



## ESCC QUALIFIED PARTS LIST

REP005

Updated 15-Nov-2006



General Information	
As affected	
Section/Page No.	Description
Section 01 01-01-007	Index of Capacitors Type II, High Voltage from Temex
Section 11 11-01-001	Index of Thermistors Type G15K4D489 and *K3A35* fromn Betatherm

Amended  
Deleted  
  
Amended  
Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Nov-06**

General Information	
As affected	
Section/Page No.	Description
Section 01 01-03-004	Index of Capacitors Type TAJ from AVX Amended
Section 07 07-01-002	Index of Inductors Types SESI from Microspire Amended
Section 10 10-09-001-1	Index of Resistors Single & Double Layer from IRCA Amended
Section 11 11-01-001	Index of Thermistors Type G15K4D489 and *K3A35* from Betatherm Amended
Section 13 13-01-001-3	Index of Wires and Cables Polyimide, Types 3901002**B from Axon Cable Amended
13-01-004-2	Polyimide, Type SPL from Gore Extended
13-01-004-3	Polyimided, Type 3901019**B from Axon Cable Amended
13-01-005-2	Crosslinked PTFE, Type Silver-Plated Copper from Axon Cable Amended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Oct-06**

	General Information	
As affected		
Section/Page No.	Description	
DCN Aug. 06	Type SPP from Gore (D)	Amended
Section 13 13-01-008	Index of Wires/Cables Type SPP from Gore (D)	Amended Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**

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**Changes of : 15-Sep-06**

	<b>General Information</b>
As affected	
<b>Section/Page No.</b>	<b>Description</b>



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**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Aug-06**

General Information	
As affected	
Section/Page No.	Description
Section 04	Index of Diodes
04-01-002-2	Types 1N4148-1, 1N4150-1 from Microsemi
04-01-003-1	Types 1N6638 and 1N3595-1 from Micosemi
04-01-004-1	Types 1N5806 and 1N5806US from Micorsemi
	Amended
	Deleted
	Deleted
	Deleted



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Jul-06**

	General Information	
As affected		
Section/Page No.	Description	
Section 02	Index of Connectors	Amended
02-03-001-1	Type HE801 from Hypertac	Amended
02-03-002-1	Type KMC from Hypertac	Amended
02-03-003-1	Type MHD from Hypertac	Amended
Section 04	Index of Diodes	Amended
04-05-003-2	Types DH267 and DH294 from Chelton	Amended
04-05-003-3	Types DH76xxx from Chelton	Amended
Section 07	Index of Inductors	Amended
07-01-002	Series SESI from Microspire	Amended
Section 11	Index of Thermistors	Amended
11-01-001	Types *G*D and *K3A* from Betatherm,	Amended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Jun-06**

General Information	
As affected	
Section/Page No.	Description
Section 01 01-01-007 01-02-004-1	Index of Capacitors Type II, High Voltage from TEMEX Type II, High Voltage from AVX (N.I.)
	Amended Amended Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**  
 Changes of : 15-May-06



General Information	
As affected	
Section/Page No.	Description
Section 10 10-04-001	Index of Resistors Type RNC 90 from Vishay SA Sfernice Amended Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**  
 Changes of : 15-Apr-06

General Information		
As affected		
Section/Page No.	Description	
Section 01	Index of Capacitors	Amended
01-01-005	Type II, High Capacitance from AVX (N.I.)	Extended
01-01-006	Type II, High Voltage from AVX (N.I.)	Extended
01-04-001-2	Type CLR 79 from Arcotronics	Extended
Section 02	Index of Connectors	Amended
02-01-001-2	D*M Series, Rectangular from SOURIAU	Extended
02-02-001-2	D*MA Series, Rectangular from SOURIAU	Extended
Section 04	Index of Diodes	Amended
04-02-002-1	Type STPS20H100 from STMicroelectronics	Extended
04-02-003-1	Types BYW-81, BYV52, BY54 from STMicroelectronics	Extended
Section 05	Index of Filters	Amended
05-01-001 A-B	Types SFC, SFL, SFP from Eurofarad	Extended
Section 12	Index of Transistors	Amended
12-01-002-3A-B	Types NPN from STMicroelectronics	Extended
12-01-003-1	Types 2N2369A from STMicroelectronics	Extended
12-02-002-3A-B	Types PNP from STMicroelectronics	Extended



**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Mar-06**

General Information	
As affected	
Section/Page No.	Description
Section 01 01-04-001-2	Index of Capacitors Type CLR 79 from Arcotronics Amended
Section 04 04-05-003-1A-B	Index of Diodes PIN and Varactors from Tyco M/A Com Amended Extended
Section 10 10-08-002 10-10-001	Index of Resistors Type P HR from Vishay S.A. Sfernice Single-in-Line Network from Vishay S.A. Sfernice Amended Extended Extended
Section 13 13-01-001-1 13-01-010-1	Index of Wires and Cables Polyimide, Types FA-3901-1, FA 3901-2 from Draka Fileca Polyimide, Insulated, Shielded, Type SPLD, Drain Wire from Gore Amended Extended Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Feb-06**

	General Information	
As affected		
Section/Page No.	Description	
Section 01 01-02-003-1	Index of Capacitors Type I, High Frequency from TEMEX	Amended Deleted
Section 02 02-01-001-2 02-02-001-2	Index of Connectors D*M Series, Rectangular from SOURIAU D*MA Series, Rectangular from SOURIAU	Amended Amended
Section 04 04-02-002-1 04-02-003-1 04-05-002-4A 04-05-003-2 04-05-003-3	Index of Diodes Type STPS20H100 from STMicroelectronics Types BYW-81, BYV52, BYV54 from STMicroelectronics PIN, Fast Switching from Chelton Varactor, DH 267 from Chelton Varactor, Tuning DH 76xx from Chelton	Amended Amended Amended Amended Amended
Section 09 09-01-005 09-02-006 09-03-002	Index of Relays Type E from LEACH Type D from LEACH Type GP3A	Amended Amended Amended Deleted
Section 10 10-08-002 10-10-001	Index of Resistors Type P HR from Vishay Sfernice Single-in-Line from Vishay Sfernice	Amended Amended
Section 12 12-01-002-3A-B 12-01-003-1 12-02-002-3A-B	Index of Transistors Types NPN from STMicroelectronics Types 2N2369A from STMicroelectronics Types PNP from STMicroelectronics	Amended Amended Amended
Section 13 13-01-001-1 13-01-010-1	Index of Wires and Cables Polyimide, Types FA-3901-1, FA 3901-2 from Draka Fileca Polyimide, Insulated, Shielded, Type SPLD, Drain Wire from GORE	Amended Amended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Jan-06**

	General Information	
As affected		
Section/Page No.	Description	
Section 01	Index of Capacitors	Amended
01-01-005	Type II, High Capacitance from AVX (N.I.)	Amended
01-01-006	Type II, High Voltage from AVX (N.I.)	Amended
01-02-003-1	Type I, High Frequency from TEMEX	Amended
01-02-004-1	Type II, High Voltage from AVX (N.I.)	Amended
01-05-001-1	Type HT86PS, High Voltage from Eurofarad	Extended
Section 02	Index of Connectors	Amended
02-01-001-2	D*M Series, Rectangular from SOURIAU	Amended
02-04-001	SMA Series from Radiall	Amended
02-05-001-1	MDM Series, Rectangular from ITT Cannon	Extended
Section 04	Index of Diodes	
04-02-003-1	Types BYW-81, BYV52, BYV54 from STMicroelectronic	Amended
04-05-001-3	Schottky, BAS 70 from Infineon	Amended
04-05-002-2	PIN, BXY 42 from Infineon	Amended
04-05-003	PIN, BXY 43 and 44 from Infineon	Amended
04-05-003-2	Varactor, DH 267 from Chelton	Amended
04-05-003-3	Varactor, Tuning, DH 76xxx from Chelton	Amended
Section 05	Index of Filters	
05-01-001-A	Types SFC, SFL, SFP from Eurofarad	Amended
Section 07	Index of Inductors	Amended
07-01-001	Types MSC1 10000, 12000, 20000 from Microspire	Extended
Section 09	Index of Relays	
09-03-002	Type GP3A from LEACH	Amended
Section 10	Index of Resistors	
10-04-001	Type RNC 90 from Vishay Sfernice	Amended
10-08-002	Type P HR from Vishay Sfernice	Amended
10-10-001	Single-in-Line from Vishay Sfernice	Amended
Section 12	Index of Transistors	
12-10-001	Types BFY 193 from Infineon	Amended
12-10-002	Types BFY 405-450 from Infineon	Amended
12-15-001-1	Type CLY32 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
13-01-005-1	Crosslinked PTFE, Type Sliver-Plated copper from Tyco Electronics	Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Dec-05**

General Information		
As affected		
Section/Page No.	Description	
Section 08	Index of Microcircuits	Amended
08-02-001-2 A-E	4000 B Series from ST Microelectronics	Extended
08-02-002-2 A-F	54HCMOS Series from ST Microelectronics	Extended
Section 10	Index of Resistors	Amended
10-02-006	Surface Mount, Type MS1 from Vishay Electronic (Selb)	Extended
Section 13	Index of Wire and Cables	Amended
13-01-001-2	Polyimide, Types 1871-1872 from Nexans	Extended
13-01-003	PTFE, Types MTV-BTV from Nexans	Extended
13-01-005-1	Crosslinked PTFE Type Silver-Plated Copper from Tyco Electronics	Amended
13-01-009	PTFE, Polyimide/PFA insulated Shielded, Type SPM from GORE	Extended
13-02-001	PTFE/Polyimide, Type 50 CIS from Nexans	Extended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Nov-05**

General Information	
As affected	
Section/Page No.	Description
Section 10 10-02-006	Index of Resistors Surface Mount, Type MS1 from Vishay Electronic (Selb) Amended
Section 13 13-01-009	Index of Wire and Cables PTFE, Polyimide/PFA insulated Shielded, Type SPM from GORE Amended



**Qualified Parts List**  
**DOCUMENT CHANGES**

**Changes of : 15-Oct-05**

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
	Document Changes	-
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2	Procurors' Responsibility	2
3	Use of Tables	2
4	Revision Procedure	2
5	Table of Qualified Component Types	3
Appendices		
'A'	Qualified Components List	4



## 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 ECSS-Q-60A.

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 procuror is responsible for ensuring that the qualification or capability approval status is valid and that delivered components fulfil the specified requirements of the applicable ESCC specifications. The procuror 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/escq/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 Component 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 listings; contact information is given in full on the appropriate web pages accessed from:

**<https://escies.org/public/escq/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 provide the changes over a one year period. (The same issue date appears on the table at the start of each Section of the Appendix irrespective of whether changes have been made in a particular section. This indicates the information has been reviewed and is current.) The ESA/SCC System is superseded by the ESCC (European Space Components Coordination) System and in consequence this issue of the ESCC QPL is the first one.



**Qualified Parts List**

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	Wire and Cables
14	Miscellaneous



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**Qualified Parts List**

**APPENDIX A**  
**Qualified Components List**



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**Qualified Parts List**

## Section 01

## Component Type: Capacitors

Sub -Section	Page No.	Cert.	Type Designation	Manufacturer
01-01			Ceramic, Fixed	
	01-01-005	231 D	Type II, High Capacitance	AVX (N.I.)
	01-01-006	262 B	Type II, High Voltage	AVX (N.I.)
01-02			Ceramic, Fixed, Chip	
	01-02-001-1	109 G	Type I	AVX/TPC
	01-02-002-1	110 G	Type II	AVX/TPC
	01-02-004-1	264 B	Type II, High Voltage	AVX (N.I.)
01-03			Tantalum,(Solid), Fixed , Electrolytic	
	01-03-004	196 B	Type TAJ	AVX (GB)
01-04			Tantalum, (Non-Solid), Fixed, Electrolytic, Hermetically Sealed	
	01-04-001-2	173 E	Type CLR 79	Arcotronics
01-05			Fixed, Film	
	01-05-001-1	251 C	Type HT86PS, High Voltage	Eurofarad
	01-05-002-1	269 A	Type KM94S	Eurofarad
	01-05-003-1	270 A	Type PM94S	Eurofarad

Types covered by similarity :  ± 20% tolerance		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3001		AVX Limited Coleraine Northern Ireland	Qualification	DRA	Jul 1996		
Detail ESCC 3001/030			Extension	DERA	Jul 1999		
			Extension	DERA	Jul 2001		
			Extension	QinetiQ	Oct 2003		
			Extension	QinetiQ	Mar 2006		
<p>Characteristics : E12 series</p> <p>Qualified Range:</p> <p>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</p> <p>Operating Temperature Range (°C): -55 to +125</p>							
 		<p>CAPACITORS, CERAMIC, TYPE II, HIGH CAPACITANCE, BASED ON CASE STYLES BR, CV, AND CH</p>			Current Validity of Qualification		Page
					Certificate No.  231 D	Valid Until  March 2008	01-01  005

Types covered by similarity :  ± 20% tolerance		Remarks :		
Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3001	AVX Limited Coleraine Northern Ireland	Qualification	DERA	Sep 2000
Detail ESCC 3001/034		Extension	QinetiQ	Aug 2002
		Extension	QinetiQ	Mar 2006
Characteristics : E12 series  Qualified Range:  Variants 01 to 22 are qualified ± 10% tolerance  Operating Temperature Range (°C): -55 to +125				
 	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 No.  262 B	Valid Until  March 2008	01-01  006

Types covered by similarity



Variants 01 and 06 are qualified  
Tolerance ( $\pm$ ): 0.5pF; 2, 5, 20 %



Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3009	AVX/TPC St Apollinaire France	Qualification	CNES	Feb 1983
Detail ESCC 3009/003		Extension	CNES	Sep 1986
3009/004		Requalification	CNES	Apr 1992
3009/005		Extension	CNES	Jan 1995
3009/006		Extension	CNES	Jun 1998
3009/022		Extension	CNES	Nov 2000
		Extension	CNES	Jun 2003
	Requalification	CNES	Feb 2005	

Characteristics : Operating Temp Range ( $^{\circ}$ C), -55 to +125

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

 <p><b>ESCC</b> European Space Components Coordination</p> 	<p>CAPACITORS, CERAMIC, FIXED, CHIP, TYPE I</p>	Current Validity of Qualification		Page
		Certificate No. 109 G	Valid Until February 2007	01-02 001-1

Types covered by similarity :		Remarks :			
Tolerance ( $\pm$ %): 10, 20					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3009		AVX/TPC St Apollinaire France	Qualification	CNES	Feb 1983
Detail ESCC 3009/008			Extension	CNES	Sep 1986
3009/009			Requalification	CNES	Oct 1992
3009/010			Extension	CNES	Mar 1995
3009/011			Extension	CNES	Jun 1998
3009/023			Extension	CNES	Nov 2000
Characteristics:			Extension	CNES	Jun 2003
See Table on next page			Requalification	CNES	Feb 2005
OperatingTemp. Range (°C): -55 to +125					
 	CAPACITORS, CERAMIC, FIXED, CHIP, TYPE II		Current Validity of Qualification		Page
		Certificate No. 110 G	Valid Until February 2007	01-02 002-1A	



Characteristics:

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



CAPACITORS,  
CERAMIC, FIXED,  
CHIP, TYPE II

Current Validity of Qualification

Certificate No.  
110 G

Valid Until  
February 2007

Page  
01-02  
002-1B

Types covered by similarity :

± 20% tolerance

Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3009 Detail ESCC 3009/034	AVX Limited Coleraine Northern Ireland	Qualification  Extension  Extension	DERA  QinetiQ  QinetiQ	Feb 2001  Apr 2003  May 2006

Characteristics : E12 series

Qualified Range:

Variants 01 to 24 are qualified

Terminations:

Variants 01 to 12: metallised pads

Variants 13 to 24: solder coating  
(62/36/2 Sn/Pb/Ag)

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

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



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

Current Validity of Qualification

Certificate No.

264 B



Valid Until

May 2008

Page

01-02

004-1

Types covered by similarity :		Remarks : Maintenance of qualification testing has been completed.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3012		AVX Ltd Paignton England	Qualification	DRA	Jun 1993
Detail ESCC 3012/001			Extension	DERA	Apr 2001
			Extension	QinetiQ	Apr 2003
Characteristics  Variants 01 to 07 and 11 to 17 are qualified					
 	CAPACITORS, LEADLESS SURFACE MOUNTED, TANTALUM,  SOLID ELECTROLYTE, TYPE TAJ		Current Validity of Qualification		Page
			Certificate No.	Valid Until	01-03
		196 B	April 2005	004	

Types covered by similarity : 20 % tolerance

Remarks :

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3003		ARCOTRONICS Towcester England	Qualification	RAE	Sep 1990	
Detail ESCC 3003/005			Extension	DRA	Aug 1993	
			Extension	DERA	Nov 1997	
			Extension	DERA	Feb 2000	
			Extension	QinetiQ	Aug 2002	
			Extension	QinetiQ	Mar 2006	
Characteristics Variants 02 to 05 are qualified						
Detail Spec.	Capacitance Range (µF)		Rated Volt.(V)	Capacitance Range (µF)		Rated Volt.(V)
3003/005	30	to 2 200	6	12	to 470	40
	68	to 2 200	6.3	5	to 430	50
	25	to 850	8	8.2	to 330	60
	20	to 1 800	10	10	to 330	63
	15	to 1 200	15	3.5	to 250	75
	33	to 1 200	16	4.7	to 100	100
	10	to 850	25	2.7	to 82	125
	8	to 560	30			
Operating Temperature Range, (°C): -55 to +125, Case sizes: A, B, C and D						



CAPACITORS,  
TANTALUM, NON-SOLID, ELECTROLYTIC, FIXED,  
CLR 79

Current Validity of Qualification		Page
Certificate No.	Valid Until	01-04
173 E	March 2008	001-2

Types covered by similarity :

All values defined by the ESCC Detail Specification  
20% tolerance by variant where applicable

Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3006	EUROFARAD Lagny sur Marne France	Qualification	CNES	Aug 1998
Detail ESCC 3006/022		Extension	CNES	Jan 2001
		Extension	CNES	Aug 2003
		Extension	CNES	Dec 2005

Characteristics: Operating Temp. Range (°C): -55 to +125

Capacitance Range (pF)	Tol.(± %)	U <sub>R</sub> (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



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

Current Validity of Qualification

Certificate No.

251 C

Valid Until

December 2007

Page

01-05

001-1

Types covered by similarity :

All values defined by the ESCC Detail Specification  
 $\pm$  2% (E48 Series), 5% (E24 Series), 10% (E12 Series) tolerance by variant where applicable

Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3006	EUROFARAD Lagny sur Marne France	Qualification	CNES	Aug 2002
Detail ESCC 3006/023		Extension	CNES	Apr 2005

Characteristics: E96 Series

Capacitance Range (nF)	Tol.( $\pm$ %)	$U_R$ (V)
4.64 to 1 000	1.0	50
1.0 to 470	1.0	100

Sizes 01, 02, 03 available



Maximum dimensions (mm) :

01: 8.0 x 7.5 x 4.5

02: 8.5 x 8.5 x 7.5

03: 10.7 x 10.7 x 7.5

Operating Temp. Range ( $^{\circ}$ C): -55 to +125

 	CAPACITORS, FIXED, SURFACE MOUNT, D.C. SELF-HEALING, NON-INDUCTIVE, POLYPHENYLENE SULPHIDE DIELECTRIC, BASED ON TYPE KM94S	Current Validity of Qualification		Page
		Certificate No. 269 A	Valid Until April 2007	01-05 002-1

Types covered by similarity :

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

Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3006	EUROFARAD Lagny sur Marne France	Qualification	CNES	Aug 2002
Detail ESCC 3006/024		Extension	CNES	Apr 2005

Characteristics: E12 Series

Sizes Available: 01, 02, 03, 04

Maximum dimensions (mm):

01: 10.7 x 10.7 x B

02: 15.5 x 11.5 x B

03: 16.5 x 15.5 x B

04: 18.5 x 17.0 x B

Capacitance Range (µF)	Tol.(± %)	U <sub>R</sub> (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

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

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



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

Current Validity of Qualification

Certificate No.

270 A

Valid Until

April 2007

Page

01-05


003-1



## Section 02



## Component Type: Connectors



Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
02-01			Multipin, Solder Contacts	
	02-01-001-1	71 K	D*M Series, Rectangular	ITT Cannon
	02-01-001-2	155 G	D*M Series, Rectangular	SOURIAU
02-02			Multipin, Crimp Contacts	
	02-02-001-1	72 K	D*MA Series, Rectangular	ITT Cannon
	02-02-001-2	156 F	D*MA Series, Rectangular	SOURIAU
	02-02-003	25 J	DBAS Series, Circular	Deutsch
	02-02-005	220 C	Series I, Circular, Crimp	SOURIAU
	02-02-006	221 C	Series II, Circular, Crimp	SOURIAU
	02-02-007-1	222 C	Series III, Circular, Miniature	SOURIAU
	02-02-008	223 B	Series III, Hermatic	SOURIAU
02-03			Printed Circuit Board	
	02-03-001-1	99 H	HE 801 Series	HYPERTAC
	02-03-001-2	217 D	HE 801 Series	HYPERTAC UK
	02-03-002-1	149 F	KMC Series	HYPERTAC
	02-03-003-1	250 B	MHD Series	HYPERTAC
02-04			R.F. Coaxial	
	02-04-001	68 H	SMA Series	Radiall
02-05			Micro-miniature, Crimp Contacts	
	02-05-001-1	140 H	MDM Series, Rectangular	ITT Cannon
	02-05-002-1	141 H	MTB Series, Rectangular	ITT Cannon



Types covered by similarity : Range defined in the corresponding Detail Specifications.		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401  Detail ESCC 3401/001 3401/004 3401/022 3401/040		ITT CANNON Dole France	Qualification  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES	Feb 1981  Jun 1983  Sep 1986  Oct 1988  Jun 1989  Sep 1991  Apr 1994  Jan 1997  Jan 2000  Apr 2003  Aug 2005
Characteristics  Range of Contacts: 9, 15, 25, 37 and 50 contacts size 20 for standard arrangements 3W3, 5W1 to 47W1 combined contact arrangements 15,26,44,62,78 and 104 contacts size 22 for high density contact arrangements Mounting Type: Blank: standard mounting holes Y: floating mount E: captive nuts Gold-plated non-magnetic coating Coaxial contact arrangements: 3401/004 variants 01 to 20 Power contact arrangements: 3401/040 variants 01 to 12 Operating Temperature Range (°C): -55 to +125			Extension  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES	Sep 1991  Apr 1994  Jan 1997  Jan 2000  Apr 2003  Aug 2005
		CONNECTORS, ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*M		Current Validity of Qualification	
				Certificate No.  71 K	Valid Until  August 2007
				Page  02-01  001-1	

Types covered by similarity : Complete range as defined in the Detail Specifications		Remarks : Coaxial and power contacts are not qualified.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401		SOURIAU Connection Technology Marolles en Brie France	Qualification	CNES	Sep 1988
Detail ESCC 3401/001			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	
Characteristics  Range of Contacts: 9, 15, 25, 37, 50 contacts. Size 20. Range of Contacts: 15, 26, 44, 62, 78 contacts. Size 22 Mounting type= blank: standard mounting holes y: floating mount E: captive nuts  Gold-plated non-magnetic coating Operating Temperature Range (°C): -55 to +125					
 		CONNECTORS, ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS, NON-REMOVABLE, RECTANGULAR RECEPTACLE AND PLUG BASED ON TYPE D*M			Page
		Current Validity of Qualification		Certificate No.	Valid Until
			155 G	March 2008	

Types covered by similarity : Range defined in the corresponding Detail Specification		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3401  Detail ESCC 3401/002 3401/005 3401/020 3401/021		ITT CANNON Dole France	Qualification  Extension  Extension  Extension  Extension  Extension  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES	Feb 1981  Jun 1983  Sep 1986  Oct 1988  Jun 1989  Sep 1991  Apr 1994  Jan 1997  Jan 2000  Apr 2003  Aug 2005	
Characteristics  Range of contacts: 9, 15, 25, 37, and 50 contacts size 20* for standard contact arrangements *Accepts wire sizes AWG # 20 to 24 (standard bucket: variants 01 and 02) *Accepts wire size AWG # 26 and 28 (reduced bucket : variants 03 and 04) *Accepts wire size AWG # 18 and 20 (large bucket: variants 05 to 06) 15, 26, 44, 62,78 and 104 contacts size 22** for high density contact arrangements **Accepts wire sizes AWG # 22 to 26 (standard bucket: variants 07 to 08) Gold-plated non-magnetic coating Operating Temperature Range (°C): -55 to +125 Connector Savers: For usage with above connector range						
 		CONNECTORS, ELECTRICAL, CRIMP CONTACTS, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*MA		Current Validity of Qualification		Page
				Certificate No.	Valid Until	02-02
			72 K	August 2007	001-1	

Types covered by similarity :  Complete range as defined in the Detail Specifications		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401  Detail ESCC 3401/002 3401/005 3401/020 3401/021		SOURIAU Connection Technology Marolles en Brie France	Qualification	CNES	Sep 1988
			Extension	CNES	Apr 1991
			Extension	CNES	Jan 1994
			Extension	CNES	Jul 1996
			Extension	CNES	Mar 2000
			Extension	CNES	Apr 2003
			Extension	CNES	Mar 2006
Characteristics 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 sizes AWG # 22, 24 and 26 (contact AWG # 22 for high density, contact arrangements, variants 07 and 08) Range of Contacts: 9, 15, 25, 37, 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					
 	CONNECTORS AND CONNECTOR SAVER, ELECTRICAL, CRIMP CONTACTS, REMOVABLE, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*MA		Current Validity of Qualification		Page
			Certificate No.	Valid Until	02-02
		156 F	March 2008	001-2	

Types covered by similarity :  
See Detail Specification 3401/008,3401/009 and 3401/012

Remarks :  
Maximum Ratings are stated for one isolated contact.

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date																
Generic ESCC 3401		Cie DEUTSCH Evreux France	Qualification	CNES	Jul 1979																
Detail ESCC 3401/008			Extension	CNES	Nov 1982																
	3401/009		Extension	CNES	Nov 1985																
	3401/012		Extension	CNES	Oct 1989																
Characteristics			Extension	CNES	Apr 1992																
<table border="1"> <tr> <td>Wire Sizes (AWG)#</td> <td>8</td> <td>10</td> <td>12, 14</td> <td>16, 20</td> <td>20, 24</td> <td>18, 22</td> <td>26, 30</td> </tr> <tr> <td>Max Rating (A)</td> <td>46</td> <td>33</td> <td>23</td> <td>13</td> <td>7.5</td> <td>10</td> <td>2.0</td> </tr> </table>			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	Extension	CNES	Aug 1994
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			Extension	CNES	Feb 1997																
Cylindrical Multicontacts			Extension	CNES	May 1999																
Range of shell sizes: 3, 7, 12, 19, 27, 37, 61 contacts in wire size AWG # 20 and solder gauge 8		Extension	CNES	Aug 2001																	
Other arrangements with contacts size AWG 22, 20, 16, 12 and 8		Extension	CNES	Nov 2004																	
Operating Temperature Range (°C): -65 to +200																					





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



Current Validity of Qualification



Certificate No.  
25 J

Valid Until  
November 2006



Page  
02-02  
003



Types covered by similarity :  For contact, variants 01 to 14 are qualified		Remarks :													
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date										
Generic ESCC 3401		SOURIAU Connection Technology Marolles en Brie France	Qualification	CNES	May 1995										
Detail ESCC 3401/052			Extension	CNES	Mar 1998										
3401/058			Extension	CNES	Jul 2001										
			Extension	CNES	Jun 2005										
Characteristics 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  <table border="0"> <tr> <td><u>Contact Size</u></td> <td><u>Ratings (A)</u></td> </tr> <tr> <td>8</td> <td>46.0</td> </tr> <tr> <td>12</td> <td>23.0</td> </tr> <tr> <td>16</td> <td>13.0</td> </tr> <tr> <td>20</td> <td>7.5</td> </tr> </table> Operating temperature range (° C): -65 to +200 °C		<u>Contact Size</u>	<u>Ratings (A)</u>	8	46.0	12	23.0	16	13.0	20	7.5				
<u>Contact Size</u>	<u>Ratings (A)</u>														
8	46.0														
12	23.0														
16	13.0														
20	7.5														
 		CONNECTORS, ELECTRICAL, CIRCULAR, BAYONET COUPLING, SCOOP-PROOF, REMOVABLE CRIMP CONTACTS, BASED ON TYPE MIL-C-38999, SERIES I			Current Validity of Qualification		Page								
					Certificate No.	Valid Until	02-02								
			220 C	June 2007	005										



Types covered by similarity :  For contact, variants 01 to 08 are qualified		Remarks :											
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date								
Generic ESCC 3401  Detail ESCC 3401/044 3401/045		SOURIAU Connection Technology Marolles en Brie France	Qualification  Extension  Extension  Extension	CNES  CNES  CNES  CNES	May 1995  Mar 1998  Jul 2001  Jun 2005								
Characteristics 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  <table border="0"> <tr> <td><u>Contact Size</u></td> <td><u>Ratings (A)</u></td> </tr> <tr> <td>12</td> <td>23.0</td> </tr> <tr> <td>16</td> <td>13.0</td> </tr> <tr> <td>20</td> <td>7.5</td> </tr> </table> Operating temperature range (° C): -65 to +200 °C						<u>Contact Size</u>	<u>Ratings (A)</u>	12	23.0	16	13.0	20	7.5
<u>Contact Size</u>	<u>Ratings (A)</u>												
12	23.0												
16	13.0												
20	7.5												
 		CONNECTORS, ELECTRICAL, CIRCULAR, BAYONET COUPLING, REMOVABLE CRIMP CONTACTS, BASED ON TYPE MIL-C-38999, SERIES II			Current Validity of Qualification	Page							
		Certificate No.  221 C	Valid Until  June 2007	02-02  006									



Types covered by similarity :  3401/058 variants 01 to 14 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		Remarks :																															
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date																												
Generic ESCC 3401		SOURIAU Connection Technology Marolles en Brie France	Qualification	CNES	May 1995																												
Detail ESCC 3401/056			Extension	CNES	Mar 1998																												
3401/058			Extension	CNES	Jul 2001																												
3401/066 3401/070			Extension	CNES	Jun 2005																												
<p>Characteristics</p> <p>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)</p> <p>Other arrangements with contact sizes # 20, 16, 12, 8, 4</p> <p>Receptacle and Plug Shell Sizes: 09,11,13,15,17,19,21,23,25</p> <p>Triax contact= (layout 09-01 only)</p> <table border="1"> <thead> <tr> <th>Crimp Contact Size</th> <th>Ratings (A)</th> <th>PCB Contact Size</th> <th>Ratings (A)</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>80.0</td> <td>16</td> <td>10.0</td> </tr> <tr> <td>8</td> <td>46.0</td> <td>20</td> <td>5.0</td> </tr> <tr> <td>12</td> <td>23.0</td> <td>22</td> <td>3.0</td> </tr> <tr> <td>16</td> <td>13.0</td> <td></td> <td></td> </tr> <tr> <td>20</td> <td>7.5</td> <td></td> <td></td> </tr> <tr> <td>22</td> <td>5.0</td> <td></td> <td></td> </tr> </tbody> </table> <p>Operating temperature range (° C): -65 to +200 °C</p>						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		
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																																
 <p><b>ESCC</b> European Space Components Coordination</p>  <p><b>QPL</b></p>		CONNECTORS, MINIATURE, ELECTRICAL, CIRCULAR, TRIPLE-START SELF-LOCKING COUPLING, SCOOP-PROOF, REMOVABLE & NON-REMOVABLE CRIMP CONTACTS BASED ON TYPE MIL-C-38999, SERIES III			Current Validity of Qualification																												
		Certificate No.  222 C		Valid Until  June 2007		Page 02-02 007-1																											







Types covered by similarity :		Remarks :									
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date						
Generic ESCC 3401  Detail ESCC 3401/057		SOURIAU Connection Technology Marolles en Brie France	Qualification  Requalification  Extension	CNES  CNES  CNES	May 1995  Jul 2001  Jun 2005						
Characteristics  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  <table border="0"> <tr> <td>Contact Size</td> <td>Ratings (A)</td> </tr> <tr> <td>20</td> <td>5.0</td> </tr> <tr> <td>22D</td> <td>3.0</td> </tr> </table> Receptacle ( contacts # 8, 12, 16, 20, 22D) and Feedthrough ( contacts # 8, 12, 16) Operating temperature range (° C): -65 to +200 oC						Contact Size	Ratings (A)	20	5.0	22D	3.0
Contact Size	Ratings (A)										
20	5.0										
22D	3.0										
 		CONNECTORS,  MINIATURE, ELECTRICAL, CIRCULAR, TRIPLE-START SELF- LOCKING COUPLING, SCOOP-PROOF, HERMETIC RECEPTACLE  AND FEEDTHROUGH, TYPE MIL-C-38999, SERIES III		Current Validity of Qualification		Page					
				Certificate No.	Valid Until	02-02					
			223 B	June 2007	008						



Types covered by similarity : All variants are qualified		Remarks : Maintenance of qualification testing is underway.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3401  Detail ESCC 3401/016 3401/017		HYPERTAC Saint-Aubin-Lès-Elbeuf France	Qualification  Extension  Extension  Extension  Extension  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES	Nov 1982  May 1985  May 1988  Apr 1991  Jan 1994  Mar 1996  Mar 1998  Jan 2002  Jun 2004	
Characteristics  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						
 		CONNECTORS, ELECTRICAL, REMOVABLE CONTACTS, CRIMP WIRE-WRAP SOLDER AND SAVER, PRINTED CIRCUIT BOARD, BASED ON TYPE HE 801		Current Validity of Qualification		Page
				Certificate No.	Valid Until	02-03
				99 H	June 2006	001-1



Types covered by similarity : See ESCC Detail Specifications listed below		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3401  Detail ESCC 3401/016 3401/017		HYPERTAC LTD London England	Qualification  Extension  Extension  Extension  Extension	DRA  DRA  DERA  QinetiQ  QinetiQ	Jul 1994  Nov 1996  Nov 1998  Apr 2002  Mar 2005		
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							
 		CONNECTORS, ELECTRICAL, REMOVABLE CONTACTS, CRIMP WIRE-WRAP SOLDER AND SAVER, PRINTED CIRCUIT BOARD, BASED ON TYPE HE 801			Current Validity of Qualification		Page
					Certificate No.	Valid Until	02-03
					217 D	March 2007	001-2

Types covered by similarity : As defined in Table 1(a) of ESCC Detail Specifications listed below		Remarks : Maintenance of qualification testing is underway.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401		HYPERTAC Saint-Aubin-Lès-Elbeuf France	Qualification	CNES	Mar 1987
Detail ESCC 3401/039			Extension	CNES	May 1990
			Extension	CNES	Jan 1993
			Extension	CNES	Oct 1995
			Extension	CNES	Mar 1998
			Extension	CNES	Jan 2002
			Extension	CNES	Jun 2004
Characteristics  3 rows 26, 44, 62, 80, 98, 144 contacts  Contact Ratings: 2 A (1 contact)         Operating Temperature Range (°C): -55 to +125					
 	CONNECTORS, ELECTRICAL, NON-REMOVABLE SOLDER AND WIRE-WRAP CONTACTS AND SAVERS, PRINTED CIRCUIT BOARD, BASED ON TYPE KMC		Current Validity of Qualification		Page
			Certificate No.  149 F	Valid Until  June 2006	02-03  002-1

Types covered by similarity : As defined in Table 1(a) of ESCC Detail Specification		Remarks : Maintenance of qualification testing is underway.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3401		HYPERTAC Saint-Aubin-Lès-Elbeuf France	Qualification	CNES	Aug 1998
Detail ESCC 3401/065			Extension	CNES	Jan 2002
			Extension	CNES	Jun 2004
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					
 	CONNECTORS AND SAVERS, ELECTRICAL, RECTANGULAR, NON-REMOVABLE, PRINTED CIRCUIT BOARD CONTACTS, BASED ON TYPE MHD		Current Validity of Qualification		Page
			Certificate No.  250 B	Valid Until  June 2006	02-03  003-1

Types covered by similarity : See ESCC detail specifications		Remarks :			
- Hermetically sealed receptacle					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3402		RADIALL La Verpilliere France	Qualification	CNES	Feb 1981
Detail ESCC 3402/001			Extension	CNES	Apr 1983
3402/002			Extension	CNES	Apr 1986
3402/003			Extension	CNES	Nov 1989
Characteristics			Extension	CNES	Jul 1992
Frequency Range 0-18 GHz			Extension	CNES	Nov 1994
3402/001 Pin contact (Plug). Variants 01 to 44			Extension	CNES	May 1998
3402/002 Socket contact (Receptacle). Variants 01 to 71			Extension	CNES	Aug 2002
3402/003 Adapters. Variants 01 to 09			Extension	CNES	Jan 2005
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					
 	CONNECTORS, RF, COAXIAL, SOLDER AND CRIMP CONTACTS, MALE, FEMALE ADAPTORS AND CONNECTING PIECES, BASED ON TYPE SMA		Current Validity of Qualification		Page
			Certificate No.	Valid Until	02-04
		68 H	January 2007	001	

Types covered by similarity :		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3401  Detail ESCC 3401/029 3401/041 3401/032		ITT CANNON Dole France	Qualification  Extension  Extension  Extension  Extension  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES	Oct 1986  Oct 1988  Jun 1989  Sep 1991  Apr 1994  Jan 1997  Oct 1999  Apr 2003  Nov 2005	
Characteristics  9 - 15 - 21 - 25 - 31 - 37 - 51 Contacts  Terminations : Wire sizes AWG 26 and 28 and uninsulated solid gold-plated wire AWG 25 Max. rating for 1 isolated contact:- AWG 26 and uninsulated wire terminal: 2.5 A AWG 28 : 1.5 A  Nickel or Gold Plated Shells Operating Temperature Range (°C): -55 to +125						
 		CONNECTORS, ELECTRICAL, CRIMP CONTACT, RECTANGULAR, MICROMINIATURE, BASED ON TYPE MDM		Current Validity of Qualification		Page
		Certificate No.  140 H	Valid Until  November 2007	02-05  001-1		



Types covered by similarity :		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3401		ITT CANNON Dole France	Qualification	CNES	Oct 1986		
Detail ESCC 3401/031			Extension	CNES	Oct 1988		
			Extension	CNES	Jun 1989		
			Extension	CNES	Sep 1991		
			Extension	CNES	Apr 1994		
			Extension	CNES	Jan 1997		
			Extension	CNES	Oct 1999		
Characteristics  Shell sizes : 5 through 81 Terminations : Wire sizes AWG 26 and 28 and AWG 25, uninsulated solid gold-plated wire  Max. rating for 1 isolated contact:- AWG 26 and uninsulated wire terminal: 2.5 A AWG 28 : 1.5 A  Operating Temperature Range (°C): -55 to +125			Extension	CNES	Apr 2003		
			Extension	CNES	Aug 2005		
 		CONNECTORS, ELECTRICAL, CRIMP CONTACTS, SINGLE-IN-LINE, MICROMINIATURE, BASED ON TYPE MTB			Current Validity of Qualification		Page
					Certificate No.	Valid Until	02-05
					141 H	August 2007	002-1





## Section 03

## Component Type: Crystals

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



Types covered by similarity : All variants are qualified		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3501  Detail ESCC 3501/001 3501/008 3501/011 3501/012 3501/018		C-MAC Frequency Products Argenteuil France	Qualification	CNES	Oct 1979	
Characteristics  TO-5 Can (T 807)  Frequency Range: 15 - 140 MHz			Extension	CNES	Jun 1983	
			Extension	CNES	Oct 1986	
			Extension	CNES	Jul 1989	
			Extension	CNES	Jan 1995	
			Extension	CNES	Nov 1996	
			Extension	CNES	Apr 2000	
 		CRYSTALS,  TO-5 CAN		Current Validity of Qualification		Page
				Certificate No.	Valid Until	03-01 001-1
				33 H	June 2007	


Types covered by similarity : All variants are qualified		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3501  Detail  ESCC 3501/002 3501/009 3501/019		C-MAC Frequency Products Argenteuil France	Qualification  Extension  Extension  Extension  Extension  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES	Oct 1979  Jun 1983  Oct 1986  Jul 1989  Jan 1995  Apr 1997  Apr 2000  Nov 2002  Jun 2005
Characteristics  TO-8 Can (T 1507)  Frequency Range: 2.5 - 20 MHz					
 		CRYSTALS,  TO-8 CAN	Current Validity of Qualification		Page
			Certificate No.  34 H	Valid Until  June 2007	03-01  002



## Section 04



## Component Type: Diodes

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
04-02			Power	
	04-02-002-1	272 A	Type STPS20H100	STMicroelectronic
	04-02-003-1	274 A	Types BYW-81, BYV52, BYV54	STMicroelectronic
04-05			Microwave, Silicon	
	04-05-001-3	227 A	Schottky, BAS 70	Infineon
	04-05-002-2	224 B	PIN, BXY 42	Infineon
	04-05-002-4A-B	259 A	PIN, Fast Switching	Chelton
	04-05-003	236 B	PIN, BXY 43 and 44	Infineon
	04-05-003-1A-B	200 C	PIN and Varactors	Tyco M/A Com
	04-05-003-2	225 B	Varactor, DH 267	Chelton
	04-05-003-3	273	Varactor, Tuning, DH 76xxx	Chelton



Types covered by similarity :		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5000  Detail ESCC 5106/016		ST Microelectronics Rennes France	Qualification  Extension	CNES  CNES	Nov 2002  Mar 2006	
Characteristics  Variants 01 to 07 are qualified  Maximum Ratings:  $V_{RRM}$ : 100 V; $I_O$ : 2x 20 A $T_J$ : + 175° C; Package Type: TO254, SMD.5 and SMD1  Operating Temperature Range (°C): -55 to +175						
 		DIODES, POWER, SCHOTTKY BARRIER,  BASED ON TYPE STPS20H100		Current Validity of Qualification		Page
				Certificate No.	Valid Until	04-02
			272 A	March 2008	002-1	

Types covered by similarity :		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5000  Detail ESCC 5103/029 5103/030 5103/031		ST Microelectronics Rennes France	Qualification  Extension	CNES  CNES	Aug 2003  Mar 2006	
Characteristics 5103/029 variants 01 to 05 are qualified 5103/030 variant 01 is qualified 5103/031 variant 01 is 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 and SMD.5  Operating Temperature Range (°C): -55 to +150						
		DIODES, SILICON, POWER RECTIFIER,  HIGH EFFICIENCY, FAST RECOVERY,  BASED ON TYPES BYW81, BYV 52 AND BYV54		Current Validity of Qualification		Page
				Certificate No.	Valid Until	04-02
				274 A	March 2008	003-1

Types covered by similarity : Variant 02: BAS 70-B		Remarks : Requalification activities will be initiated following the transfer of production from the München facility .				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5010		Infineon Technologies AG München Germany	Qualification	DARA	Sep 1995	
Detail ESCC 5512/020			Extension	DLR	Jan 2000	
Characteristics  Maximum Ratings: $V_R = -70\text{ V}$ $I_F = 70\text{ mA}$ $I_{FSM} = 85\text{ mA}_{pk} @ t < 10\text{ ms, duty cycle} = 10\%$  D.C Parameters: $I_R = 100\text{ nA max @ } V_R = -56\text{ V}$ $V_{F1} = 0.44\text{ V max. @ } I_F = 1.0\text{ mA}$ at room temp. $V_{BR} = 70\text{ V min @ } I_R = -10\text{ }\mu\text{A}$ $V_{F2} = 0.78\text{ V max. @ } I_F = 10\text{ mA}$ $V_{F3} = 1.00\text{ V max. @ } I_F = 15\text{ mA}$  Package: T1, HPAC-140, $R_{TH(J-C)} = 100\text{ CW}^{-1}$  Operating Temperature Range ( °C): -55 to +150						
 		DIODES,  MICROWAVE, SILICON, SCHOTTKY, GENERAL PURPOSE,  BASED ON TYPE BAS 70		Current Validity of Qualification		Page
				Certificate No.	Valid Until	04-05
				227 A	January 2002	001-3

Types covered by similarity : Variant 02		Remarks : Requalification testing will be initiated following the transfer of production from the München facility.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5010		Infineon Technologies AG München Germany	Qualification	DARA	Jun 1995	
Detail ESCC 5513/017			Extension	DLR	Jan 2000	
			Extension	DLR	Jan 2004	
<p>Characteristics</p> <p>Maximum Ratings: <math>V_{R=}</math> -50V <math>I_{FM}</math> 5.0 A @ <math>t_p=1.0 \mu s</math>, duty cycle =0.001%</p> <p>D.C Parameters: <math>I_{R1}</math> 10 <math>\mu A</math> max. @ <math>V_{R}=-50 V</math> <math>I_{R2}</math> 5 nA max. @ <math>V_{R}=-40 V</math> <math>V_{F}</math> 1.1 V max. @ <math>I_F=100 mA</math></p> <p>Package: T1</p> <p>Operating Temperature Range (°C): -55 to +175</p>						
 		DIODES, MICROWAVE, SILICON, PIN BASED ON TYPE BXY 42- MESA			Current Validity of Qualification	
		Certificate No. 224 B		Valid Until January 2006		Page 04-05 002-2



Types covered by similarity : See next page		Remarks : The manufacturer has not initiated the maintenance of qualification testing.  New package BH155 introduced				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5010		Chelton Les Ulis France	Qualification	CNES	Mar 2000	
Detail ESCC: See types covered by similarity.			Extension	CNES	Dec 2003	
Characteristics						
	<u>DH 50151</u>	<u>DH 50201</u>	<u>DH 50251</u>			
V <sub>Rmax.</sub>	150 V	200 V	250 V			
R <sub>SF</sub> (Ω) <sub>(max.)</sub>	< 2.0	< 2.3	< 2.4			
τ <sub>L</sub> (ns) <sub>(min.)</sub>	> 160	> 240	> 265			
Operating Temperature Range: -55 to +125 °C						
 		DIODES, MICROWAVE, SILICON, PIN, FAST SWITCHING		Current Validity of Qualification		Page
				Certificate No.	Valid Until	04-05
				259 A	December 2005	002-4A

Types covered by similarity

ESCC Spec. No.	Component Type
5513/031	DH 50151 to DH 50157, variants 01 to 49
5513/033	DH 50201 to DH 50209, variants 01 to 63
5513/034	DH 50251 to DH 50256, variants 01 to 36





DIODES,  
MICROWAVE, SILICON,  
PIN, FAST SWITCHING



Current Validity of Qualification

Certificate No.  
259 A

Valid Until  
December 2005

Page  
04-05  
002-4B

Types covered by similarity : Variants 01-08 are qualified		Remarks : Requalification testing will be initiated following the transfer of production from the München facility.																																																			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date																																																
Generic ESCC 5010		Infineon Technologies AG München Germany	Qualification	DARA	Oct 1996																																																
Detail ESCC 5513/030			Extension	DLR	Jan 2000																																																
			Extension	DLR	Jan 2004																																																
<p>Characteristics</p> <table border="0"> <tr> <td></td> <td style="text-align: center;"><u>BXY 43</u></td> <td style="text-align: center;"><u>BXY 44</u></td> <td colspan="3"></td> </tr> <tr> <td>Maximum Ratings:</td> <td><math>V_R = -150</math> V (variants 01-04),</td> <td><math>-200</math> V (variants 05-08)</td> <td colspan="3"></td> </tr> <tr> <td></td> <td><math>I_F = 400</math> mA</td> <td></td> <td colspan="3"></td> </tr> <tr> <td></td> <td><math>P_D = 500</math> mW</td> <td></td> <td colspan="3"></td> </tr> <tr> <td>D.C Parameters:</td> <td><math>I_R = 10</math> nA max.</td> <td><math>5</math> nA max. @ <math>V_R = -100</math> V</td> <td colspan="3"></td> </tr> <tr> <td></td> <td><math>V_F = 1.0</math> V max.</td> <td><math>1.05</math> V max. @ <math>I_F = 100</math> mA</td> <td colspan="3"></td> </tr> <tr> <td>Packages:</td> <td colspan="5">T, T1, Teller, Pill, Flatpack</td> </tr> <tr> <td colspan="6">Operating Temperature Range: -55 to +150 °C</td> </tr> </table>							<u>BXY 43</u>	<u>BXY 44</u>				Maximum Ratings:	$V_R = -150$ V (variants 01-04),	$-200$ V (variants 05-08)					$I_F = 400$ mA						$P_D = 500$ mW					D.C Parameters:	$I_R = 10$ nA max.	$5$ nA max. @ $V_R = -100$ V					$V_F = 1.0$ V max.	$1.05$ V max. @ $I_F = 100$ mA				Packages:	T, T1, Teller, Pill, Flatpack					Operating Temperature Range: -55 to +150 °C					
	<u>BXY 43</u>	<u>BXY 44</u>																																																			
Maximum Ratings:	$V_R = -150$ V (variants 01-04),	$-200$ V (variants 05-08)																																																			
	$I_F = 400$ mA																																																				
	$P_D = 500$ mW																																																				
D.C Parameters:	$I_R = 10$ nA max.	$5$ nA max. @ $V_R = -100$ V																																																			
	$V_F = 1.0$ V max.	$1.05$ V max. @ $I_F = 100$ mA																																																			
Packages:	T, T1, Teller, Pill, Flatpack																																																				
Operating Temperature Range: -55 to +150 °C																																																					
 		DIODES,  MICROWAVE, SILICON, PIN, PLANAR  BASED ON TYPES BXY 43 AND 44			Current Validity of Qualification		Page																																														
					Certificate No.	Valid Until	04-05																																														
					236 B	January 2006	003																																														

Types covered by similarity : See next page		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 5010  Detail ESCC: See types covered by similarity.		Tyco Electronics Ltd. M/A - COM Division Milton Keynes England	Qualification  Extension  Extension  Extension	DRA  DERA  QinetiQ  QinetiQ	Dec 1993  Oct 1997  Mar 2002  Feb 2006		
Characteristics							
Operating Temperature Range (°C): -65 to +125 and 150							
 		DIODES, MICROWAVE, SILICON, PIN AND VARACTORS			Current Validity of Qualification		Page
					Certificate No.	Valid Until	04-05
					200 C	February 2008	003-1A

Types covered by similarity

ESCC Spec. No.	Component Type and Qualified Range
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



DIODES,  
MICROWAVE, SILICON,  
PIN AND VARACTORS

Current Validity of Qualification

Certificate No.

200 C



Valid Until



February 2008

Page

04-05

003-1B

Types covered by similarity : The variants are based on the following types Variants 10 to 16: DH 267 Variants 30 to 36: DH 256 Variants 50 to 56: DH 294		Variants 20 to 26: DH 292 Variants 40 to 46: DH 252		Remarks : Maintenance of qualification testing is underway. Maintenance activity covers qualification of new processes.			
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date	
Generic ESCC 5010		Chelton Les Ulis France		Qualification	CNES	Jun 1995	
Detail ESCC: 5512/016				Extension	CNES	Aug 1998	
				Extension	CNES	Jun 2003	
Characteristics  Maximum Ratings : $V_R = -15$ to $+45$ V $I_F = 250$ to $1000$ mA at $T_{amb} = +75$ °C $P_{tot} = 0.5$ to $1.25$ W at $T_{amb}$  $C_{j\ max.}$ ranges from 0.4 pF to 7.2 pF Six new variants of packages introduced (M206)  Operating Temperature Range (°C): $-55$ to $+150$							
 		DIODES, MICROWAVE, SILICON, MULTIPLIER VARACTOR BASED ON TYPES DH 267 AND DH 294			Current Validity of Qualification		Page
					Certificate No.	Valid Until	04-05
					225 B	June 2005	003-2



Types covered by similarity :		Remarks : Maintenance of qualification testing is underway.																														
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date																											
Generic ESCC      5010  Detail ESCC:     5512/023		Chelton Les Ulis France	Qualification	CNES	Jun 2003																											
Characteristics:    Operating Temperature Range (°C): -55 to +155  Maximum Ratings : $V_R = -20$ at $I_R=10\mu A$ and $T_{amb}= +25$ °C																																
<table border="1"> <thead> <tr> <th><u>Variants</u></th> <th><u>CT(typ.) (-4V)</u></th> <th><u>Based on Type</u></th> </tr> </thead> <tbody> <tr><td>01 to 09</td><td>1 pF</td><td>DH 76010</td></tr> <tr><td>10 to 18</td><td>1.5 pF</td><td>DH 76015</td></tr> <tr><td>19 to 27</td><td>2.2 pF</td><td>DH 76022</td></tr> <tr><td>28 to 36</td><td>3.3 pF</td><td>DH 76033</td></tr> <tr><td>37 to 45</td><td>4.7 pF</td><td>DH 76047</td></tr> <tr><td>46 to 54</td><td>6.8 pF</td><td>DH 76068</td></tr> <tr><td>55 to 63</td><td>10 pF</td><td>DH 76100</td></tr> <tr><td>64 to 72</td><td>15 pF</td><td>DH 76150</td></tr> </tbody> </table>						<u>Variants</u>	<u>CT(typ.) (-4V)</u>	<u>Based on Type</u>	01 to 09	1 pF	DH 76010	10 to 18	1.5 pF	DH 76015	19 to 27	2.2 pF	DH 76022	28 to 36	3.3 pF	DH 76033	37 to 45	4.7 pF	DH 76047	46 to 54	6.8 pF	DH 76068	55 to 63	10 pF	DH 76100	64 to 72	15 pF	DH 76150
<u>Variants</u>	<u>CT(typ.) (-4V)</u>	<u>Based on Type</u>																														
01 to 09	1 pF	DH 76010																														
10 to 18	1.5 pF	DH 76015																														
19 to 27	2.2 pF	DH 76022																														
28 to 36	3.3 pF	DH 76033																														
37 to 45	4.7 pF	DH 76047																														
46 to 54	6.8 pF	DH 76068																														
55 to 63	10 pF	DH 76100																														
64 to 72	15 pF	DH 76150																														
 		DIODES,  MICROWAVE, SILICON, HYPER-ABRUPT JUNCTION TUNING  VARACTOR, BASED ON TYPES DH 76xxx			Current Validity of Qualification	Page																										
					Certificate No.  273	Valid Until  June 2005	04-05  003-3																									

## Section 05

## Component Type: Filters

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



Types covered by similarity : Refer to next page		Remarks :			
<p>Procurement Specifications Issues in effect on certification date</p>		Manufacturer	Nature of Approval	Supervising Authority	Date
<p>Generic ESCC 3008</p> <p>Detail Refer to types covered by similarity</p>		EUROFARAD Lagny sur Marne France	Qualification	CNES	Aug 1998
			Extension	CNES	Apr 2001
			Extension	CNES	Nov 2003
			Extension	CNES	Mar 2006
<p>Characteristics</p> <p>All variants specified in the Detail Specifications are qualified</p> <p>Operating Temperature Range (°C): -55 to +125</p>					
 	<p>CAPACITOR FILTERS, FEEDTHROUGH, ELECTROMAGNETIC INTERFERENCE SUPPRESSION, HERMETICALLY AND NON-HERMETICALLY SEALED, PI-, C-, AND L- TYPES, BASED ON TYPES SFC, SFL, AND SFP</p>		<p>Current Validity of Qualification</p>		Page
			<p>Certificate No.</p> <p>252 C</p>	<p>Valid Until</p> <p>March 2008</p>	<p>05-01</p> <p>001 A</p>

Types covered by certificate

Style	Detail Spec.	Variants	Capacitance Range (nF)	Rated Current (A)	Rated Voltage (V)
SFP 040	3008/014	01 to 40	0.75, 0.16, 1.6, 2.4, 4.32, 44.8	10 (DC & 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 35.20	10	35 to 200
SFP 100	3008/028	01 to 06	0.16 to 1 312.0	10	50 to 300
SFP 060	3008/030	01 to 28	2.4 to 89.6	10	35 to 500

Style	Detail Spec.	Variants	Capacitance Range (pF)	Rated Current (A)	Rated Voltage (V)
SFC 030	3008/020	01 to 12	470 to 22 000	1.0 to 5.0	25 to 200
SFC 060	3008/026	01 to 06	680 to 220 000	10	25 to 200
SFC 100	3008/027	01 to 06	1000 to 1 000 000	10	25 to 200
SFC 035	3008/031	01 to 06	470 to 22 000	10	25 to 200
SFC 040	3008/032	01 to 12	470 to 22 000	10	25 to 200
SFC 060	3008/033	01 to 12	680 to 220 000	10	25 to 200

Style	Detail Spec.	Variants	Capacitance Range (nF)	Rated Current (A)	Rated Voltage (V)
SFL 100	3008/029	01 to 48	17.6 to 1 600	5, 10, 15	40 to 300



CAPACITORS FILTERS, FEEDTHROUGH,  
ELECTROMAGNETIC INTERFERENCE SUPPRESSION,  
HERMETICALLY AND NON-HERMETICALLY SEALED,  
PI-, C-, AND L- TYPES, BASED ON SERIES SFC, SFL, AND SFP

Current Validity of Qualification

Certificate No.

252 C

Valid Until

March 2008

Page

05-01

001 B

Section 06

Component Type: Fuses

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

## Section 07

## Component Type: Inductors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
07			PowerFixed, RF	
	07-01-001	241 C	Types MSCI 10000, 12000, 20000	Microspire
	07-01-002	276	Types SESI	Microspire



Types covered by similarity : Remarks :

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3201		Microspire Illange France	Qualification	CNES	Apr 1997
Detail ESCC 3201/008			Extension	CNES	Nov 2000
			Extension	CNES	Mar 2003
			Extension	CNES	Dec 2005

Characteristics Variants 01 to 04 are qualified

Series No.	Range ( $\mu$ H)	Tolerance ( $\pm\%$ )	$Q_{min.}$	Min. SRF $f_r$ (MHz)	Max. DCR, $R_{dc}$ ( $\Omega$ )	Rated DC Current, $I_R$ (mA)	Case Size
10k	0.0101 - 10	2.0, 5.0, 10	60 - 42	1000- 33	0.025 - 3.3	750 - 87	A
12k	12 - 1000	10	42 - 12	26 - 1.5	2.0 - 120	110 - 15	B
20K	0.010 - 1000	10	60 - 30	1000 - 1.7	0.04 - 80	1000 - 25	C

Dielectric Withstanding Voltage (DWV): 200 Vrms  
Operating Temperature Range ( $^{\circ}$ C): -55 to +125

 	<b>INDUCTORS, FIXED, RF, MINIATURE, MOULDED, SURFACE MOUNT, BASED ON SERIES MSC1 10K, 12K, AND 20K</b>	Current Validity of Qualification		Page 07-01 001
		Certificate No.  241 C	Valid Until  December 2007	



Types covered by similarity :	Remarks : Proposal for maintenance of qualification testing is underway. Completion is expected in November 2006.
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Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3201  Detail ESCC 3201/009	Microspire Illange France	Qualification	CNES	Apr 2004

Characteristics Variants 01 to 05 are qualified

Series No.	Range (µH)	Tolerance (±%)	Max. DC Resistance, R <sub>dc</sub> (mΩ)	Rated DC Current, I <sub>R</sub> (A)	Peak Current I <sub>P</sub> (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

 	<b>INDUCTORS, POWER,          MOULDED, SURFACE MOUNT,          BASED ON SERIES SESI</b>	Current Validity of Qualification		Page
		Certificate No.  276	Valid Until  April 2006	07-01  002

## Section 08

## Component Type: Microcircuits

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
08-02			Digital C-MOS	
	08-02-001-2 A to E	73 K	4000 B Series	ST Microelectronics
	08-02-002-2 A to F	190 F	54HCMOS Series	ST Microelectronics

Types covered by similarity : See next pages		Remarks : Refer to: <a href="https://escies.org/public/escs/comp_no.html">https://escies.org/public/escs/comp_no.html</a> for information concerning the ESCC Component Number and its marking.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 9000  Detail ESCC: See types covered by similarity		ST Microelectronics Rennes France	Qualification	ESTEC	Apr 1981
			Extension	CNES	Jan 1981
			Extension	CNES	Dec 1984
			Extension	CNES	May 1987
			Extension	CNES	Apr 1990
Characteristics  Package Types:  Ceramic Dual-in-Line  Ceramic Flat Pack  Leadless Chip Carrier  SOIC 14, 16, 24			Extension	CNES	Oct 1992
			Extension	CNES	Apr 1995
			Extension	CNES	Apr 1997
			Extension	CNES	Apr 1999
			Extension	CNES	May 2001
			Extension	CNES	Nov 2002
			Extension	CNES	Nov 2005
 		MICROCIRCUITS, DIGITAL, C-MOS-B, 4000 B SERIES	Current Validity of Qualification		Page
			Certificate No.	Valid Until	08-02
			73 K	November 2007	001-2A



## Types covered by similarity

ESCC Spec. No.	Description	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	Presetable 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
9205/010	BCD-to-decimal or binary-to-octal decoder	4028B
9204/025	Presetable 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



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Types covered by similarity

ESCC Spec. No.	Description	Component Type
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
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



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Types covered by similarity

ESCC Spec. No.	Description	Component Type
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
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



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Types covered by similarity

ESCC Spec. No.	Description	Component Type
9408/011	Dual 1-of-4 decoder/demultiplexer	4555B
9408/025	Dual 1-of-4 decoder/demultiplexers (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/driver	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-line-to-1-line data selector/multiplexer with 3-state output	40257B



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Types covered by similarity : See next pages		Remarks : Refer to: <a href="https://escies.org/public/escsc/comp_no.html">https://escies.org/public/escsc/comp_no.html</a> for information concerning the ESCC Component Number and its marking.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 9000  Detail ESCC: See types covered by similarity.		ST Microelectronics Rennes France	Qualification	CNES	Nov 1992	
			Extension	CNES	Apr 1995	
			Extension	CNES	Apr 1997	
			Extension	CNES	Apr 1999	
			Extension	CNES	May 2001	
			Extension	CNES	Nov 2002	
			Extension	CNES	Nov 2005	
Characteristics  Qualified Packages: - Ceramic Dual In Line - Ceramic Flat Pack - Leadless Chip Carrier - SOIC 14, 16, 20, 24  <b>NOTES</b> 1. These parts have successfully passed radiation testing to 50 krad.						
 		MICROCIRCUITS, DIGITAL, MONOLITHIC, HIGH SPEED CMOS, 54HC AND 54HCT SERIES			Current Validity of Qualification	Page
		Certificate No.  190 F	Valid Until  November 2007	08-02  002-2A		

## Types covered by similarity

ESCC Spec. No.	Description	Component Type	Note
9201/105	Quad 2-input NAND gate	54HC00	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



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## Types covered by similarity

ESCC Spec. No.	Description	Component Type	Note
9306/048	Dual J-K positive edge triggered flip-flop with preset and clear	54HC109	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 to 4 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	Synchronous 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
9306/043	8-bit PISO shift register	166	1
9306/052	Hex D-type edge-triggered flip-flop with clear	174	1



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Types covered by similarity

ESCC Spec. No.	Description	Component Type	Note
9203/052	Quad D-type edge-triggered flip-flop with clear	54HC175	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
9202/075	4-bit binary full adder with fast carry	283	1
9401/052	Hex bus buffer with 3-state output	365	1



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Types covered by similarity

ESCC Spec. No.	Description	Component Type	Note
9401/044	Hex bus buffer with 3-state output	54HC367	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



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Types covered by similarity

ESCC Spec. No.	Description	Component Type	Note
9401/037	Hex buffer/converter with inverted output	54HC4049	1
9401/038	Hex buffer/converter	4050	1
9408/064	Analogue multiplexer/demultiplexer	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	54HCT74	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	



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## Section 09

## Component Type: Relays

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
09-01			Non-Latching, 28Vdc Contact Rating	
	09-01-002	02 H	Type GP5	LEACH
	09-01-005	239 B	Type E	LEACH
09-02			Latching, 28Vdc Contact Rating	
	09-02-002	13 H	Type GP2	LEACH
	09-02-006	240 B	Type D	LEACH
09-03			Latching, 50Vdc Contact Rating	
	09-03-001	93 G	Type GP250	LEACH

Types covered by similarity :  Variants 01 to 08 are qualified Coil Voltages 6 and 12 Vdc		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3601		LEACH International Europe Niort France	Qualification	CNES	Apr 1978		
Detail ESCC 3601/003			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		
Characteristics  Contact Rating : 2 A at 28 Vdc Contact Configuration: 2PDT Package Type: Half-crystal can Coil Voltage 26.5 Vdc Operating Temperature Range (°C): -65 to +125			Extension	CNES	Jun 2005		
 		RELAY, NON-LATCHING, ELECTROMAGNETIC, TYPE GP 5			Current Validity of Qualification		Page
					Certificate No.  02 H	Valid Until  June 2007	09-01  002

Types covered by similarity :		Remarks : The manufacturer has not initiated the maintenance of qualification testing.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3601  Detail ESCC 3601/012		LEACH International Europe Niort France	Qualification  Extension  Extension	CNES  CNES  CNES	Apr 1997  Sep 2000  Jan 2004	
Characteristics: Variants 01 to 11 are qualified  Contact Rating : 1 A at 28 Vdc Contact Configuration: 2PDT Package Type: 1/6 crystal can Coil Voltage: 6, 12, 26.5 Vdc Operating Temperature Range (°C): -65 to +125						
 		RELAY, NON-LATCHING, ELECTROMAGNETIC, TYPE E		Current Validity of Qualification		Page
				Certificate No.	Valid Until	09-01
			239 B	January 2006	005	

Types covered by similarity :  Variants 01 to 08 are qualified Coil Voltages 6 and 12 Vdc		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3602		LEACH International Europe Niort France	Qualification	CNES	Jan 1979	
Detail ESCC 3602/003			Extension		Feb 1981	
			Extension		Jan 1984	
			Extension		Oct 1986	
			Extension		Jul 1992	
			Extension		Jun 1995	
			Extension		Dec 1998	
			Extension		Nov 2001	
Characteristics  Contact Rating : 2 A at 28 Vdc Contact Configuration: 2PDT Package Type: half-size crystal can Coil Voltage: 26.5 Vdc Operating Temperature Range (°C): -65 to +125			Extension	CNES	Jun 2005	
 		RELAY, LATCHING, ELECTROMAGNETIC, TYPE GP 2		Current Validity of Qualification		Page
				Certificate No.	Valid Until	09-02
				13 H	June 2007	002

Types covered by similarity :

Remarks : The manufacturer has not initiated the maintenance of qualification testing.

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3602  Detail ESCC 3602/019	LEACH International Europe Niort France	Qualification  Extension  Extension	CNES  CNES  CNES	Apr 1997  Sep 2000  Jan 2004



Characteristics: Variants 01-11 are qualified

Contact Rating: 1 A at 28 Vdc  
 Contact Configuration: 2PDT  
 Package Type: 1/6 crystal can  
 Coil Voltage: 6, 12 and 26.5 Vdc  
 Operating Temperature Range (°C): -65 to +125



RELAY,  
 LATCHING, ELECTROMAGNETIC,  
 TYPE D

Current Validity of Qualification		Page
Certificate No.  240 B	Valid Until  January 2006	09-02  006


Types covered by similarity :  Variants 01 to 08 are qualified Coil Voltage 12 Vdc		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3602		LEACH International Europe Niort France	Qualification	ESTEC	Feb 1982		
Detail ESCC 3602/010			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		
Characteristics  Contact Rating: 2 A at 50 Vdc (100 000 ops) Contact Configuration: 2PDT Package Type: half-crystal can Coil Voltage: 26.5 Vdc Operating Temperature Range (°C): -65 to +125							
 		RELAY, LATCHING, ELECTROMAGNETIC, TYPE GP 250			Current Validity of Qualification		Page
					Certificate No.  93 G	Valid Until  June 2007	09-03  001



## Section 10

## Component Type: Resistors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
10-02			Fixed, Film	
	10-02-006	256 C	Surface Mount, Type MS1	Vishay Electronic (Selb)
10-04			Fixed, Film, High Precision	
	10-04-001	116 J	Type RNC 90	Vishay S.A. Sfernice
10-08			Chip	
	10-08-002	265 B	Type P HR	Vishay S.A. Sfernice
10-09			Flexible, Foil, Heaters	
	10-09-001-1	184 F	Single & Double Layer	IRCA
10-10			Network	
	10-10-001	235 D	Single-in-Line	Vishay S.A. Sfernice

Types covered by similarity :				Remarks :			
Tolerance ( $\pm$ %) = 0.1, 0.5, 1.0							
Variants 01 to 08 inclusive are qualified							
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date	
Generic ESCC 4001		VISHAY ELECTRONIC Division DRALORIC Selb Germany		Qualification	DLR	Oct 1999	
Detail ESCC 4001/022				Extension	DLR	Oct 2001	
				Extension	DLR	Oct 2003	
				Extension	DLR	Nov 2005	
Characteristics : Critical R= 160 k $\Omega$				Operating Temperature Range, ( $^{\circ}$ C): -55 to + 125			
Range ( $\Omega$ )		Tol. ( $\pm$ %)	TC ( $\pm$ ppm/ $^{\circ}$ C)	Value Series			
43.2	- 1.004 M	0.1	50	E96			
10.0	- 1.0004 M	0.5					
2.2	- 5.114 M	1.0					
43.2	- 1.004 M	0.1	25	E96			
10.0	- 1.004 M	0.5					
10.0	- 1.004 M	1.0					
43.2	- 0.2213 M	0.1	15	E96			
10.0	- 0.5113 M	0.5					
	RESISTORS,  FILM, FIXED, SURFACE MOUNT, NON-HERMETICALLY SEALED,  BASED ON TYPE MS1				Current Validity of Qualification		Page
					Certificate No.	Valid Until	10-02 006
					256 C	November 2007	

Types covered by similarity :  
 Tolerances:  $\pm 0.02, 0.05, 0.1, 0.2, 0.5, 1\%$   
 Variants 03, 04, 08

Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4001	Vishay S.A. Division Sfernice Nice France	Qualification	CNES	Dec 1983
Detail ESCC 4001/011		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		

Characteristics: Variants 03, 04, 07, 08 are qualified Values: E192 series

Style	Detail Spec.	Variant	Range ( $\Omega$ )	Tol. (%)	TC (ppm/ $^{\circ}$ C)	Power Rating (W)	Max. Voltage (V)
RNC 90 (RS92N)	4001/011	07	50 - 100k	0.02 0.05 0.1 0.2 0.5 1.0	$\pm 5, \leq 125^{\circ}\text{C}$ $\pm 10, \leq 125^{\circ}\text{C}$ $\pm 10, >125^{\circ}\text{C}$ and $\leq 175^{\circ}\text{C}$	0.5 @ $70^{\circ}\text{C}$ 0.3 @ $125^{\circ}\text{C}$	300

Operating Temperature Range ( $^{\circ}$ C): - 55 to + 175



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

Current Validity of Qualification		Page
Certificate No. 116 J	Valid Until April 2008	10-04 001

Types covered by similarity :  
 Variants 01, 02, and 03 are qualified

Tolerances:  $R \leq 100\Omega$   $\pm 0.1/0.05\%$  TC :  $\pm 25 \text{ ppm}/^\circ\text{C}$   
 $100 < R \leq 250\Omega$   $\pm 0.1/0.05/0.02\%$   
 $R > 250\Omega$   $\pm 0.1/0.05/0.02/0.01\%$ .

Remarks :

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4001		Vishay S.A. Division Sfernice Nice France	Qualification	CNES	May 2001
Detail ESCC 4001/023			Extension	CNES	Oct 2003
			Extension	CNES	Feb 2006

Characteristics

Style	Range ( $\Omega$ )	Tol. ( $\pm\%$ )	TC (ppm/ $^\circ\text{C}$ )	Critical R ( $\Omega$ )	Limiting Voltage (V)	Type Variant
0603	50 - 0.2M	0.01, 0.02 and 0.05	$\pm 10$	12.25k	35	01
0805	50 - 0.25M	0.01, 0.02 and 0.05	$\pm 10$	45k	75	02
1206	50 - 1.0M	0.01, 0.02 and 0.05	$\pm 10$	40k	100	03

Operating Temperature Range ( $^\circ\text{C}$ ): -55 to 155

Lead material is Type 'E' with Type '4' finish





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

Current Validity of Qualification

Certificate No.  
 265 B

Valid Until  
 February 2008

Page  
 10-08  
 002

Types covered by similarity :		Remarks : Planning for the maintenance of qualification is underway.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 4009  Detail ESCC 4009/002		IRCA RICA Division Vittorio Veneto Italy	Qualification  Extension  Extension  Extension  Extension  Extension  Extension  Extension	ESTEC  ESTEC  ESTEC  ESTEC  ESTEC  ESTEC  ESTEC	Apr 1992  May 1994  Mar 1996  Feb 1998  Apr 2000  Aug 2002  Dec 2004	
Characteristics  Single layer and double layer heaters Maximum Ohmic density: 200 ■/cm <sup>2</sup> Tolerances: ±2, 3, 5, 10 % Resistance range: 1 Ω to 5000 ■ Heating Area: 1.6 to 1300 cm <sup>2</sup> Terminal Lead: 20, 22, 24, 26, 28, 30 AWG Temperature coefficient: (10-6/°C) : 175  Operating temperature range (°C): -65 to +200						
 		RESISTORS, HEATERS, FLEXIBLE SINGLE AND DOUBLE LAYER		Current Validity of Qualification		Page
				Certificate No.	Valid Until	10-09
				184 F	December 2006	001-1

Types covered by similarity : Remarks :



Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4005		Vishay S.A. Division Sfernice Nice France	Qualification	CNES	Oct 1996
Detail ESCC 4005/003			Extension	CNES	Apr 1999
			Extension	CNES	Jul 2001
			Extension	CNES	Dec 2003
			Extension	CNES	Feb 2006

Characteristics: Variants 01 to 07 in 6, 8, 9 and 10 pin packages are qualified

Detail Spec.	Range ( $\Omega$ )	Tolerance	TC ( $10^{-6}/^{\circ}\text{C}$ )	Power Rating of Resistors (mW)	Limiting Element Voltage ( $U_L$ )
4005/003	46.4 to 1.0 M	$R \leq 100\Omega, \pm 2.0\%$ $R > 100\Omega, \pm 2.0\%$	$\pm 150$	180 for individual R  100 for parallel Rs	100 V

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

Values: E48 series

 	<b>RESISTORS, NETWORKS, THICK FILM, SINGLE-IN-LINE PACKAGES</b>	Current Validity of Qualification		Page 10-10 001
		Certificate No.  235 D	Valid Until  February 2008	

## Section 11

## Component Type: Thermistors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
11-01			NTC	
	11-01-001	266 C	Type G15K4D489 and *K3A35*	Betatherm

**QPL**

SECTION 11-\*\*: INDEX OF THERMISTORS

REP005 Updated on 15-Nov-06

Types covered by similarity :

Remarks :



Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 4006  Detail ESCC 4006/013 ESCC 4006/014	Betatherm Ireland Galway Ireland	Qualification  Extension Extension Extension	ESTEC  ESTEC ESTEC ESTEC	July 2001  Jan 2002 Sep 2004 Nov 2006

Characteristics

4006/013: Variants 01 to 05 are qualified



4006/014: Variant 08 is qualified

Operating Temperature Range (°C): -55 to +115 for 4006/013 and -60 to +160 for 4006/014

 <p>European Space Components Coordination</p> 	<p>THERMISTORS,             (THERMALLY SENSITIVE RESISTORS), NTC,             BASED ON TYPES G15K4D489 AND *K3A35*</p>	Current Validity of Qualification		Page
		Certificate No.  266 C	Valid Until  November 2008	11-01  001



Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
12-01			Low Power, NPN	
	12-01-002-3A-B	233 F	Types NPN	ST Microelectronics
	12-01-003-1	106 K	Type 2N2369A	ST Microelectronics
12-02			Low Power, PNP	
	12-02-002-3A-B	234 F	Types PNP	ST Microelectronics
12-10			RF/Microwave, NPN, Low Power, Low Noise	
	12-10-001	230 B	Types BFY 193	Infineon
	12-10-002	245 B	Types BFY 405-450	Infineon
12-15			Microwave, Gallium Arsenide, Power	
	12-15-001	246 A	Types CLY 32	Infineon
12-16			Microwave, Gallium Arsenide	
	12-16-001	213 B	Types CFY66 & 67, High Electron Mobility, Low Noise	Infineon

Types covered by similarity : 2N3019				Remarks :																													
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date																											
Generic ESCC 5000  Detail Please refer to the next page.		ST Microelectronics Rennes France		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																											
Characteristics  Maximum Ratings:  <table border="0" style="width:100%; text-align:center;"> <tr> <td><u>2N2222A</u></td> <td><u>2N2484</u></td> <td><u>2N2219A</u></td> <td><u>2N5551</u></td> <td><u>2N3700</u></td> <td><u>2N3019</u></td> <td><u>2N5154</u></td> <td><u>BUX 77</u></td> <td><u>2N 2920A</u></td> </tr> <tr> <td>V<sub>CBO</sub> (V): 75</td> <td>60</td> <td>75</td> <td>BV<sub>CBO</sub> (V): 180</td> <td>140</td> <td>140</td> <td>100</td> <td>100</td> <td>60</td> </tr> <tr> <td>V<sub>CEO</sub> (V): 40</td> <td>60</td> <td>40</td> <td>BV<sub>CEO</sub> (V): 160</td> <td>80</td> <td>80</td> <td>80</td> <td>80</td> <td>60</td> </tr> </table> Packages : TO-18, TO-39, TO-66, TO-77, TO-257, LCCC3, LCCC6 and SMD.5  Operating Temperature Range (°C): - 65 to + 200							<u>2N2222A</u>	<u>2N2484</u>	<u>2N2219A</u>	<u>2N5551</u>	<u>2N3700</u>	<u>2N3019</u>	<u>2N5154</u>	<u>BUX 77</u>	<u>2N 2920A</u>	V <sub>CBO</sub> (V): 75	60	75	BV <sub>CBO</sub> (V): 180	140	140	100	100	60	V <sub>CEO</sub> (V): 40	60	40	BV <sub>CEO</sub> (V): 160	80	80	80	80	60
<u>2N2222A</u>	<u>2N2484</u>	<u>2N2219A</u>	<u>2N5551</u>	<u>2N3700</u>	<u>2N3019</u>	<u>2N5154</u>	<u>BUX 77</u>	<u>2N 2920A</u>																									
V <sub>CBO</sub> (V): 75	60	75	BV <sub>CBO</sub> (V): 180	140	140	100	100	60																									
V <sub>CEO</sub> (V): 40	60	40	BV <sub>CEO</sub> (V): 160	80	80	80	80	60																									
 		TRANSISTORS,  LOW AND HIGH POWER,  NPN			Current Validity of Qualification		Page																										
					Certificate No.  233 F	Valid Until  March 2008	12-01  002-3 A																										

Types covered by this certificate

ESCC Spec. 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, SMD.5	01, 02, 04, 05, 06
5203/016	BUX 77ESY	TO-257	06, 07
5207/002	2N 2920A	TO-77, and LCCC6	06, 09, 12, 15
5201/011	2N3019	TO-39	03, 04



TRANSISTORS,  
 LOW AND HIGH POWER,  
 NPN



Current Validity of Qualification



Certificate No.  
 233 F

Valid Until  
 March 2008

Page

12-01  
 002-3 B

Types covered by similarity :		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5000  Detail ESCC 5201/006		ST Microelectronics Rennes France	Qualification  Requalification  Extension  Extension  Extension  Extension  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES  CNES	Feb 1983  Jul 1987  Apr 1990  Aug 1992  Jun 1995  Sep 1996  Sep 1997  Nov 1999  Nov 2001  Dec 2003  Mar 2006	
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 $T_{amb} + 25^\circ C$ ; $BV_{CBO}$ : 40 V; $BV_{CEO}$ : 15 V; $I_C$ : 500 mA, 10 $\mu$ sec pulse Package Types: TO-18 and LCCC3 Operating Temperature Range ( $^\circ C$ ): -65 to +200						
 		TRANSISTORS,  LOW POWER, NPN,  TYPE 2N 2369A		Current Validity of Qualification		Page
				Certificate No.	Valid Until	12-01
			106 K	March 2008	003-1	

Types covered by similarity : 2N3350, 2N4033		Remarks :																														
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date																											
Generic ESCC 5000  Detail Please refer to the next page.		ST Microelectronics Rennes France	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																											
Characteristics  Maximum Ratings:  <table border="1"> <thead> <tr> <th></th> <th><u>2N2905A</u></th> <th><u>2N2907A</u></th> <th><u>2N3350</u></th> <th><u>2N3810</u></th> <th><u>2N4033</u></th> <th><u>2N5153</u></th> <th><u>BUX 78</u></th> <th><u>2N5401</u></th> </tr> </thead> <tbody> <tr> <td>BV<sub>CBO</sub> (V):</td> <td>60</td> <td>60</td> <td>60</td> <td>60</td> <td>80</td> <td>100</td> <td>100</td> <td>160</td> </tr> <tr> <td>BV<sub>CEO</sub> (V):</td> <td>60</td> <td>60</td> <td>45</td> <td>60</td> <td>80</td> <td>80</td> <td>80</td> <td>150</td> </tr> </tbody> </table> Packages : TO-18, TO-39, TO-77, TO-78, TO-257, LCCC3, LCCC6 and SMD.5 Operating Temperature Range (°C): -65 to +200			<u>2N2905A</u>	<u>2N2907A</u>	<u>2N3350</u>	<u>2N3810</u>	<u>2N4033</u>	<u>2N5153</u>	<u>BUX 78</u>	<u>2N5401</u>	BV <sub>CBO</sub> (V):	60	60	60	60	80	100	100	160	BV <sub>CEO</sub> (V):	60	60	45	60	80	80	80	150				
	<u>2N2905A</u>	<u>2N2907A</u>	<u>2N3350</u>	<u>2N3810</u>	<u>2N4033</u>	<u>2N5153</u>	<u>BUX 78</u>	<u>2N5401</u>																								
BV <sub>CBO</sub> (V):	60	60	60	60	80	100	100	160																								
BV <sub>CEO</sub> (V):	60	60	45	60	80	80	80	150																								
 		TRANSISTORS,  LOW AND HIGH POWER,  PNP		Current Validity of Qualification		Page																										
				Certificate No.	Valid Until	12-02																										
			234 F	March 2008	002-3 A																											

Types covered by this certificate

ESCC Spec. No.	Component Type	Package	Qualified Variants
5202/002	2N 2905A	TO-39	01, 02
5202/001	2N 2907A	TO-18 and LCCC3	01, 02, 04, 05
5202/014	2N 5401	TO-18 and LCCC3	01, 02, 04, 05
5204/002	2N 5153	TO-39, TO-257, SMD.5	01, 02, 04, 05, 06
5204/006	BUX 78ESY	TO-257	06, 07
5207/005	2N 3810	TO-78, and LCCC6	02, 05, 07, 09
5207/003	2N 3350	TO-77, and LCCC6	02, 03, 04, 05
5202/008	2N4033	TO-39, and LCCC3	01, 02, 04, 05




TRANSISTORS,  
LOW AND HIGH POWER,  
PNP



Current Validity of Qualification

Certificate No.  
234 F



Valid Until  
March 2008

Page  
12-02  
002-3 B

Types covered by similarity : All variants from 01 to 07 are qualified (BFY 180, 280, 181, 182, 183, 193 and 196)		Remarks : Requalification testing will be initiated following the transfer of production from the München facility.																																	
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date																														
Generic ESCC 5010  Detail ESCC 5611/006		Infineon Technologies AG München Germany	Qualification  Extension  Extension	DARA  DLR  DLR	Jun 1996  Jan 2000  Nov 2004																														
<p>Characteristics for BFY 193:</p> <table> <tr> <td><math>V_{CEO}</math> (V)max.</td> <td></td> <td>12</td> <td></td> <td></td> </tr> <tr> <td><math>V_{CBO}</math> (V)max.:</td> <td></td> <td>20</td> <td></td> <td></td> </tr> <tr> <td>hfe min./max</td> <td></td> <td>50/175</td> <td>@ <math>V_{CE}= 8.0</math> V, <math>I_C= 30</math> mA</td> <td></td> </tr> <tr> <td>NF (dB) max.</td> <td>@ 2 GHz</td> <td>2.9</td> <td>@ <math>V_{CE}= 5.0</math> V, <math>I_C= 15</math> mA</td> <td></td> </tr> <tr> <td>MAG/MSG (dB)min.</td> <td>@ 2 GHz</td> <td>12.5</td> <td>@ <math>V_{CE}= 5.0</math> V, <math>I_C= 40</math> mA</td> <td></td> </tr> <tr> <td><math>f_T</math> (GHz) min.</td> <td>@ 500 MHz</td> <td>7</td> <td>@ <math>V_{CE}= 5.0</math> V, <math>I_C= 40</math> mA</td> <td></td> </tr> </table> <p>Package: "Micro-X" Total Power Dissipation (<math>P_{tot}</math>)= 580 mW Operating Temperature Range (°C): <math>T_{op} = -65</math> to <math>+200</math></p>						$V_{CEO}$ (V)max.		12			$V_{CBO}$ (V)max.:		20			hfe min./max		50/175	@ $V_{CE}= 8.0$ V, $I_C= 30$ mA		NF (dB) max.	@ 2 GHz	2.9	@ $V_{CE}= 5.0$ V, $I_C= 15$ mA		MAG/MSG (dB)min.	@ 2 GHz	12.5	@ $V_{CE}= 5.0$ V, $I_C= 40$ mA		$f_T$ (GHz) min.	@ 500 MHz	7	@ $V_{CE}= 5.0$ V, $I_C= 40$ mA	
$V_{CEO}$ (V)max.		12																																	
$V_{CBO}$ (V)max.:		20																																	
hfe min./max		50/175	@ $V_{CE}= 8.0$ V, $I_C= 30$ mA																																
NF (dB) max.	@ 2 GHz	2.9	@ $V_{CE}= 5.0$ V, $I_C= 15$ mA																																
MAG/MSG (dB)min.	@ 2 GHz	12.5	@ $V_{CE}= 5.0$ V, $I_C= 40$ mA																																
$f_T$ (GHz) min.	@ 500 MHz	7	@ $V_{CE}= 5.0$ V, $I_C= 40$ mA																																
		<p>TRANSISTORS, MICROWAVE, SMALL SIGNAL, BIPOLAR BASED ON TYPE BFY 193</p>		Current Validity of Qualification		Page																													
				Certificate No.  230 B	Valid Until  November 2006	12-10  001																													

Types covered by similarity : All variants are qualified (BFY 405, 420, and 450)		Remarks : Requalification testing will be initiated following the transfer of production from the München facility. .				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5010		Infineon Technologies AG München Germany	Qualification	DARA	Jun 1997	
Detail ESCC 5611/008			Extension	DLR	Jan 2000	
			Extension	DLR	Dec 2003	
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, $I_C= 20$ mA NF (dB) max. @ 1.8 GHz 2.0 @ $V_{CE}= 2.0$ V, $I_C= 10$ mA $f_T$ (GHz) min. @ 1.0 GHz 18 @ $V_{CE}= 3.0$ V, $I_C= 90$ mA						
Package: "Micro-X" Total Power Dissipation ( $P_{tot}$ )= 450 mW Operating Temperature Range (°C): $T_{op} = - 65$ to + 175						
 		TRANSISTORS, MICROWAVE, SMALL SIGNAL, BIPOLAR BASED ON TYPE BFY 450			Current Validity of Qualification	Page
		Certificate No. 245 B	Valid Until December 2005		12-10 002	



Types covered by similarity :		Remarks : Requalification testing will be initiated following the transfer of production from the München facility.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 5010		Infineon Technologies AG München Germany	Qualification	DLR	Nov 1997	
Detail ESCC 5614/006			Extension	DLR	Jan 2000	
<p>Characteristics for CLY 32:</p> <p><math>V_{DS}</math> (V)max. 14  <math>V_{DG}</math> (V)max.: 16  <math>V_{GS}</math> (V)max.: -6.0</p> <p><math>P_O</math> (dBm) min. 32 @ <math>V_{DS}=9.0</math> V, <math>f=2.0</math> GHz, <math>P_{IN}=21</math> dBm, power matched  <math>\eta_{add}</math> (%) min. 45 @ <math>V_{DS}=9.0</math> V, <math>f=2.0</math> GHz, <math>P_{IN}=21</math> dBm, power matched</p> <p>Package: "MWP 25"  Total Power Dissipation (<math>P_{tot}</math>)= 7.5 W  Channel Temperature Range (°C): <math>T_{ch} = -65</math> to <math>+175</math></p>						
 		TRANSISTORS, MICROWAVE, METAL SEMICONDUCTOR FIELD EFFECT, POWER, GALLIUM ARSENIDE BASED ON TYPE CLY 32			Current Validity of Qualification	Page
		Certificate No. 246 A	Valid Until January 2002	12-15 001-1		

Types covered by similarity :  
All variants are qualified

Remarks : Requalification testing will be initiated following the transfer of production from the München facility.

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 5010	Infineon Technologies AG München Germany	Qualification	DARA	Apr 1994
Detail ESCC 5613/002		Extension	DLR	Jan 2000
ESCC 5613/004		Extension	DLR	Dec 2003



Characteristics (@ 12 GHz):

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

Package: "MICRO-X"

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



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


 	<p>TRANSISTORS, HIGH ELECTRON MOBILITY, GALLIUM ARSENIDE, MICROWAVE, LOW NOISE, SMALL SIGNAL, BASED ON TYPES CFY 66 and CFY 67</p>	Current Validity of Qualification		Page
		Certificate No. 213 B	Valid Until December 2005	12-16 001



## Section 13



## Component Type: Wires and Cables



Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
13-01			Low Frequency	
	13-01-001-1	07 L	Polyimide, Types FA-3901-1, FA 3901-2	Draka Fileca
	13-01-001-2	09 L	Polyimide, Types 1871-1872	Nexans
	13-01-001-3	132 H	Polyimide, Types 3901002**B	Axon' Cable
	13-01-003	08 L	PTFE, Types MTV-BTV	Nexans
	13-01-004-1	138 F	Polyimide, Type SPC	Gore
	13-01-004-2	219 F	Polyimide, Type SPL	Gore
	13-01-004-3	268 A	Polyimide, Type 3901019**B	Axon' Cable
	13-01-005-1	159 G	Crosslinked PTFE, Type Silver-Plated Copper	Tyco Electronics
	13-01-005-2	267 B	Crosslinked PTFE, Type Silver-Plated Copper	Axon' Cable
	13-01-008	215 F	PTFE, Polyimide / PFA Insulated, Type SPP	Gore
	13-01-009	216 E	PTFE, Polyimide / PFA Insulated, Shielded, Type SPM	Gore
	13-01-010-1	229 E	Polyimide, Insulated, Shielded, Type SPLD, Drain Wire	Gore
	13-01-011-1	257 B	Crosslinked Modified ETFE, Type Silver-Plated Copper, Lightweight	Tyco Electronics
13-02			Coaxial, RF, Flexible	
	13-02-001	24 M	PTFE/Polyimide, Type 50 CIS	Nexans
	13-02-002-1	255 C	Coaxial, Triaxial, Balanced Shielded Line	Gore

Types covered by similarity :  FA 3901-1 Variants 24 to 47 are qualified FA 3901-2 Variants 31 to 73 are qualified		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3901  Detail ESCC 3901/001 3901/002		Draka Fileca Ste-Genevieve France	Qualification	CNES	Jan 1979	
Characteristics  Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -100 to +200			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				
 		WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION, BASED ON TYPES FA 3901-1, FA 3901-2		Current Validity of Qualification		Page
				Certificate No.	Valid Until	13-01 001-1
				07 L	February 2008	



Types covered by similarity :		Remarks :			
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			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	
Generic ESCC 3901		Nexans Draveil France	Qualification	CNES	Jan 1979
Detail ESCC 3901/001			Extension	CNES	Sep 1981
3901/002			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	
Characteristics  Voltage Rating, maximum (Vrms) : 600 Temperature Range (°C): -100 to +200					
 <p><b>ESCC</b> European Space Components Coordination</p> <p><b>QPL</b></p>	<p>WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION, BASED ON TYPES 1871 - 1872</p>		Current Validity of Qualification		Page
			Certificate No.	Valid Until	13-01
		09 L	November 2007	001-2	



Types covered by similarity :		Remarks : Maintenance of qualification activities are in progress- planning is to be confirmed.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3901  Detail ESCC 3901/001 3901/002		AXON' CABLE Montmirail France	Qualification	ESTEC	Dec 1985	
Characteristics  Voltage Rating, maximum (Vrms) : 600 Temperature Range(°C): -100 to +200			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	
			 		Current Validity of Qualification	
		Certificate No. 132 H			Valid Until October 2006	13-01 001-3
WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION, BASED ON TYPES 3901001**B and 3901002**B						



Types covered by similarity : Variants 01 to 78 are qualified - MTV - BTV - MTV/G - BTV/G - MTV/BF/G - BTV/BF/G		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901  Detail ESCC 3901/013		Nexans Draveil France	Qualification	CNES	Jan 1979
Characteristics  Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -100 to +200			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
		 	WIRES AND CABLES, LOW FREQUENCY, PTFE/POLYIMIDE INSULATION, BASED ON TYPES MTV-BTV		Current Validity of Qualification
Certificate No.  08 L	Valid Until  November 2007				13-01  003



Types covered by similarity : Variants 01-66 are qualified		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901		W.L. Gore & Co Pleinfeld Germany	Qualification	DLR	Aug 1986
Detail ESCC 3901/009			Extension	ESTEC	Dec 1988
			Extension	DARA	Jul 1991
			Extension	DARA	Aug 1993
			Extension	DARA	Feb 1996
			Extension	DLR	Feb 1998
			Requalification	DLR	Nov 2004
Characteristics  Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -150 to +150					
 		WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION BASED ON TYPE SPC 2110			Current Validity of Qualification
		Certificate No.  138 F	Valid Until  November 2006	Page 13-01 004-1	





Types covered by similarity : Variants 1-94 are qualified		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3901		W.L. Gore & Co Pleinfeld Germany	Qualification	DARA	Nov 1994	
Detail ESCC 3901/019			Extension	DARA	Nov 1996	
			Extension	DLR	Oct 1998	
			Extension	DLR	Oct 2000	
			Extension	DLR	Nov 2002	
			Extension	DLR	Nov 2004	
			Extension	DLR	Oct 2006	
Characteristics  Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -200 to +200						
 		WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION BASED ON TYPE SPL			Current Validity of Qualification	Page
		Certificate No.  219 F		Valid Until  October 2008	13-01  004-2	



Types covered by similarity : Variants of construction AWG 12 to 28		Remarks : Maintenance of qualification activities are in progress- planning is to be confirmed.					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3901		AXON' CABLE Montmirail France	Qualification	CNES	Jun 2002		
Detail ESCC 3901/019			Extension	CNES	Sep 2004		
Characteristics  AWG 12 to 28 inclusive are qualified          Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -200 to +200							
 		WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION BASED ON TYPE 3901019**B			Current Validity of Qualification		Page
					Certificate No.  268 A	Valid Until  September 2006	13-01  004-3



Types covered by similarity :  AWG 28 based variants are not qualified: variants 02, 12, 22, 32, 42, 52, 62 and 72		Remarks :  This product is not intended for manned space applications.				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3901		Tyco Electronics Dorcan, Swindon England	Qualification	RAE	Feb 1989	
Detail ESCC 3901/012			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 2007	
Characteristics  Maximum voltage: 600 Vrms Operating temperature range (°C): -100 to +200						
 		WIRES AND CABLES, LOW FREQUENCY, 600V, SILVER-PLATED COPPER, EXTRUDED CROSSLINKED FLUOROPOLYMER INSULATION, BASED ON TYPE 55/995X		Current Validity of Qualification		Page
				Certificate No.	Valid Until	13-01
				159 G	November 2007	005-1

Types covered by similarity : All variants based on qualified variants		Remarks :  This product is not intended for manned space applications. Maintenance of qualification activities are in progress- planning is to be confirmed.		
Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901	AXON' CABLE Montmirail France	Qualification	CNES	Mar 2002
Detail ESCC 3901/012		Extension	CNES	Feb 2003
		Extension	CNES	Sep 2004
Characteristics  Variant 03 (AWG 26), 06 (AWG 20), and 54 (2 cores AWG 24 with shield) are qualified  Wire code ISO 2635, 006  Voltage Rating, maximum (Vrms) : 600 Temperature Range(°C): -100 to +200				
 	WIRES AND CABLES, LOW FREQUENCY, 600V, SILVER-PLATED COPPER, EXTRUDED CROSSLINKED FLUOROPOLYMER INSULATION BASED ON TYPE P515643A	Current Validity of Qualification		Page
		Certificate No.  267 B	Valid Until  September 2006	13-01  005-2



Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3901  Detail ESCC 3901/017		W.L. Gore & Co Pleinfeld Germany	Qualification	DARA	Jul 1994
Characteristics  Voltage Rating, maximum, (Vrms): 600V Temperature Range, (°C): -200 to +200  Expanded PTFE, extruded polyimide/fluorthermoplast insulation			Extension	DARA	Sep 1996
			Extension	DLR	Aug 1998
			Extension	DLR	Aug 2000
			Extension	DLR	Aug 2002
			Extension	DLR	Nov 2004
			Extension	DLR	Aug 2006
 <b>QPL</b>			Current Validity of Qualification		Page
		Certificate No. 215 F	Valid Until August 2008	13-01 008	
		POWER WIRES FOR CRIMPING, LOW FREQUENCY,  BASED ON TYPE SPP			



Types covered by similarity : Variants 01 to 88 are qualified.		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3901  Detail ESCC 3901/018		W.L. Gore & Co Pleinfeld Germany	Qualification  Extension  Extension  Extension  Extension  Extension	DARA  DARA  DLR  DLR  DLR  DLR	Jul 1994  Sep 1997  Aug 1999  Aug 2001  Aug 2003  Nov 2005	
Characteristics  Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -200 to +200  Expanded PTFE, polyimide / FEP, sintered PTFE insulated wires. Expanded PTFE, extruded polyimide / fluorothermoplast insulated cables, shielded and jacketed.						
		WIRES AND CABLES, LOW FREQUENCY, INSULATED, POLYIMIDE/FLUOROTHERMOPLAST, BASED ON TYPE SPM		Current Validity of Qualification		Page
				Certificate No.	Valid Until	13-01
			216 E	November 2007	009	

Types covered by similarity : All variants (01 to 41) are qualified		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3901		W.L. Gore & Co Pleinfeld Germany	Qualification	DARA	Feb 1996	
Detail ESCC 3901/021			Extension	DLR	Feb 1998	
			Extension	DLR	Feb 2000	
			Extension	DLR	Feb 2002	
			Extension	DLR	Feb 2004	
			Extension	DLR	Feb 2006	
Characteristics  Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -200 to +200						
 		POLYIMIDE INSULATED SHIELDED CABLES WITH DRAIN WIRE,  LOW FREQUENCY, BASED ON TYPE SPLD			Current Validity of Qualification	Page
		Certificate No.  229 E		Valid Until  February 2008		13-01  010-1

Types covered by similarity : 3901/020: All variants (01 - 80) 3901/022: All variants (01 - 24)		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3901  Detail ESCC 3901/020 ESCC 3901/022		Tyco Electronics Dorcan, Swindon England	Qualification	DERA	Oct 1999		
			Extension	QinetiQ	Jan 2002		
			Extension	QinetiQ	Jan 2005		
Characteristics  Wires and Cables variants consists 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							
 		WIRES AND CABLES, LOW FREQUENCY, 600V, SILVER-PLATED COPPER, EXTRUDED CROSSLINKED MODIFIED ETFE, LIGHTWEIGHT			Current Validity of Qualification		Page
					Certificate No.	Valid Until	13-01
			257 B	January 2007	011-1		



Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3902  Detail ESCC 3902/001		Nexans Draveil France	Qualification  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	July 1979  Feb 1982 July 1984 Mar 1987 July 1989 Sept 1991 Aug 1993 Sep 1995 Aug 1997 Jan 1998 Aug 1999 Aug 2001 Aug 2003 Nov 2005
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					
 		WIRES AND CABLES, RF COAXIAL,  PTFE/POLYIMIDE INSULATION,  BASED ON TYPE 50 CIS	Current Validity of Qualification		Page
			Certificate No.  24 M	Valid Until  November 2007	13-02  001

Types covered by similarity :  Variants 03 to 06, 10 to 12, 13, and 20 to 25 are qualified		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESCC 3902		W.L. Gore & Co Pleinfeld Germany	Qualification	DLR	Jan 1999	
Detail ESCC 3902/002			Extension	DLR	Feb 2001	
			Extension	DLR	Feb 2003	
			Extension	DLR	Mar 2005	
Characteristics  Variants encompass coaxial, triaxial, and balanced shielded line  Operating Voltage (Continuous), maximum ratings, (Vrms): Variant 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						
 		WIRES AND CABLES,  RADIO FREQUENCY, FLEXIBLE, COAXIAL,  TRIAxIAL AND SYMMETRIC		Current Validity of Qualification		Page
				Certificate No.  255 C	Valid Until  March 2007	13-02  002-1

## Section 14

## Component Type: Miscellaneous

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
14-01			Passive Devices, RF	
	14-01-002-2	185 C	Coaxial Loads, to 22 GHz	Radiall
	14-01-004	178 D	Attenuators, Type R413	Radiall
14-03			Switches	
	14-03-003	275 A	Thermostatic, Bimetallic	COMEPA

**ESCC**

European Space Components Coordination

**QPL**

SECTION 14-\*\*: MISCELLANEOUS

REP005 Updated on 15-Nov-06

Types covered by similarity :

Remarks :

Procurement Specifications Issues in effect on certification date	Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESCC 3403	RADIALL La Verpillière France	Qualification	CNES	Jul 1992
Detail ESCC 3403/006		Extension	CNES	Jun 1997
		Extension	CNES	Jan 2002
		Extension	CNES	Apr 2005

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



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)≤18.4	18.4<f(GHz)≤22
1	1.05	1.10	1.15	1.20
2	1.05	1.15	1.20	1.25



PASSIVE DEVICES, R.F. COAXIAL LOADS, 0 - 22 GHZ  
BASED ON TYPE R4404

Current Validity of Qualification		Page
Certificate No. 185 C	Valid Until April 2007	14-01 002-2

Types covered by similarity : Variants 01 to 31		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3403		RADIALL La Verpillière France	Qualification	CNES	Jan 1991		
Detail ESCC 3403/005			Extension	CNES	Jan 1994		
			Extension	CNES	Jun 1997		
			Extension	CNES	Mar 2002		
			Extension	CNES	Apr 2005		
Characteristics  Frequency range (GHz): 0 - 22 Attenuation (dB): 0 - 20 Temperature range (°C): -55 to +125							
 		R.F. ATTENUATORS FIXED, COAXIAL BASED ON TYPE R413			Current Validity of Qualification		Page
					Certificate No. 178 D	Valid Until April 2007	14-01 004

Types covered by similarity : Variants 01 to 06 are qualified		Remarks :					
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date		
Generic ESCC 3702		COMEPA BAGNOLET France	Qualification	CNES	March 2004		
Detail ESCC 3702/001			Re-qualification	CNES	August 2005		
Characteristics  Range Of Components: Grade 1 and Grade Y  Maximum Ratings:  Rated Current (I <sub>R</sub> ): 4 A (30 V <sub>dc</sub> resistive)  Operating Temperature Range (°C): -50 to +150							
 		SWITCHES, THERMOSTATIC, BIMETALLIC, SPST,  OPENING CONTACT, BASED ON TYPE Th 47			Current Validity of Qualification		Page
					Certificate No.	Valid Until	14-03
			275 A	August 2007	003		