3008/029	01 to 48	17.6 to 1600	5, 10, 15	40 to 300

Section 06 **Component Type: Fuses**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
06-01	001	284	Type MGA-S	Schurter

Types covered by similarity:		Remarks:		
Variants 02 to 09				
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 4008 Detail ESCC 4008/001	Schurter Lucerne Switzerland	Qualification	ESTEC	Jun 2008

Characteristics: Variants 01 to 12 are qualified.

Rated Voltage (VAC or VDC): 125/125, 63/125 and 32/125 by variant

Rated Current (VAC and VDC): 0.14 to 3.5 A 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 $\leq$ 1 ms

Variants 01 to 10: 300, Variants 11 and 12: 50

Operating Temperature Range, (°C): -50 to +125 (90% I_R to 107% I_R)

ESCC European Space Components Coordination

QPL

FUSES,
SURFACE MOUNT, THIN FILM,
0.14 TO 3.5 AMPS,
BASED ON TYPE MGA-S

Current Validity of Qualification		Page
Certificate	Valid Until	06-01
284	June 2010	001

Section 07 **Component Type: Inductors**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
07-01			Fixed, RF	
	07-01-001	241 D	Types MSCI, 10000, 12000, 20000	Microspire
07-02			Power	
	07-02-002	276 A	Types SESI	Microspire

Types covered by similarity:

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Remarks: Maintenance activities to validate the subcontracting of the winding operation.

Procurement Specifications	Manufacturer
Generic ESCC 3201 Detail ESCC 3201/008	MICROSPIRE Illange France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Apr 1997
Extension	CNES	Nov 2000
Extension	CNES	Mar 2003
Extension	CNES	Dec 2005
Extension	CNES	Jun 2008

Characteristics: Variants 01 to 05 are qualified

Series No.	Range (μH)	Tolerance (±%)	Q min.	Min. SRF f_r (MHz)	Max. DCR, R_{dc} (Ω)	Rated DC Current, I_R (mA)	Case Size
10k	0.010-10	2.0, 5.0, 10	60 - 42	1000 - 33	0.025 - 3.3	750 - 87	A
12k	12 - 1000	2.0, 5.0, 10	56 - 12	26 - 1.5	2.0 - 120	110 - 15	B
20k	0.010 - 1000	10	75 - 30	1000 - 1.7	0.04 - 80	1000 - 25	C
H01	0.380 - 100	15	N/A	N/A	0.016 - 3.3	1500 - 100	C

Dielectric Withstanding Voltage (DWV): 200 Vrms

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination

QPL

INDUCTORS, FIXED, RF, MINIATURE, MOULDED,
SURFACE MOUNT,
BASED ON SERIES MSCI 10k, 12k, 20k and H01

Current Validity of Qualification		Page
Certificate	Valid Until	07-01
241 D	June 2010	001

Types covered by similarity: All other variants in the range.

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Remarks: Maintenance activities are ongoing.

Procurement Specifications	Manufacturer
Generic ESCC 3201 Detail ESCC 3201/009	MICROSPIRE Illange France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Apr 2004
Extension	CNES	May 2007

Characteristics: Variants 01 to 05 are qualified

Series No.	Range (µH)	Tolerance (±%)	Max. DCR, R_{dc} (Ω)	Rated DC Current, I_R (A)	Peak Current, I_P (A)
14	3.3 - 330	10, 20	15 - 1575	5.8 - 0.57	8.0 - 0.8
15, 15W	1.5 - 330	10, 20, 30	5.0 - 630	14 - 0.74	19 - 1.0
18	6.8 - 330	10, 20	7.5 - 250	110 - 15	13.6 - 1.9
9.1	1.0 - 1000	10, 20, 30	8.5 - 5865	6.0 - 0.2	11.0 - 0.34

Inductance measured at 0.25V, 100kHz.
Peak current is the maximum current for a square pulse of duration <10s
Dielectric Withstanding Voltage (DWV): 500 Vrms

Operating Temperature Range (°C): -55 to +125

ESCC European Space Components Coordination
QPL

INDUCTORS, POWER, MOULDED,
SURFACE MOUNT,
BASED ON SERIES SESI

Current Validity of Qualification		Page
Certificate	Valid Until	07-02
276 A	May 2009	002

Section 08 **Component Type: Microcircuits**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
08-80			Digital C-MOS	
	08-80-001-2 A to E	73 M	4000 B Series	ST Microelectronics
	08-80-002-2 A to F	190 H	54HCMOS Series	ST Microelectronics

Types covered by similarity: See next pages .		Remarks: Refer to: https://escies.org/public/escc/comp_no.html for information concerning the ESCC Component Number and its marking.		
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 9000 Detail ESCC See types covered by similarity	ST Microelectronics Rennes France	Qualification Extension Extension Extension Extension Extension Extension Extension Extension Extension Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES	Apr 1981 Jan 1981 Dec 1984 May 1987 Apr 1990 Oct 1992 Apr 1995 Apr 1997 Apr 1999 May 2001 Nov 2002 Nov 2005 Feb 2008 May 2010
Characteristics: Package Types: Ceramic Dual-in-Line Ceramic Flat Pack				

Types covered by similarity:		
ESCC Spec. No.	Component Type	Component Type
9201/041	Quad 2-input NOR gate	4001B
9201/042	Dual 4-input NOR gate	4002B
9202/039	4-bit full adder	4008B
9201/043	Quad 2-input NAND gate	4011B
9201/044	Dual 4-input NAND gate	4012B
9203/023	Dual D-type flip-flop	4013B
9306/014	8-stage synchronous static shift register	4014B
9306/015	Dual 4-stage static shift register with serial input/parallel input	4015B
9202/050	Quad bilateral switch	4016B
9204/020	Decade counter/divider	4017B
9204/021	Presettable divide-by-N counter	4018B
9202/051	Quad AND/OR select gate	4019B
9204/022	14-stage ripple carry binary counter/divider	4020B
9306/016	8-stage static shift register	4021B
9204/023	Octal counter/divider	4022B
9201/045	Triple 3-input NAND gates	4023B
9204/024	7-stage ripple carry binary counter/divider	4024B
9201/046	Triple 3-input NOR gate	4025B
9406/001	Ripple carry decade counter/divider	4026B
9203/022	Dual J-K master slave flip-flop	4027B

Types covered by similarity:		
ESCC Spec. No.	Component Type	Component Type
9205/010	BCD-to-decimal or binary-to-octal decoder	4028B
9204/025	Presettable up/down counter binary or BCD decade	4029B
9201/047	Quad 2-input exclusive OR gates	4030B
9306/017	64-stage static shift register	4031B
9306/025	8-stage static bidirectional parallel/serial input/output bus register with 3 state output	4034B
9306/018	4-bit universal shift register	4035B
9204/026	12-stage ripple carry binary counter/divider	4040B
9202/040	Quad true/complement buffer with unbuffered outputs	4041UB
9202/041	Quad clocked D latch	4042B
9202/042	Quad NOR 3-state R/S latches	4043B
9202/043	Quad NAND 3-state R/S latch	4044B
9202/044	Micropower phase-locked loop	4046B
9207/003	Low power monostable/astable multivibrator	4047B
9202/045	Hex buffer/converter (inverting type)	4049UB
9202/046	Hex buffer/converter (non-inverting type)	4050B
9202/047	Analogue multiplexer/demultiplexer	4051B
9202/048	Analogue multiplexer/demultiplexer	4052B
9202/049	Triple 2-channel analogue multiplexer/demultiplexer	4053B
9209/001	4-bit magnitude comparator	4063B
9204/052	14-stage ripple-carry binary counter/divider and oscillator	4060B

Types covered by similarity:		
ESCC Spec. No.	Component Type	Component Type
9408/005	Quad bilateral switch	4066B
9408/009	Analogue multiplexer/demultiplexer	4067B
9201/061	8-input NAND gate	4068B
9401/010	Hex inverter	4069UB
9201/048	Quad exclusive OR gate	4070B
9201/063	Quad 2-input OR gate	4071B
9201/082	Dual 4-input OR gate	4072B
9201/064	Triple 3-input AND gate	4073B
9201/065	Triple 3-input OR gate	4075B
9306/022	4-bit D-type register with 3-state output	4076B
9201/055	Quad exclusive NOR gate	4077B
9201/062	8-input OR/NOR gate	4078B
9201/052	Quad 2-input AND gate	4081B
9201/066	Dual 4-input AND gate	4082B
9201/067	Dual 2-wide 2-input AND/OR inverter gate	4085B
9409/002	Quad 2-input NAND gate with Schmitt trigger input	4093B
9306/026	8-stage shift and store bus register with synchronous serial outputs and 3-state parallel output	4094B
9206/003	Dual monostable multivibrator	4098B
9202/058	8-bit addressable latch	4099B
9401/006	Strobed hex inverter/buffer	4502B

Types covered by similarity:

ESCC Spec. No.	Component Type	Component Type
9401/030	Hex non-inverting buffers with 3-state output	4503B
9202/063	Dual 4-bit latch with 3-state output	4508B
9408/006	8-channel multiplexer with 3-state output	4512B
9408/012	4-bit latch/4-to-16 decoder	4514B
9205/011	4-bit latch/4-to-16 line decoder	4515B
9204/045	Synchronous quad presettable up/down binary counter	4516B
9204/028	Dual binary up counter	4520B
9202/065	8-bit priority encoder	4532B
9207/007	Dual monostable multivibrator with reset	4538B
9408/011	Dual 1-of-4 decoder/demultiplexer	4555B
9408/025	Dual 1-of-4 decoder/demultiplexer (output low on select)	4556B
9204/036	Presettable 8-bit synchronous down-counter	40103B
9306/033	FIFO register with 3-state output	40105B
9409/005	Hex Schmitt-trigger	40106B
9401/013	Dual 2-input NAND buffer/driffer	40107B
9407/003	Quad low-to-high 3-state voltage level shifter	40109B
9204/054	Programmable 4-bit binary counter with asynchronous clear	40161B
9204/046	Programmable 4-bit binary counter with synchronous clear	40163B
9203/038	Hex D-type flip-flop	40174B
9204/041	Presettable binary up/down counter (dual clock with reset)	40193B
9408/017	Quad 2-lin-to-1-line data selector/multiplexer with 3-state output	40257B

Types covered by similarity: See next pages .		Remarks: Refer to: https://escies.org/public/escc/comp_no.html for information concerning the ESCC Component Number and its marking.		
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 9000 Detail ESCC See types covered by similarity	ST Microelectronics Rennes France	Qualification Extension Extension Extension Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES	Nov 1992 Apr 1995 Apr 1997 Apr 1999 May 2001 Nov 2002 Nov 2005 Feb 2008 May 2010

Characteristics:

Qualified Packages:

- Ceramic Dual-in-Line
- Ceramic Flat Pack

NOTES

1. These parts have successfully passed radiation testing to 50 kRads.

Types covered by similarity:			
ESCC Spec. No.	Component Type	Component Type	Note
9201/105	Quad 2-input NAND gate	54HC 00	1
9201/113	Quad 2-input NOR gate	02	1
9201/114	Quad 2-input NAND gate with open drain output	03	1
9401/033	Hex inverter	04	1
9201/106	Quad 2-input positive AND gate	08	1
9201/107	Triple 3-input NAND gate	10	1
9201/117	Triple 3-input AND gate	11	1
9409/007	Hex Schmitt trigger inverter	14	1
9201/118	Dual 4-input NAND gate	20	1
9201/108	Dual 4-input AND gate	21	1
9201/109	Triple 3-input NOR gate	27	1
9201/110	8-input NAND gate	30	1
9201/111	Quad 2-input OR gate	32	1
9203/071	Dual negative-edge triggered J-K flip-flops with clear	73	1
9203/050	Dual D-type flip-flop with preset and clear	74	1
9203/065	Quad 4-bit bistable D-type latch	75	1
9209/004	4-bit magnitude comparator	85	1
9201/119	Quad 2-input exclusive OR gate	86	1
9203/072	Dual J-K negative-edge triggered flip-flop with direct clear	107	1

Types covered by similarity:			
ESCC Spec. No.	Component Type	Component Type	Note
9306/048	Dual J-K positive edge triggered flip-flop with preset and clear	54HC 109	1
9203/051	Dual J-K negative edge triggered flip-flop with preset and clear	112	1
9207/006	Dual positive or negative edge Schmitt-retriggerable monostable multivibrator with clear	123	1
9401/039	Quad bus buffer with 3 state output	125	1
9401/046	Quad bus buffer with 3 state output	126	1
9201/120	Quad 2-input NAND gate with Schmitt-trigger input	132	1
9205/013	3-to-8 line decoder/demultiplexer with address latch and inverted output	137	1
9408/046	3-to-8 line decoder/demultiplexer with inverted output	138	1
9205/017	Dual 2-to4 line decoder/demultiplexer with inverted output	139	1
9410/017	8-line to 3-line priority encoder	148	1
9408/054	8-line to 1-line data selector/multiplexer	151	1
9408/038	Dual 4-line to 1-line data selectors/multiplexer	153	1
9205/023	4-to-16 line decoder/demultiplexer with inverted output	154	1
9408/057	Quad 2-line to 1-line data selector/multiplexer	157	1
9408/059	Quad 2-line to 1-line data selector/multiplexer with inverted output	158	1
9204/062	Synchrorous presettable 4-bit decade counter with direct clear	160	1
9204/059	Asynchronous 4-bit binary counter	161	1
9204/073	Synchronous 4-bit binary counter	163	1
9306/041	8-bit SIPO shift register	164	1
9306/042	8-bit PISO shift register	165	1

Types covered by similarity:			
ESCC Spec. No.	Component Type	Component Type	Note
9306/043	8-bit PISO shift register	54HC 166	1
9306/052	Hex D-type edge-triggered flip-flop with clear	174	1
9203/052	Quad D-type edge-triggered flip-flop with clear	175	1
9204/066	Synchronous 4-bit up/down binary counter	191	1
9204/065	Synchronous 4-bit up/down binary counter (dual clock with clear)	193	1
9306/047	4-bit PIPO shift register	194	1
9306/053	4-bit PIPO shift register with overriding clear	195	1
9205/021	3-line to 8-line decoder/demultiplexer with address latch	237	1
9401/034	Octal bus buffer with inverted 3-state output	240	1
9401/035	Octal bus buffer with 3-state output	241	1
9405/011	Quad bus transceiver with inverted 3-state output	242	1
9405/012	Quad bus transceiver with 3-state output	243	1
9401/048	Octal bus buffer with 3-state output	244	1
9405/013	Octal bus transceiver with 3-state output	245	1
9408/048	1-to-8 data selector/multiplexer with 3-state output	251	1
9408/058	Dual 4-line to 1-line data selector/multiplexer with 3-state output	253	1
9408/047	Quad 2-line to 1-line data selector/multiplexer with 3-state output	257	1
9203/073	8-bit addressable latch	259	1
9203/053	Octal D-type edge-triggered flip-flop with clear	273	1
9208/003	9-bit odd/even parity generator/checker	280	1

Types covered by similarity:			
ESCC Spec. No.	Component Type	Component Type	Note
9202/075	4-bit binary full adder with fast carry	54HC 283	1
9401/052	Hex bus buffer with 3-state output	365	1
9401/044	Hex bus buffer with 3-state output	367	1
9203/059	Octal D-type transparent latch with 3-state output	373	1
9203/060	Octal D-type edge-triggered flip-flop with 3-state output	374	1
9201/121	Quad 2-input exclusive OR gate	386	1
9204/074	Dual 4-bit negative edge-triggered binary counter	393	1
9401/049	Octal bus buffer with inverted 3-state output	540	1
9401/047	Octal bus buffer with 3-state output	541	1
9202/072	Octal D-type transparent latch with 3-state output	573	1
9203/054	Octal D-type edge-triggered flip-flop with 3-state output	574	1
9204/071	8-bit binary counter with 3-state output register	590	1
9306/051	8-bit shift register with 3-state output register	595	1
9306/054	8-bit PISO shift register	597	1
9209/005	8-bit identify comparator	688	1
9201/130	Dual 4-input NOR gate	4002	1
9204/070	Asynchronous negative-edge-triggered 14-bit binary counter	4020	1
9204/069	Asynchronous negative edge-triggered 12-bit binary counter	4040	1
9401/037	Hex buffer/converter with inverted output	4049	1
9401/038	Hex buffer/converter	4050	1

Types covered by similarity:

ESCC Spec. No.	Component Type	Component Type	Note
9408/064	Analogue multiplexer/demultiplexer	54HC 4051	1
9408/065	Analogue multiplexer/demultiplexer (triple 2-channel)	4053	1
9204/076	Asynchronous negative-edge-triggered 14-bit binary counter and oscillator	4060	1
9408/052	Quad bilateral switch	4066	1
9201/124	Dual 4-input OR gate	4072	1
9201/129	Triple 3-input OR gate	4075	1
9201/123	8-input OR/NOR gate	4078	1
9306/050	8-bit SIPO shift latch register with 3-state output	4094	1
9205/019	4-to-16 line decoder/latch	4514	1
9203/070	Dual D-type flip-flop with preset and clear	54HCT 74	1
9401/045	Octal buffer with inverted 3-state output	240	1
9402/009	Octal bus buffer with 3-state output	244	1
9405/014	Octal bus transceiver with 3-state output	245	1
9203/064	Octal D-type transparent latch with 3-state output	373	1
9203/066	Octal D-type edge-triggered flip-flop with 3-state output	374	1
9401/055	Hex inverter (single stage) with unbuffered output	54HCU04	1

Section 09 **Component Type: Relays**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
09-01			Non-Latching 28Vdc Contact Rating	
	09-01-001	102 E	Type T**	REL STPI
	09-01-002	02 K	Type GP5	LEACH
	09-01-005	239 D	Type E	LEACH
	09-01-006	279	Type 317	STPI
09-02			Latching, 28Vdc Contact Rating	
	09-02-001	88 F	Type TL	REL STPI
	09-02-002	13 K	Type GP2	LEACH
	09-02-006	240 D	Type D	LEACH
	09-02-007	280	Type 3*7B	STPI
09-03			Latching, 50Vdc Contact Rating	
	09-03-001	93 J	Type GP250	LEACH

Types covered by similarity:

Rated Coil Voltages 5, 6, 9, 12 and 18 Vdc

.

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3601 Detail ESCC 3601/002	REL-STPI Saint Jean de la Ruelle France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1983
Extension	CNES	Dec 1985
Extension	CNES	Dec 1988
Extension	CNES	Jan 1993
Extension	CNES	Nov 1997
Re-qualification	CNES	Oct 2009

Characteristics: Variants 01 to 06 are qualified

Contact Rating	1A at 28Vdc
Contact Configuration	2PDT
Package Type	TO-5 Can
Coil Voltage	5- 26.5Vdc

Operating Temperature Range (°C): $^{-}$65 to $^{+}$125

ESCC European Space Components Coordination

QPL

RELAY,

NON-LATCHING, ELECTROMAGNETIC,

TYPE T **

Current Validity of Qualification

Certificate	Valid Until
102 E	October 2011

Types covered by similarity:

Coil Voltages 6 and 12 Vdc

.

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3601 Detail ESCC 3601/003	LEACH International Europe Niort France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Apr 1978
Extension	CNES	Oct 1980
Extension	CNES	Jan 1984
Extension	CNES	Oct 1986
Extension	CNES	Jul 1992
Extension	CNES	Jun 1995
Extension	CNES	Dec 1998
Extension	CNES	Nov 2001
Extension	CNES	Jun 2005
Extension	CNES	Feb 2008
Extension	CNES	Apr 2010

Characteristics: Variants 01 to 08 are qualified

Contact Rating	2 A at 28 Vdc
Contact Configuration	2 PDT
Package Type	Half-crystal can
Coil Voltage	26.5 Vdc

Operating Temperature Range (°C): -65 to +125

ESCC European Space Components Coordination

QPL

RELAY,

NON-LATCHING, ELECTROMAGNETIC,

TYPE GP 5

Current Validity of Qualification		Page
Certificate	Valid Until	09-01
02 K	April 2012	002

Types covered by similarity:

Coil Voltages 6 and 12 Vdc
.

Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3601 Detail ESCC 3601/012	LEACH International Europe Niort France	Qualification Extension Extension Extension Extension	CNES CNES CNES CNES CNES	Apr 1997 Sep 2000 Jan 2004 Feb 2008 Apr 2010

Characteristics: Variants 01 to 11 are qualified

Contact Rating	1 A at 28 Vdc
Contact Configuration	2 PDT
Package Type	1/6 crystal can
Coil Voltage	26.5 Vdc

Operating Temperature Range (°C): -65 to +125

ESCC European Space Components Coordination
QPL

RELAY,
NON-LATCHING, ELECTROMAGNETIC,
TYPE E

Current Validity of Qualification		Page
Certificate	Valid Until	09-01
239 D	April 2012	005

Types covered by similarity: Coil voltages 6 and 12 Vdc .		Remarks: Maintenance of qualification testing is under-way		
Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3601 Detail ESCC 3601/007	STPI Paris France	Qualification	CNES	Apr 2007
Characteristics: Variants 01 to 06 are qualified Contact Rating 15 A at 28 Vdc Contact Configuration 2 PDT Size (mm. max.) 26x26x14 Package Type 1/2 can Coil Voltage 28 Vdc Operating Temperature Range (°C): -65 to +125				

ESCC QPL	RELAY, NON-LATCHING, ELECTROMAGNETIC, TYPE 317	Current Validity of Qualification		Page
		Certificate	Valid Until	09-01
		279	April 2009	006

Types covered by similarity:

Rated Coil Voltages 5, 6, 9, 12 and 18 Vdc

.

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3602 Detail ESCC 3602/002	REL-STPI Saint Jean de la Ruelle France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jan 1982
Extension	CNES	Oct 1983
Extension	CNES	Oct 1986
Extension	CNES	Nov 1989
Extension	CNES	Jan 1993
Requalification	CNES	Nov 1997
Requalification	CNES	Jan 2010

Characteristics: Variants 01 to 06 are qualified

Contact Rating	1 A at 28 Vdc
Contact Configuration	2 PDT
Package Type	TO-5 Can
Coil Voltage	26.5 Vdc

Operating Temperature Range (°C): $^{-}$65 to $^{+}$125

ESCC European Space Components Coordination

QPL

RELAY,
LATCHING, ELECTROMAGNETIC,
TYPE TL

Current Validity of Qualification		Page
Certificate	Valid Until	09-02
88 F	January 2012	001

Types covered by similarity: Coil Voltages 6 and 12 Vdc .		Remarks:		
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 3602 Detail ESCC 3602/003	LEACH International Europe Niort France	Qualification Extension Extension Extension Extension Extension Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES CNES	Jan 1979 Feb 1981 Jan 1984 Oct 1986 Jul 1992 Jun 1995 Dec 1998 Nov 2001 Jun 2005 Feb 2008 Apr 2010
Characteristics: Variants 01 to 08 are qualified Contact Rating 2 A at 28 Vdc Contact Configuration 2 PDT Package Type Half-size crystal can Coil Voltage 26.5 Vdc Operating Temperature Range (°C): -65 to +125				

		Current Validity of Qualification		Page
ESCC European Space Components Coordination QPL	RELAY, LATCHING, ELECTROMAGNETIC, TYPE GP 2	Certificate	Valid Until	09-02
		13 K	April 2012	002

Types covered by similarity:

Coil Voltages 6 and 12 Vdc
.

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3602 Detail ESCC 3602/019	LEACH International Europe Niort France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Apr 1997
Extension	CNES	Sep 2000
Extension	CNES	Jan 2004
Extension	CNES	Feb 2008
Extension	CNES	Apr 2010

Characteristics:

Contact Rating	1 A at 28 Vdc
Contact Configuration	2 PDT
Package Type	1/6 crystal can
Coil Voltage	26.5 Vdc

Operating Temperature Range (°C): -65 to +125

ESCC European Space Components Coordination
QPL

RELAY,
LATCHING, ELECTROMAGNETIC,
TYPE D

Current Validity of Qualification		Page
Certificate	Valid Until	09-02
240 D	April 2012	006

Types covered by similarity: Coil Voltages 6 and 12 Vdc .	Remarks: Maintenance of qualification testing is under-way

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3602 Detail ESCC 3602/004 3602/009	STPI Paris France	Qualification	CNES	Apr 2007

Characteristics:	Variants 01 to 09 and 11 to 19 are qualified		
3602/004		3602/009	
Contact Rating	15 A at 28 Vdc	Contact Rating	15 A at 28 Vdc
Contact Configuration	4 PDT	Contact Configuration	2 PDT
Size (mm. max.)	26x26x26	Size (mm. max.)	26x26x13.34
Package Type	can	Package Type	1/2 can
Coil Voltage	28 Vdc	Coil Voltage	28 Vdc
Operating Temperature Range (°C): -65 to +125		Operating Temperature Range (°C): -65 to +125	

ESCC European Space Components Coordination
QPL

RELAY,
NON-LATCHING, ELECTROMAGNETIC,
TYPE 3*7B

Current Validity of Qualification		Page
Certificate	Valid Until	09-02
280	April 2009	006

Types covered by similarity:

Coil Voltage 12 Vdc

.

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3602 Detail ESCC 3602/010	LEACH International Europe Niort France

Nature of Approval	Supervising Authority	Date
Qualification	ESTEC	Feb 1982
Extension	CNES	Jul 1984
Extension	CNES	Sep 1987
Extension	CNES	Jul 1992
Extension	CNES	Jun 1995
Extension	CNES	Dec 1998
Extension	CNES	Nov 2001
Extension	CNES	Jun 2005
Extension	CNES	Feb 2008
Extension	CNES	Apr 2010

Characteristics: Variants 01 to 08 are qualified

Contact Rating 2 A at 50 Vdc (100000 ops)

Contact Configuration 2 PDT

Package Type Half-size crystal can

Coil Voltage 26.5 Vdc

Operating Temperature Range (°C): -65 to +125

ESCC European Space Components Coordination

QPL

RELAY,

LATCHING, ELECTROMAGNETIC,

TYPE GP 250

Current Validity of Qualification		Page
Certificate	Valid Until	09-03
93 J	April 2012	001

Section 10 **Component Type: Resistors**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
10-02			Fixed, Film, High Precision	
	10-02-001	116 K	Type RNC 90	Vishay S.A. Sfernice
10-07			Shunts	
	10-07-001	285	Types SMP, SMS, SMT	Isabellenhütte
10-08			Fixed, Film	
	10-08-006	256 E	Surface Mount, Type MS1	Vishay Electronic (Selb)
	10-08-007	289	Surface Mount, Type TNPS	Vishay Electronic (Selb)
10-09			Chip	
	10-09-002	265 C	Type P HR	Vishay S.A. Sfernice
10-11			Flexible, Foil, Heaters	
	10-11-001-1	184 H	Single & Double Layer	IRCA

Types covered by similarity:

Tolerance (±%) = 0.02, 0.05, 0.1, 0.2, 0.5, 1%

Remarks: New package fabrication is now located at Nice.

Procurement Specifications	Manufacturer
Generic ESCC 4001 Detail ESCC 4001/011	VISHAY S.A. Division Sfernice Nice France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Dec 1983
Extension	CNES	Oct 1986
Extension	CNES	Nov 1989
Extension	CNES	Jul 1992
Requalification	CNES	Apr 1994
Extension	CNES	Sep 1996
Extension	CNES	Jan 1999
Extension	CNES	Jul 2001
Extension	CNES	Nov 2003
Extension	CNES	Apr 2006
Extension	CNES	Sep 2008

Characteristics: Variants 03, 04, 07 and 08 are qualified
E192 Value Series, Critical R = 180 kΩ

Style	Detail Spec.	Range (Ω)	Tol. (±%)	TC (±ppm/°C)	Power Rating (W)	Max. Voltage (V)
RNC 90 (RS92N)	4001/011	50 - 100k	0.02 0.05 0.5 1.0	±5, ≤ 125 °C ±10, ≤ 125 °C ±10, > 125 °C and ≤ 175 °C	0.5 @ 70 °C 0.3 @ 125 °C	300

Operating Temperature Range, (°C): -55 to +175

ESCC European Space Components Coordination
QPL

RESISTORS,
FILM, FIXED, NON-HERMETICALLY SEALED,
BASED ON TYPE RNC 90

Current Validity of Qualification		Page
Certificate	Valid Until	10-02
116 K	September 2010	001

Types covered by similarity:

Tolerance (%) = ±1

Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4001 Detail ESCC 4001/027	ISABELLENHÜTTE HEUSLER GmbH & Co. KG Dillenburg Germany	Qualification	DLR	Nov 2008

Characteristics: Variants 01, 02 and 03 are qualified

Style	Detail Spec. Variant	Range (Ω)	Tol. (±%)	TC (± 10^{-6}/°C) Applicable to All Variants	Power Rating (W)
SMP- 2010	001	0.005-1.000	0.5	-100, +0 over T_{amb}= -55 to $^{+}$22 °C	1
SMS- 2512	002	0.003-1.000	0.5	±60 over T_{amb}= +22 to $^{+}$170 °C	2
SMT- 2817	003	0.004-2.000	0.5	±50 over T_{amb}= -55 to $^{+}$60 °C	3

Operating Temperature Range, (°C): -55 to $^{+}$170

ESCC European Space Components Coordination

QPL

RESISTORS,

FIXED, CHIP, METAL FOIL,

BASED ON TYPES SMP-PW, SMS-PT AND SMT-PT

Current Validity of Qualification		Page
Certificate	Valid Until	10-07
285	November 2010	001

Types covered by similarity:

Tolerance (±%) = 0.1, 0.5, 1.0

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 4001 Detail ESCC 4001/022	VISHAY Electronic GmbH Division Draloric Selb Germany

Nature of Approval	Supervising Authority	Date
Qualification	DLR	Oct 1999
Extension	DLR	Oct 2001
Extension	DLR	Oct 2003
Extension	DLR	Nov 2005
Extension	DLR	Oct 2007
Extension	DLR	Oct 2009

Characteristics: Variants 01 to 08 inclusive are qualified
Critical R = 160 kΩ

Range (Ω)	Tol. (±%)	TC (±ppm/°C)	Value Series
43.2 - 1.004 M 10.0 - 1.004 M 2.20 - 5.114 M	0.1 0.5 1.0	50	E96
43.2 - 1.004 M 10.0 - 1.004 M 10.0 - 1.004 M	0.1 0.5 1.0	25	E96
43.2 - 0.2213 M 10.0 - 0.5113 M	0.1 0.5	15	E96

Operating Temperature Range, (°C): -55 to +125

ESCC European Space Components Coordination
QPL

RESISTORS,
FILM, FIXED, SURFACE MOUNT, NON-HERMETICALLY SEALED,
BASED ON TYPE MS1

Current Validity of Qualification		Page
Certificate	Valid Until	10-08
256 E	October 2011	006

Types covered by similarity:
Temperature Coefficient (±ppm/°C): 25, 50
Tolerance (±%) = 0.5, 1.0

Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4001 Detail ESCC 4001/029	VISHAY Electronic Division Draloric Selb Germany	Qualification	DLR	May 2009

Characteristics: Variants 01 to 03 inclusive are qualified
E96 Series

Variants	Style	Range (Ω)			Tol. (±%)	TC (±ppm/°C)	Critical R (Ω)
01	0603	10	-	0.221 M	0.1	15	56.25
02	0805	10	-	0.422 M	0.1	15	180
03	1206	10	-	1 M	0.1	15	160

Operating Temperature Range, (°C): -55 to +125

ESCC European Space Components Coordination
QPL

RESISTORS,
FILM, FIXED, SURFACE MOUNT, NON-HERMETICALLY SEALED,
BASED ON TYPE TNPS

Current Validity of Qualification		Page
Certificate	Valid Until	10-08
289	May 2011	007

Types covered by similarity:

Tolerance (±%)	R ≤ 100 Ω	± 0.1/0.05 %
	100 < R ≤ 250 Ω	± 0.1/0.05/0/02 %
	R > 250 Ω	± 0.1/0.05/0.02/0.01 %

Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4001 Detail ESCC 4001/023	VISHAY S.A. Division Sfernice Nice France	Qualification Extension Extension Extension	CNES CNES CNES CNES	May 2001 Oct 2003 Feb 2006 May 2008

Characteristics: Variants 01, 02 and 03 are qualified

Style	Range (Ω)	Tol. (±%)	TC (±ppm/°C)	Critical R (Ω)	Rated Dissipation (W)	Type Variant
0603	50 - 0.2 M	0.01, 0.02, 0.05	±10, ±25	12.25k	0.1	01
0805	50 - 0.25 M	0.01, 0.02, 0.05	±10, ±25	45k	0.125	02
1206	50 - 1.0 M	0.01, 0.02, 0.05	±10, ±25	40k	0.25	03

Operating Temperature Range, (°C): -55 to +155
Lead material is Type E with Type 4 finish

ESCC European Space Components Coordination
QPL

RESISTORS,
FILM, FIXED, CHIP, THIN FILM,
BASED ON TYPE P HR

Current Validity of Qualification		Page
Certificate	Valid Until	10-09
265 C	May 2010	002

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4009 Detail ESCC 4009/002	IRCA RICA Division Vitorio Veneto Italy	Qualification Extension Extension Extension Extension Extension Extension Extension Extension	ESTEC ESTEC ESTEC ESTEC ESTEC ESTEC ESTEC ESTEC ESTEC	Apr 1992 May 1994 Mar 1996 Feb 1998 Apr 2000 Aug 2002 Dec 2004 Aug 2007 Oct 2009

Characteristics:

Single, double layer and magnetically compensated heaters

Maximum Ohmic density	200 Ω/cm^2
Tolerances	±2, 3, 5, 10 %
Resistance	1 to 5000 Ω
Heating Area	1.6 to 1300 cm^2
Terminal Lead	20, 22, 24, 26, 28, 30 AWG
Temperature coefficient	($10^{-}6$/°C): 175

Operating Temperature Range, (°C): $^{-}65$ to $^{+}200$

		Current Validity of Qualification		Page
ESCC European Space Components Coordination QPL	RESISTORS, HEATERS, FLEXIBLE SINGLE AND DOUBLE LAYER	Certificate	Valid Until	10-11
		184 H	October 2011	001-1

Section 11 **Component Type: Thermistors**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
11-01			NTC	
	11-01-001	266 E	Types G15K4D489 and *K3A35*	MEAS Ireland (Betatherm) Ltd.

Types covered by similarity:

Remarks: Refer to variants table 1(a) in the Detail Specifications for resistance to temperature characteristics

Procurement Specifications	Manufacturer
Generic ESCC 4006 Detail ESCC 4006/013 4006/014	MEAS Ireland (Betatherm) Galway Ireland

Nature of Approval	Supervising Authority	Date
Qualification	ESTEC	Jul 2001
Extension	ESTEC	Jan 2002
Extension	ESTEC	Sep 2004
Extension	ESTEC	Nov 2006
Extension	Enterprise Ireland	Nov 2008
Extension	Enterprise Ireland	Nov 2009

Characteristics:

4006/013: Variants 01 to 05 and 07 are qualified.

4006/014: Variants 08, 09 and 12 are qualified.

Operating Temperature Range, (°C): $^{-}$55 to $^{+}$115 for 4006/013 variants 04 and 05,
$^{-}$60 to $^{+}$160 for 4006/014 variant 08

ESCC European Space Components Coordination

QPL

THERMISTORS,
(THERMALLY SENSITIVE RESISTORS), NTC,
BASED ON TYPES G15K4D489 AND *K3A35*

Current Validity of Qualification		Page
Certificate	Valid Until	11-01
266 E	November 2011	001

Section 12 **Component Type: Transistors**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
12-01			Low Power, NPN	
	12-01-002-3A-B	233 G	Types NPN	ST Microelectronics
	12-01-003-1	106 L	Type 2N2369A	ST Microelectronics
12-02			Low Power, PNP	
	12-02-002-3A-B	234 G	Types PNP	ST Microelectronics
12-10			RF/Microwave, NPN, Low Power, Low Noise	
	12-10-001	230 C	Types BFY 193	Infineon
	12-10-002	245 C	Types BFY 405-450	Infineon
12-16			Microwave, Gallium Arsenide	
	12-16-001	213 C	Types CFY66 & 67, High Electron Mobility, Low Noise	Infineon

Types covered by similarity:

Remarks: Maintenance of qualification testing is under-way.

Procurement Specifications	Manufacturer
Generic ESCC 5000 Detail ESCC Please refer to the next page	ST Microelectronics Rennes France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Sep 1996
Extension	CNES	Sep 1997
Extension	CNES	Aug 1998
Extension	CNES	Nov 1999
Extension	CNES	Nov 2001
Extension	CNES	Dec 2003
Extension	CNES	Mar 2006
Extension	CNES	Jul 2008

Characteristics:

Maximum Rating:

	2N2222A	2N2484	2N2219A		2N5551	2N3700	2N3019	2N5154	BUX 77	2N2920A
V_{CBO}(V):	75	60	75	BV_{CBO}(V)	180	140	140	100	100	60
V_{CEO}(V):	40	60	40	BV_{CEO}(V)	160	80	80	80	80	60
Packages:	TO-18, TO-39, TO-66, TO-77, TO-257, LCCC3, LCCC6 and SMD0.5									
Operating Temperature Range (°C), -65 to +200										

ESCC European Space Components Coordination

QPL

TRANSISTORS,
LOW AND HIGH POWER,
NPN

Current Validity of Qualification		Page
Certificate	Valid Until	12-01
233 G	July 2010	002-3A

ESCC Specification No.	Component Type	Package	Qualified Variants
5201/001	2N 2484	TO-18, LCCC3	01, 02, 04, 05
5201/002	2N 2222A	TO-18, LCCC3	01, 02, 04, 05
5201/019	2N 5551	TO-18, LCCC3, TO-39	01, 02, 04, 05, 06, 07
5201/003	2N 2219 A	TO-39	01, 02
5201/004	2N 3700	TO-18, LCCC3	01, 02, 04, 05
5203/010	2N 5154, BFX 34	TO-39, TO-257, SMD0.5	01, 02, 04, 05, 06
5203/016	BUX 77ESY	TO-257	06, 07
5207/002	2N 2920A	TO-77 and LCCC6	03, 06, 12, 15
5201/011	2N3019	TO-39	03, 04

Types covered by similarity:	Remarks: Maintenance of qualification testing is under-way

Procurement Specifications	Manufacturer
Generic ESCC 5000 Detail ESCC 5201/006	ST Microelectronics Rennes France

Characteristics:	Variants 01, 02, 04 and 05 are qualified	
h_{FE} min/max:	40/120 at I_C = 10 mA	
t_{on}:	12 ns	
$V_{CE\ SAT}$:	0.5V at I_C = 100 mA	
t_{off}	18 ns	
Maximum Ratings:	P_D:	360 mW at T_{amb} +25 C
	B_{VCBO}:	40 V
	B_{VCEO}:	15 V
	I_C:	500 mA, 10 μsec pulse
Package Types:	TO-18 and LCCC3	
Operating Temperature Range (°C): - 65 to +200		

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Feb 1983
Extension	CNES	Jul 1987
Extension	CNES	Apr 1990
Extension	CNES	Aug 1992
Extension	CNES	Jun 1995
Extension	CNES	Sep 1996
Extension	CNES	Sep 1997
Extension	CNES	Nov 1999
Extension	CNES	Nov 2001
Extension	CNES	Dec 2003
Extension	CNES	Mar 2006
Extension	CNES	Jul 2008

ESCC European Space Components Coordination
QPL

TRANSISTORS,
LOW POWER, NPN,
TYPE 2N 2369A

Current validity of Qualification		Page
Certificate	Valid Until	12-01
106 L	July 2010	003-1

Types covered by similarity:

Remarks: Maintenance of qualification testing is under-way

Procurement Specifications	Manufacturer
Generic ESCC 5000 Detail ESCC Please refer to the next page	ST Microelectronics Rennes France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Sep 1996
Extension	CNES	Sep 1997
Extension	CNES	Aug 1998
Extension	CNES	Nov 1999
Extension	CNES	Nov 2001
Extension	CNES	Jan 2004
Extension	CNES	Mar 2006
Extension	CNES	Jul 2008

Characteristics:

	2N2905A	2N2907A	2N3350	2N3810	2N4033	2N5153	BUX 78	2N5401
BV_{CBO}(V)	60	60	60	60	80	100	100	160
BV_{CEO}(V)	60	60	45	60	80	80	80	150
Packages:	TO-18, TO-39, TO-77, TO-78, TO-257, LCCC3, LCCC6 and SMD0.5							
Operating Temperature Range (°C), -65 to +200								

ESCC European Space Components Coordination

QPL

TRANSISTORS,
LOW AND HIGH POWER,
PNP

Current Validity of Qualification		Page
Certificate	Valid Until	12-02
234 G	July 2010	002-3A

ESCC Specification No.	Component Type	Package	Qualified Variants
5202/002	2N 2905A	TO-39	01, 02
5202/001	2N 2907A	TO-18, LCCC3	01, 02, 04, 05
5202/014	2N 5401	TO-18, LCCC3	01, 02, 04, 05
5204/002	2N 5153	TO-39, TO-257, SMD0.5	01, 02, 04, 05, 06
5204/006	BUX 78ESY	TO-257	06, 07
5207/005	2N 3810	TO-78, LCCC6	01, 02, 07, 09
5207/003	2N 3350	TO-77, LCCC6	01, 02, 04, 05
5202/008	2N 4033	TO-39, LCCC3	01, 02, 04, 05

Types covered by similarity: Variants 01 to 05	Remarks: Maintenance of qualification testing is pending a completion of facility move.

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5611/006	Infineon Technologies AG München Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Jun 1996
Extension	DLR	Jan 2000
Extension	DLR	Nov 2004
Requalification	DLR	Mar 2008

Characteristics for BFY 193

V_{CEO} (V) max.		12	
V_{CBO} (V)max.		20	
h_{FE} min/max.		50/175	@ V_{CE} = 8.0 V, I_C = 30mA
NF (dB) max.	@ 2 GHz	2.9	@ V_{CE} = 5.0 V, I_C = 15mA
MAG/MSG (dB) min.	@ 2 GHz	12.5	@ V_{CE} = 5.0 V, I_C = 40mA
f_T (GHz) min.	@ 500 MHz	6.5	@ V_{CE} = 5.0 V, I_C = 40mA

Package: " Micro-X1"

Total Power Dissipation (P_{tot}) = 580 mW

Operating Temperature Range (°C): T_{op} = - 65 to +200

ESCC European Space Components Coordination

QPL

TRANSISTORS,
MICROWAVE, SMALL SIGNAL, BIPOLAR,
BASED ON TYPE BFY 193

Current validity of Qualification		Page
Certificate	Valid Until	12-10
230 C	March 2010	001

Types covered by similarity: Variants 01 and 02	Remarks: Maintenance of qualification testing is pending a completion of facility move.

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5611/008	Infineon Technologies AG München Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Jun 1997
Extension	DLR	Jan 2000
Extension	DLR	Dec 2003
Requalification	DLR	Mar 2008

Characteristics for BFY 450

V_{CEO} (V) max.		4.5	
V_{CBO} (V)max.		15	
I_C (mA) max.		100	
I_B (mA) max.		10	
h_{FE} min/max.		50/150	@ V_{CE} = 1.0 V, I_C = 20mA
NF (dB) max.	@ 1.8 GHz	2.0	@ V_{CE} = 2.0 V, I_C = 10mA
f_T (GHz) min.	@ 1.0 GHz	18	@ V_{CE} = 3.0 V, I_C = 90mA

Package: “Micro-X”

Total Power Dissipation (P_{tot}) = 450 mW

Operating Temperature Range (°C): T_{op} = - 65 to +175

ESCC European Space Components Coordination

QPL

TRANSISTORS,
MICROWAVE, SMALL SIGNAL, BIPOLAR,
BASED ON TYPE BFY 450

Current validity of Qualification		Page
Certificate	Valid Until	12-10
245 C	March 2010	002

Types covered by similarity:

Remarks: Maintenance of qualification testing is pending a completion of facility move.

Procurement Specifications	Manufacturer
Generic ESCC 5010 Detail ESCC 5613/002 ESCC 5613/004	Infineon Technologies AG München Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Apr 1994
Extension	DLR	Jan 2000
Extension	DLR	Dec 2003
Requalification	DLR	Mar 2008

Characteristics (@ 12 GHz):

All variants are qualified		NFmin. (dB)	Ga (dB)
5613/002 lattice matched	variants 1 & 3 variants 2 & 4	0.8 1.0	10 9.5
5613/004 pseudo-morphic	variants 1 & 3 Variants 2 & 4	0.8 1.0	11 10.5

Package: Micro-X

Total Power Dissipation (P_{tot}) = 200 mW derated from +31 °C T_{amb}

Operating Temperature Range (°C): T_{stg} = - 65 to +150

ESCC European Space Components Coordination

QPL

TRANSISTORS,
HIGH ELECTRON MOBILITY, GALLIUM ARSENIDE, MICROWAVE,
LOW NOISE, SMALL SIGNAL,
BASED ON TYPES CFY 66 AND CFY 67

Current validity of Qualification		Page
Certificate	Valid Until	12-16
213 C	March 2010	001

Component Type: Wires and Cables

INDEX PAGE 1 of 2

INDEX PAGE 2 of 2

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
13-02			Coaxial, RF, Flexible	
	13-02-001	24 N	PTFE/Polyimide, Type 50 CIS	Nexans
	13-02-002-1	255 F	Coaxial, Triaxial, Balanced Shielded Line	Gore
	13-02-002-2	298	Coaxial, Triaxial, Balanced Shielded Line	Axon' Cable
	13-02-003-1	291	Symmetric, Quad, Spacewire	Axon' Cable

Types covered by similarity:

Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/001 3901/002	Draka Fileca Ste-Genevieve France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jan 1979
Extension	CNES	Sep 1981
Extension	CNES	Jan 1984
Extension	CNES	Aug 1986
Extension	CNES	Jan 1989
Extension	CNES	Apr 1991
Extension	CNES	Jun 1993
Extension	CNES	Jun 1995
Extension	CNES	Aug 1997
Extension	CNES	Aug 1999
Extension	CNES	Jan 2002
Extension	CNES	Jan 2004
Extension	CNES	Feb 2006
Extension	CNES	Feb 2008
Extension	CNES	Feb 2010

Characteristics:

FA 3901-1 All Variants defined in the Detail Specification are qualified except those based on AWG 12-14
FA 3901-2 All Variants defined in the Detail Specification are qualified

Voltage Rating, maximum (Vrms):600
Temperature Range (°C): $^{-}$100 to $^{+}$200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, POLYIMIDE INSULATION
BASED ON TYPES FA 3901-1, FA 3901-2

Current validity of Qualification		Page
Certificate	Valid Until	13-01
07 N	February 2012	001-1

Types covered by similarity:	Remarks: Maintenance of qualification testing is under-way

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/001 3901/002	Nexans Draveil France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jan 1979
Extension	CNES	Sep 1981
Extension	CNES	Dec 1983
Extension	CNES	Mar 1987
Extension	CNES	Jul 1989
Extension	CNES	Sep 1991
Extension	CNES	Aug 1993
Extension	CNES	Sep 1995
Extension	CNES	Aug 1997
Extension	CNES	Aug 1999
Extension	CNES	Aug 2001
Extension	CNES	Aug 2003
Extension	CNES	Nov 2005
Extension	CNES	May 2008

Characteristics:

Medium weight 1871 - n/1871 - 871 (3901/001) Variants 24 to 47 are qualified
Light weight 1872 - n/1872 - 872 (3901/002) Variants 31 to 73 are qualified

Voltage Rating, maximum (Vrms):600
Temperature Range (°C): -100 to +200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, POLYIMIDE INSULATION
BASED ON TYPES 1871 - 1872

Current validity of Qualification		Page
Certificate	Valid Until	13-01
09 M	May 2010	001-2

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/001 3901/002	AXON' CABLE Montmirail France

Nature of Approval	Supervising Authority	Date
Qualification	ESTEC	Dec 1985
Extension	ESTEC	Jul 1988
Extension	ESTEC	Jul 1990
Extension	ESTEC	Nov 1993
Extension	ESTEC	Jan 1996
Extension	ESTEC	May 1999
Extension	CNES	Jun 2002
Extension	CNES	Sep 2004
Extension	CNES	Oct 2004
Extension	CNES	Mar 2007
Extension	CNES	Jun 2009

Characteristics:

All variants are qualified.

Voltage Rating, maximum (Vrms):600
Temperature Range (°C): -100 to +200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, POLYIMIDE INSULATION,
BASED ON TYPES 3901001**B and 3901002**B

Current validity of Qualification		Page
Certificate	Valid Until	13-01
132 K	June 2011	001-3

Types covered by similarity:

-MTV - BTV
-MTV/G - BTV/G
-MTV/BF/G - BTV/BF/G

Remarks: Maintenance of qualification testing is under-way

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/013	Nexans Draveil France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jan 1979
Extension	CNES	Sep 1981
Extension	CNES	Dec 1983
Extension	CNES	Mar 1987
Extension	CNES	Jul 1989
Extension	CNES	Sep 1991
Extension	CNES	Aug 1993
Extension	CNES	Sep 1995
Extension	CNES	Aug 1997
Extension	CNES	Aug 1999
Extension	CNES	Aug 2001
Extension	CNES	Aug 2003
Extension	CNES	Nov 2005
Extension	CNES	May 2008

Characteristics:

Variants 01 to 77 are qualified

Voltage Rating, maximum (Vrms):600
Temperature Range (°C): -100 to +200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, PTFE/POLYIMIDE INSULATION,
BASED ON TYPES MTV-BTV

Current validity of Qualification		Page
Certificate	Valid Until	13-01
08 M	May 2010	003

Types covered by similarity:		Remarks:		
Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/013	AXON' CABLE Montmirail France	Qualification	CNES	Jun 2009
Characteristics: Variants 01 to 77 are qualified Voltage Rating, maximum (Vrms):600 Temperature Range (°C): $^{-}$100 to $^{+}$200				

		Current validity of Qualification		Page
ESCC European Space Components Coordination QPL	WIRES AND CABLES, LOW FREQUENCY, PTFE/POLYIMIDE INSULATION, BASED ON TYPES 3901013**B	Certificate	Valid Until	13-01
		292	June 2011	003-02

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/009	W.L. Gore & Co Pleinfeld Germany

Nature of Approval	Supervising Authority	Date
Qualification	DLR	Aug 1986
Extension	ESTEC	Dec 1988
Extension	DARA	Jul 1991
Extension	DARA	Aug 1993
Extension	DARA	Feb 1996
Extension	DLR	Feb 1998
Requalification	DLR	Nov 2004
Extension	DLR	Apr 2007
Extension	DLR	May 2009

Characteristics:

Variants 01-66 are qualified

Voltage Rating, maximum (Vrms):600
Temperature Range (°C): -150 to +150

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, POLYIMIDE INSULATION,
BASED ON TYPES SPC 2110

Current validity of Qualification		Page
Certificate	Valid Until	13-01
138 H	May 2011	004-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/019	W.L. Gore & Co Pleinfeld Germany	Qualification Extension Extension Extension Extension Extension Extension Extension	DARA DARA DLR DLR DLR DLR DLR DLR	Nov 1994 Nov 1996 Oct 1998 Oct 2000 Nov 2002 Nov 2004 Oct 2006 Nov 2008

Characteristics:

Variants 01-94 are qualified

Voltage Rating, maximum (Vrms):600
Temperature Range (°C): -200 to +200

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/019	AXON' CABLE Montmirail France	Qualification Extension Extension Extension	CNES CNES Extension Extension	Jun 2002 Sep 2004 Mar 2007 Jun 2009

Characteristics:

All variants are qualified with the exception of variants 01, 09, 17, 24, 25, 32, 48, 56, 64, 72, and 79

AWG 12 to 28 inclusive are qualified

Voltage Rating, maximum (Vrms):600

Temperature Range (°C): -200 to +200

Types covered by similarity:		Remarks:		
Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/019	LEONI Special Cables GmbH Friesoythe Germany	Qualification	DLR	Oct 2009
Characteristics: All variants are qualified with the exception of variants 01, 09, 17, 24, 25, 32, 48, 56, 64, 72, and 79 Conductor according to ISO 2635 (except AWG 28) AWG 12 to 28 inclusive are qualified For silver coated strands the silver thickness shall be 2.0µm minimum Voltage Rating, maximum (V_{rms}):600 Temperature Range (°C): $^{-}$200 to $^{+}$200				

Types covered by similarity:	Remarks:
	This product is not intended for human space flight applications.

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/012	Tyco Electronics Dorcan, Swindon England

Nature of Approval	Supervising Authority	Date
Qualification	RAE	Feb 1989
Extension	RAE	Jul 1992
Extension	DRA	Mar 1995
Extension	DERA	Sep 1997
Extension	DERA	Oct 1999
Extension	QinetiQ	Nov 2001
Extension	QinetiQ	Nov 2003
Extension	QinetiQ	Nov 2005
Extension	BNSC	Oct 2007
Extension	BNSC	Sep 2009

Characteristics:

Variants 01 to 80 are qualified

Maximum voltage: 600 Vrms
Operating temperature range (°C): -100 to +200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, 600V, SILVER-PLATED COPPER,
EXTRUDED CROSSLINKED FLUOROPOLYMER INSULATION,
BASED ON TYPE 55/995X

Current validity of Qualification		Page
Certificate	Valid Until	13-01
159 J	September 2011	005-1

Types covered by similarity:	Remarks:
	This product is not intended for human space flight applications.

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/012	AXON' CABLE Montmirail France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Mar 2002
Extension	CNES	Feb 2003
Extension	CNES	Sep 2004
Extension	CNES	Mar 2007
Extension	CNES	Jun 2009

Characteristics:

All variants are qualified except those variants based on AWG 30

Wire code ISO 2635

Voltage Rating, maximum (Vrms) : 600

Temperature Range (°C): -100 to +200

ESCC European Space Components Coordination

QPL

WIRES AND CABLES,
LOW FREQUENCY, 600V, SILVER-PLATED COPPER,
EXTRUDED CROSSLINKED FLUOROPOLYMER INSULATION,
BASED ON TYPE 3901012**B

Current validity of Qualification		Page
Certificate	Valid Until	13-01
267 D	June 2011	005-2

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/017	W.L. Gore & Co. Pleinfeld Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Jul 1994
Extension	DARA	Sep 1996
Extension	DLR	Aug 1998
Extension	DLR	Aug 2000
Extension	DLR	Aug 2002
Extension	DLR	Nov 2004
Extension	DLR	Aug 2006
Extension	DLR	Sep 2008

Characteristics:

All variants are qualified

Voltage Rating, maximum (Vrms) : 600
Temperature Range (°C): -200 to +200

I_{max} (A): 45, 81 and 133 for AWG: 0, 4 and 8, respectively

Expanded PTFE, extruded polyimide/fluorthermoplast insulation

ESCC European Space Components Coordination
QPL

POWER WIRES FOR CRIMPING, LOW FREQUENCY,
BASED ON TYPE SPP

Current validity of Qualification		Page
Certificate	Valid Until	13-01
215 G	September 2010	008

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3901 Detail ESCC 3901/018	W.L. Gore & Co. Pleinfeld Germany

Nature of Approval	Supervising Authority	Date
Qualification	DARA	Jul 1994
Extension	DARA	Sep 1997
Extension	DLR	Aug 1999
Extension	DLR	Aug 2001
Extension	DLR	Aug 2003
Extension	DLR	Nov 2005
Extension	DLR	Feb 2008
Extension	DLR	Mar 2010

Characteristics:

Variants 01 to 88 are qualified.

Voltage Rating, maximum (V^{rms}) : 600
Temperature Range (°C): $^{-}$200 to $^{+}$200

Expanded PTFE, extruded polyimide/ FEP, sintered PTFE insulated wires.
Expanded PTFE, extruded polyimide/fluorothermoplast insulated cables, shielded and jacketed.

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, INSULATED,
POLYIMIDE/FLUOROTHERMOPLAST,
BASED ON TYPE SPM

Current validity of Qualification		Page
Certificate	Valid Until	13-01
216 G	March 2012	009

Types covered by similarity: .		Remarks:		
Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/018	LEONI Special Cables GmbH Friesoythe Germany	Qualification	DLR	Oct 2009
Characteristics: Variants 01 to 88 are qualified. Voltage Rating, maximum (V_{rms}) : 600 Temperature Range (°C): $^{-}$200 to $^{+}$200 Expanded PTFE, extruded polyimide/ FEP, sintered PTFE insulated wires. Expanded PTFE, extruded polyimide/fluorothermoplast insulated cables, shielded and jacketed. Conductor silver thickness shall be 2.0µm minimum				

Types covered by similarity:		Remarks:		
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 3901 Detail ESCC 3901/018	AXON' CABLE Montmirail France	Qualification	CNES	Dec 2009

Characteristics:

All variants are qualified except those based on AWG 30 and 32 are not qualified.

Voltage Rating, maximum (V_{rms}) : 600

Temperature Range (°C): $^{-}$200 to $^{+}$200

Expanded PTFE, extruded polyimide/ FEP, sintered PTFE insulated wires.
Expanded PTFE, extruded polyimide/fluorothermoplast insulated cables, shielded and jacketed.

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/021	W.L. Gore & Co. Pleinfeld Germany	Qualification Extension Extension Extension Extension Extension Extension	DARA DLR DLR DLR DLR DLR DLR	Feb1996 Feb 1998 Feb 2000 Feb 2002 Feb 2004 Feb 2006 Mar 2008

Characteristics:

All variants (01 to 41) are qualified

Voltage Rating, maximum (Vrms) : 600
Temperature Range (°C): -200 to +200

.

Types covered by similarity:		Remarks:		
Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/021	AXON' CABLE Montmirail France	Qualification	CNES	Jun 2009

Characteristics:

All variants are qualified except those based on AWG 30.

Voltage Rating, maximum (Vrms) : 600
Temperature Range (°C): -200 to +200

.

Types covered by similarity:		Remarks:		
Procurement Specifications	**Manufacturer**	**Nature of Approval**	**Supervising Authority**	**Date**
Generic ESCC 3901 Detail ESCC 3901/021	LEONI Special Cables GmbH Friesoythe Germany	Qualification	DLR	Oct 2009

Characteristics:

All variants 01 to 41 are qualified

Voltage Rating, maximum (Vrms) : 600
Temperature Range (°C): -200 to +200

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ESCC European Space Components Coordination
QPL

POLYIMIDE INSULATED SHIELDED CABLES WITH DRAIN WIRE,

LOW FREQUENCY, BASED ON TYPE 3901021

Current validity of Qualification		Page
Certificate	Valid Until	13-01
296	October 2011	010-3

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/020 ESCC 3901/022	Tyco Electronics Dorcan, Swindon England	Qualification Extension Extension Extension Extension	DERA QinetiQ QinetiQ BNSC BNSC	Oct 1999 Jan 2002 Jan 2005 Feb 2007 Feb 2009

Characteristics:
3901/020: All variants (01 - 80) are qualified
3901/022: All variants (01 - 72) are qualified.

Wires and Cables variants consist of 1, 2, 3 and 4 cores with and without jackets and shields

ESCC Detail Specification No. 3901/020 cables are silver-plated copper braided, and
ESCC Detail Specification No. 3901/022 cables are silver-plated copper spiral shielded,
Wire sizes are in accordance with ISO 2635.

Maximum voltage: 600 Vrms
Operating temperature range (°C): -100 to +200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, 600V, SILVER-PLATED COPPER,
EXTRUDED CROSSLINKED MODIFIED ETFE, LIGHTWEIGHT

Current validity of Qualification		Page
Certificate	Valid Until	13-01
257 D	February 2011	011-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901 Detail ESCC 3901/024	AXON' CABLE Montmirail France	Qualification	CNES	Dec 2009

Characteristics:

All variants are qualified except for those variants based on AWG 30

Wires and Cables variants consist of 1, 2, 3 and 4 cores with and without jackets and shields

Maximum voltage: 600 Vrms
Operating temperature range (°C): $^{-}$200 to $^{+}$200

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
LOW FREQUENCY, FLUROPOLYMER INSULATION, 600V, BASED ON TYPE CSWL

Current validity of Qualification		Page
Certificate	Valid Until	13-01
299	December 2011	012-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3902 Detail ESCC 3902/001	Nexans Draveil France

Characteristics:

Variants 01, 02, and 03 are qualified
Miniature
50 ohms
PTFE Dielectric
Polyimide Jacketed, Double Shield, and Shielded/ Jacketed

Maximum voltage: 900 Vrms
Operating temperature range (°C): -100 to +200

Nature of Approval	Supervising Authority	Date
Qualification	CNES	July 1979
Extension	CNES	Feb 1982
Extension	CNES	July 1984
Extension	CNES	Mar 1987
Extension	CNES	July 1989
Extension	CNES	Sept 1991
Extension	CNES	Aug 1993
Extension	CNES	Sep 1995
Extension	CNES	Aug 1997
Extension	CNES	Jan 1998
Extension	CNES	Aug 1999
Extension	CNES	Aug 2001
Extension	CNES	Aug 2003
Extension	CNES	Nov 2005
Extension	CNES	May 2008

ESCC European Space Components Coordination
QPL

WIRES AND CABLES, RF COAXIAL,

PTFE/POLYIMIDE INSULATION,

BASED ON TYPE 50 CIS

Current validity of Qualification		Page
Certificate	Valid Until	13-02
24 N	May 2010	001

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer
Generic ESCC 3902 Detail ESCC 3902/002	W.L. Gore Pleinfeld Germany

Nature of Approval	Supervising Authority	Date
Qualification	DLR	Jan 1999
Extension	DLR	Feb 2001
Extension	DLR	Feb 2003
Extension	DLR	Mar 2005
Extension	DLR	Mar 2007
Extension	DLR	May 2009
Extension	DLR	May 2010

Characteristics:
Variants 03 to 06, 10 to 13 and 20 to 30 are qualified
Variants encompass coaxial, triaxial, and balanced shielded line
Operating Voltage (Continuous), maximum ratings, (Vrms):

Variants 03	180
Variants 04, 10, 21, 22, 23, 24	200
Variants 06, 25	250
All Other Variants	300

AWG Range: 20, 22, 24, 26, 28, 30 dependent on variant

Temperature range (°C): $^{-}$200 to $^{+}$180

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
RADIO FREQUENCY, FLEXIBLE, COAXIAL,
TRIAXIAL AND SYMMETRIC,
BASED ON TYPES GCX, GTX, GSC AND GBL

Current validity of Qualification		Page
Certificate	Valid Until	13-02
255 F	May 2012	002-1

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3902 Detail ESCC 3902/002	AXON' CABLE Montmirail France	Qualification	CNES	Dec 2009

Characteristics:
All variants are qualified except variants 13 and 22 are not qualified
Variants encompass coaxial, triaxial, and balanced shielded line
Operating Voltage (Continuous), maximum ratings, (Vrms):

Variants 03	180
Variants 04, 10, 21, 23, 24	200
Variants 06, 25	250
All Other Variants	300

AWG Range: 20, 22, 24, 26, 28 dependent on variant

Temperature range (°C): $^{-}$200 to $^{+}$180

ESCC European Space Components Coordination
QPL

WIRES AND CABLES,
RADIO FREQUENCY, FLEXIBLE, COAXIAL,
TRIAXIAL AND SYMMETRIC,
BASED ON TYPE 3902/002

Current validity of Qualification		Page
Certificate	Valid Until	13-02
298	December 2011	002-2

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3902 Detail ESCC 3902/003	AXON' CABLE Montmirail France	Qualification	CNES	Jun 2009

Characteristics:

Variant 01 is qualified

Operating Voltage (Continuous), maximum ratings, (Vrms):

Variant 01 200—1.5A

AWG 28—100Mb/s—400 MHz

Temperature range (°C): $^{-}$200 to $^{+}$180

		Current validity of Qualification		Page
ESCC European Space Components Coordination QPL	WIRES AND CABLES, SPACEWIRE, ROUND, QUAD SYMMETRIC, FLEXIBLE, BASED ON TYPE SPACEWIRE	Certificate	Valid Until	13-02
		291	June 2011	003-1

Section 14 **Component Type: Miscellaneous**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
14-16-99			Switches	
	14-16-99-003	275 B	Thermostatic, Bimetallic	COMEPA
14-30-10			Passive Devices, RF	
	14-30-10-002-2	185 D	Coaxial Loads, 0 to 22 GHz	Radiall
	14-30-10-004	178 E	Attenuators, Type R413	Radiall

Types covered by similarity:	Remarks:

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3702 Detail 3702/001	COMEPA BAGNOLET France	Qualification Requalification Extension	CNES CNES CNES	Mar 2004 Aug 2005 Jun 2008

Characteristics:

Variants 01 to 06 are qualified

Range of Components: Grade 1 and Grade Y

Maximum Ratings:

Rated Current (I_R): 4 A (30 Vdc resistive)

Operating Temperature Range (°C), -55 to +125

ESCC European Space Components Coordination

QPL

SWITCHES, THERMOSTATIC, BIMETALLIC, SPST, OPENING CONTACT, BASED ON TYPE TH 47

Current Validity of Qualification		Page
Certificate	Valid Until	14-16-99-003
275 B	June 2010	

Types covered by similarity:

Remarks: No maintenance activities initiated.

Procurement Specifications	Manufacturer
Generic ESCC 3403 Detail 3403/006	RADIALL La Verpilliere France

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jul 1992
Extension	CNES	Jun 1997
Extension	CNES	Jan 2002
Extension	CNES	Apr 2005
Extension	CNES	Mar 2008

Characteristics: All variants are qualified.

Type	Detail Spec.	Frequency Range (GHz)	Rated Pin (W)	Impedance (Ω)
3403/006	3403/006	0-22	1	50

Type	VSWR max			
	0<f(GHz)≤4	4<f(GHz)≤12.4	12.4<f(GHz)≤18	18<f(GHz)≤22
1	1.05	1.15	1.20	1.30
2	1.05	1.15	1.20	1.25

Operating Temperature Range (°C), -55 to +125

ESCC European Space Components Coordination

QPL

PASSIVE DEVICES,
R.F. COAXIAL LOADS, 0-22 GHZ
BASED ON TYPE R404

Current Validity of Qualification		Page
Certificate	Valid Until	14-30-10
185 D	March 2010	002-2

Types covered by similarity:	Remarks: No maintenance activities initiated.

Procurement Specifications	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3403 Detail 3403/005	RADIALL La Verpilliere France	Qualification Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES	Jan 1991 Jan 1994 Jun 1997 Mar 2002 Apr 2005 Mar 2008

Characteristics:

Variants 01 to 31

Frequency range (GHz): 0 - 22

Attenuation (dB): 0 - 20

Operating Temperature Range (°C), -55 to $^{+}$125

ESCC European Space Components Coordination

QPL

R.F. ATTENUATORS
FIXED, COAXIAL
BASED ON TYPE R413

Current Validity of Qualification		Page
Certificate	Valid Until	14-30-10
178 E	March 2010	004

Section 18 **Component Type: Optoelectronics**

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
			Currently there are no qualified sources of Optoelectronics	