



**european space agency  
agence spatiale européenne**

**FINAL ESA/SCC  
QUALIFIED PARTS LIST**

**Updated 15-Oct-2002**



**space components  
coordination group**

General Information	
As affected	
Section/Page No.	Description
Cover Page	Title
Page 2	Para. 3.1, 3.2: web address changed
Page 2	Para. 4: Final issue of QPL
Section 02	Index of Connectors
02-05-001-1	MDM Series, Rectangular from ITT Cannon
02-05-002-1	MTB Series, Rectangular from ITT Cannon
Section 03	Index of Crystals
03-01-002	TO-8 Can from C-MAC
Section 08	Index of Microcircuits
08-02-001-2B-C	Type CMOS B Series from ST Microelectronics



**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Oct-02**

General Information		
As affected		
Section/Page No.	Description	
Section 01	Index of Capacitors	Amended
01-01-006	Type II, High Voltage from AVX (N.I.)	Extended
01-04-001-2	Type CLR 79 from Arcotronics	Extended
01-05-001-1	Type HT86PS from Eurofarad	Amended
01-05-002-1	Type KM94S from Eurofarad	Added
01-05-003-1	Type PM94S from Eurofarad	Added
Section 02	Index of Connectors	Amended
02-04-001	SMA Series from Radiall	Extended
Section 04	Index of Diodes	Amended
04-01-005-1	Power Rectifier, 1N5615,& 1N5617 from Microsemi	Deleted
Section 10	Index of Resistors	Amended
10-09-001-1	Single & Double Layer from IRCA	Extended
Section 13	Index of Wires and Cables	Amended
13-01-008	PTFE, Polyimide / PFA Insulated,Type SPP from Gore	Extended
Section 14	Index of Miscellaneous	Amended
14-03-002	Microswitches, Series T3 from ABB CONTROL	Deleted



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

**Changes of : 15-Sep-02**

	General Information	
As affected		
Section/Page No.	Description	
Section 01	Index of Capacitors	
01-01-006	Type II, High Voltage from AVX (N.I.)	Amended
01-02-003-1	Type I, High Frequency from Tekelec Temex	Amended
01-02-004-1	Type II, High Voltage from AVX (N.I.)	Amended
01-03-004	Type TAJ from AVX (GB)	Spec Revision
01-04-001-2	Type CLR 79 from Arcotronics	Amended
Section 02	Index of Connectors	
02-01-001-1	D*M Series, Rectangular from ITT Cannon	Spec Revision
02-04-001	SMA Series from Radiall	Amended
02-05-001-1	MDM Series Rectangular from ITT Cannon	Spec Up Issue
Section 04	Index of Diodes	
04-01-005-1	Power Rectifier, 1N5615, 1N5617 from Microsemi	Amended
Section 10	Index of Resistors	
10-08-001	Type CH*P HR from Vishay S.A. Sfernice	Amended
10-09-001-1	Single & Double Layer from IRCA	Amended
10-09-001-2	Single & Double Layer from Nicolitch	Amended
Section 13	Index of Wires and Cables	
13-01-008	PTFE, Polyimide/PFA Insulated, Type SPP from Gore	Amended
13-02-002-1	Coaxial, Triaxial, Balanced Shielded Line from Gore	Amended
Section 14	Index of Miscellaneous	
14-03-002	Microswitches, Series T3 from ABB CONTROL	Amended



**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Aug-02**

	General Information	
As affected	GEC-Marconi Materials Technology is now known as Bookham Technologies Plc	
Section/Page No.	Description	
Section 01	Index of Capacitors	
01-01-001	Type I. CLC from AVX/TPC	Amended
01-01-003-1	Type II, CKR 05, CKR 06 from AVX/TPC	Amended
01-01-004-3	Type I, CCR 05, CCR 06 from AVX/TPC	Amended
01-02-001-1	Type I, from AVX /TPC	Amended
01-02-002-1	Type II from AVX/TPC	Amended
01-03-004	Type TAJ from AVX(GB)	Amended
01-04-001-2	Type CLR 79 from Arcotronics	Amended
Section 02	Index of Connectors	
02-01-001-1	D*M Series, Rectangular from ITT Cannon	Amended
02-01-001-2	D*M Series, Rectangular from Framatome Connectors	Amended
02-02-001-1	D*MA Series, Rectangular from ITT Cannon	Amended
02-02-001-2	D*MA Series, Rectangular from Framatome Connectors	Amended
02-02-005	Series I, Circular, Crimp from Framatome Connectors	Spec Up Issue
02-02-006	Series II, Circular, Crimp from Framatome Connectors	Spec Up Issue
02-02-007-1	Series III, Circular, Crimp from Framatome Connectors	Spec Revision
02-04-001	SMA Series from Radiall	Amended
02-05-001-1	MDM Series, Rectangular from ITT Cannon	Amended
02-05-002-1	MTB Series, Rectangular from ITT Cannon	Amended
Section 03	Index of Crystals	
03-01-001-1	TO-5 Can from C-MAC (F)	Amended
03-01-002	TO-8 Can from C-MAC (F)	Amended
Section 04	Index of Diodes	
04-01-005-1	Power Rectifier, 1N5802, 1N5804, 1N5617 from Microsemi	Amended
04-05-001-3	Schottky, BAS 70 from Infineon	Amended
04-05-002-2	PIN, BXY 42 from Infineon	Amended
04-05-002-3A	PIN, Ultra Fast Switching from Tekelec Temex	Amended
04-05-002-4A	PIN, Fast Switching from Tekelec Temex	Amended
04-05-003	PIN, BXY 43 and 44 from Infineon	Amended
04-05-003-2	Varactor, DH 267 from Tekelec Temex	Amended
Section 07	Index of Inductors	
07-01-001	Type MSC1 10000, 12000 from Microspire	Amended
Section 08	Index of Microcircuits	
08-07-004-A	MMIC, GaAs Standard Cell from Bookham Technologies Plc	Amended
Section 09	Index of Relays	
09-01-005	Type E from LEACH	Amended
09-02-006	Type D from LEACH	Amended
09-03-002	Type GP3A from LEACH	Amended

Continued on next page.



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

**Changes of : 15-Jul-02**

General Information	
Section/Page No.	Description
Section 10	Index of Resistors
10-02-006	Surface Mount, Type MS1 from Vishay Electronic (Selb) Spec Up Issue
10-05-004-1	Types MSP B HR from Vishay S.A. Sfernice Amended
10-08-001	Type CH*P HR from Vishay S.A. Sfernice Amended
10-08-002	Chip, Type P HR from Vishay S.A. Sfernice Spec Revision
10-09-001-1	Single & Double Layer from IRCA Amended
Section 12	Index of Transistors
12-03-006-1	Type 2N5672 from ST Microelectronics Amended
12-03-007	Type 2N2880 from SEMELAB Amended
12-10-001	Types BFY 193 from Infineon Amended
12-10-002	Types BFY 405-450 from Infineon Amended
12-15-001	Types CLY 32 from Infineon Amended
12-16-001	Types CFY66 & 67 from Infineon Amended
Section 13	Index of Wires and Cables
13-01-004-2	Polyimide, Type MTV-BTV from Gore Amended
13-01-008	PTFE, Polyimide/PFA Insulated, Type SPM from Gore Amended



**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Jul-02**

General Information	
As affected	
Section/Page No.	Description
Section 01 01-01-001 01-01-003-1 01-01-004-3	Index of Capacitors Type I, CLC from AVX/TPC Type II, CKR 05, CKR 06 from AVX/TPC Type I, CCR 05, CCR 06 from AVX/TPC
Section 03 03-01-001-1	Index of Crystals TO-5 Can from C-MAC (F)
Section 04 04-01-002-2 04-01-003-1 04-01-004-1 04-01-005-1	Index of Diodes Switching, 1N4148-1, 1N4150-1 from Microsemi Switching, 1N6638 et al, 1N3595-1 from Microsemi Switching 1N5802, 1N5804, 1N5806 from Microsemi Power Rectifiers, 1N5615 and 1N5617 from Microsemi
Section 08 08-02-002-2B-C	Index of Microcircuits Type 54HCMOS Series from ST Microelectronics
Section 12 12-01-002-3B	Index of Transistors Types NPN from ST Microelectronics
Section 13 13-01-001-3 13-01-004-3	Index of Wires and Cables Polyimide, Types 3901002**B from Axon' Cable Polyimide, Type 3901019**B from Axon' Cable
Section 14 14-03-002	Index of Micellaneous Microswitches, Series T3 from ABB Control



**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Jun-02**

General Information		
As affected		
Section/Page No.	Description	
Section 02 02-03-001-2	Index of Connectors HE 801 Series from HYPERTAC UK	Amended Extended
Section 04 04-05-003-1A-B 04-05-002-1A-B	Index of Diodes PIN and Varactors from Tyco M/A COM PIN from Tyco M/A COM	Amended Extended Deleted
Section 13 13-01-005-2	Index of Wires and Cables Crosslinked PTFE, Type Silver-Plated Copper from Axon' Cable	Amended Added
Section 14 14-01-002-2 14-01-004	Index of Miscellaneous Passive Devices, RF Coaxial Loads, to 22Ghz from Radiall Passive Devices, RF Attenuators, Type R413	Amended Re-qualified Re-qualified



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

**Changes of : 15-Apr-02**



General Information	
As affected	M/A Com is now known as Tyco Electronics UK Ltd., M/A Com Division
Section/Page No.	Description
Section 01 01-01-005 01-02-002-1 01-03-004 01-08-001-1A-E	Index of Capacitors Type II High Capacitors from AVX (N.I.) Type II from AVX/TPC Type TAJ from AVX (GB) Concentric, Air from Tekelec Temex  Spec Up Issue Spec Up Issue Spec Revision Spec Revisions
Section 02 02-02-003	Index of Connectors DBAS Series, Circular from Deutsch  Spec Revisions
Section 04 04-05-002-1A-B 04-05-003-1B	Index of Diodes PIN from Tyco Electronics, M/A Com Div. PIN and Varactors from Tyco Electronics, M/A Com Div  Amended Amended Spec Revisions
Section 07 07-01-001	Index of Inductors Type MSC1 10000, 12000 from Microspire  Spec Revision
Section 08 08-02-002-2B-F	Index of Microcircuits 54HCMOS Series from ST Microelectronics  Spec Revisions
Section 13 13-01-001-1 13-01-001-2 13-01-001-3 13-01-004-2 13-01-005-1 13-01-008 13-01-009 13-01-010-1 13-01-011-1	Index of Wires and Cables Polyimide, FA-3901-1,FA 3901-2 from Draka Fileca Types 1871-1872 from Nexans Types 3901002**B from Axon Cable Polyimide, Type SPL from Gore Crosslinked PTFE Silver-Plated Copper from Tyco PTFE Polymide / PFA insulated ,Type SPP from Gore PTFE, Polymide/PFA Insulated, Type SPM from Gore Polyimide, Insulated, Shielded, SPLD Drain Wire from Gore ETFE Type Silver-Plated Copper, Lightweight from Tyco  Amended Spec Revision Spec Revision Spec Revision Spec Revision Spec Revision Spec Revision Spec Revision Spec Revision Spec Revision



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

**Changes of : 15-Mar-02**

General Information	
As affected	FRB Connectron is now known as Hypertac
Section/Page No.	Description
Section 01 01-04-001-1 01-08-001-1A-E 01-08-001-1B	Index of Capacitors Type CLR 79 from Sprague Concentric Air from Tekelec Temex Concentric Air from Tekelec Temex
Section 02 02-03-001-1 02-03-002-1 02-03-003-1 02-04-001	Index of Connectors HE 801 Series from Hypertac KMC Series from Hypertac MHD Series from Hypertac SMA Series from Radiall
Section 08 08-02-002-2A-F	Index of Microcircuits 54HCMOS Series from ST Microelectronics
Section 10 10-05-002-1	Index of Resistors Types RWR 80,81 from Vishay Sfernice
Section 11 11-01-001	Index of Thermistors Type G*D* and *K3A* from Betatherm
Section 13 13-01-001-1 13-01-010-1 13-01-011-1	Index of Wires and Cables Polyimide, FA-3901-1,FA 3901-2 from Draka Fileca Polyimide, Insulated, Shielded, SPLD Drain Wire from Gore ETFE Type Silver-Plated Copper, Lightweight from Tyco
Section 14 14-03-002	Index of Miscellaneous Microswitches, Series T3 from ABB CONTROL



**Qualified Parts List  
DOCUMENT CHANGES**

**Changes of : 15-Feb-02**

General Information		
As affected		
Section/Page No.	Description	
Section 08 08-02-002-2B-F	Index of Microcircuits 54HCMOS Series from ST Microelectronics	Amended Spec Revisions
Section 09 09-01-002	Index of Relays Type GP 5 from LEACH International Europe	Amended Extended
09-02-002	Type GP 2 From LEACH International Europe	Extended
09-03-001	Type GP 250 from LEACH International Europe	Extended
Section 12	Index of Transistors	Amended
12-01-002-3A-B	Low Power, NPN from ST Microelectronics	Extended
12-01-003-1	Low Power, NPN Type 2N2369A from ST Microelectronics	Extended
12-02-002-3A-B	Low Power, PNP from ST Microelectronics	Extended
12-02-003-1	Low Power, PNP Type 2N 2894 from ST Microelectronics	Extended
12-03-001-2	High Power NPN Type 2N3440 from ST Microelectronics	Extended
Section 13	Index of Wires and Cables	Amended
13-01-005-1	PTFE, Type Silver-Plated Copper from Tyco Electronics	Extended



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

**Changes of : 15-Dec-01**

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
	Document Changes	-
	Table of Contents	1
1	Foreword	2
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

**SEC****Qualified Parts List**

## 1. FOREWORD

This document contains a list of components that have been qualified to the rules of the ESA/SCC Specification 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 ESA/SCC qualification status of a product provided such publicity or advertisement does not state or imply that the product is the only qualified one of that particular type, range or family.

## 2. PROCURORS' RESPONSIBILITY

When procuring ESA/SCC 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 ESA/SCC specifications. The procuror is advised to utilise the ESA/SCC 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/scc/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 ESA/SCC 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/scc/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 the last year. (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 ESA/SCC QPL is the final one. The next QPL will be issued as an ESCC document. Existing qualifications will be carried forward into the ESCC System.



5. TABLE OF QUALIFIED COMPONENTS

Components qualified to the ESA/SCC specification 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



**Qualified Parts List**

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



**Qualified Parts List**

## Section 01

## Component Type: Capacitors

Sub -Section	Page No.	Cert.	Type Designation	Manufacturer
01-01			Ceramic, Fixed	
	01-01-001	14 G	Type I, CLC	AVX/TPC
	01-01-003-1	59 F	Type II, CKR 05, CKR 06	AVX/TPC
	01-01-004-3	194 C	Type I, CCR 05, CCR 06	AVX/TPC
	01-01-005	231 B	Type II, High Capacitance	AVX (N.I.)
	01-01-006	262 A	Type II, High Voltage	AVX (N.I.)
01-02			Ceramic, Fixed, Chip	
	01-02-001-1	109 E	Type I	AVX/TPC
	01-02-002-1	110 E	Type II	AVX/TPC
	01-02-003-1	249 A	Type I, High Frequency	Tekelec Temex
	01-02-004-1	264	Type II, High Voltage	AVX (N.I.)
01-03			Tantalum,(Solid), Fixed , Electrolytic	
	01-03-004	196 A	Type TAJ	AVX (GB)
01-04			Tantalum, (Non-Solid), Fixed, Electrolytic, Hermetically Sealed	
	01-04-001-2	173 D	Type CLR 79	Arcotronics
01-05			Fixed, Film	
	01-05-001-1	251 A	Type HT86PS, High Voltage	Eurofarad
	01-05-002-1	269	Type KM94S	Eurofarad
	01-05-003-1	270	Type PM94S	Eurofarad
01-08			Trimmer, Variable	
	01-08-001-1A to 1E	129 F	Concentric, Air	Tekelec Temex



**SEC**

**QPL**

SECTION 01-\*\*: INDEX OF CAPACITORS

Updated on 15-Oct-02



Types covered by similarity :

All values covered by Detail Specifications listed below

Remarks :

Product availability to be confirmed.

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 3001	6	D	Aug 2001	AVX/TPC St Apollinaire France
Detail				
ESA/SCC 3001/001	4	A	May 1996	
3001/002	5	A	May 1996	
3001/003	5	A	May 1996	
3001/004	4	A	May 1996	

Nature of Approval

Supervising Authority


Date

Qualification	CNES	Jan 1979
Extension	CNES	Sep 1981
Extension	CNES	Apr 1985
Extension	CNES	Sep 1988
Extension	CNES	Apr 1992
Extension	CNES	Jan 1995
Extension	CNES	May 1998
Extension	CNES	Nov 2000

Characteristics

Style	Model	Capacitance Range (pF)	Tol. (±%)	Rated Volt. (V)	Temp. Coeff. (±ppm/°C)
CLC904L	M104C	4.7 to 9.1	0.5/1pF	100	30
CLC904L	M104C	10 to 47	5,10	100	30
CLC905L	M105C	51 to 220	5	100	30
CLC908L	M108	240 to 680	5	100	30
CLC940L	M110C	750 to 910	5	100	30
CLC940L	M110C	1 000 to 4 700	5	63	30

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



**SGC**

**QPL**

CAPACITORS,  
CERAMIC, FIXED,TYPE I,  
CLC

Current Validity of Qualification

Certificate No.	Valid Until
14 G	November 2002

Page

01-01  
001

Types covered by similarity :

All values covered by Detail Specifications listed below and values with 20% Tolerance

Remarks :

Product availability to be confirmed. Replacement for DLZ, Type II

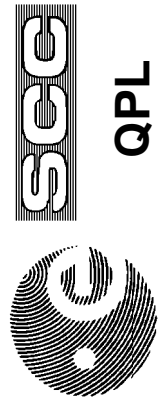
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Issue	Rev.	Date	Manufacturer			
Generic ESA/SCC 3001	6	D	Aug 2001	AVX/TPC St Apollinaire France	CNES	Feb 1980
Detail ESA/SCC 3001/006 3001/008	4	A	May 1996		CNES	Apr 1983
	4	A	May 1996		CNES	Sep 1986
				Requalification	CNES	Apr 1992
				Extension	CNES	Jan 1995
				Extension	CNES	May 1998
				Extension	CNES	Nov 2000

Current Validity of Qualification		Page
Certificate No.	Valid Until	
59 F	November 2002	01-01 003-1

Characteristics

Style	Model	Detail Spec.	Capacitance Range (pF)	Tol. (±%)	Rated Volt. (V)	$\Delta c/c=P(\theta)$
CKR05	M205	3001/008	10 to 1 000	10	200	±15% at V=0
			1 200 to 10 000	10	100	
			12 000 to 100 000	10	50	
CKR06	M206	3001/006	1 200 to 10 000	10	200	+15%, -25% with nominal voltage applied
			12 000 to 100 000	10	100	
			120 000 to 1 000 000	10	50	

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



**QPL**

CAPACITORS,  
CERAMIC, FIXED, TYPE II,  
CKR 05, CKR 06

Types covered by similarity :

Remarks :  
3001/018 values has according to the Detail Specification temperature coefficient of  $\pm 30$  ppm/  $^{\circ}\text{C}$  except for values 1 to 9.1pF, which are  $\pm 60$  ppm/ $^{\circ}\text{C}$

Product availability to be confirmed.



Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jan 1993
Extension	CNES	Jun 1995
Extension	CNES	May 1998
Extension	CNES	Nov 2000

Procurement Specifications Issues in effect on certification date			Manufacturer	
Issue	Rev.	Date	AVX/TPC Saint - Apollinaire FRANCE	
6	D	Aug 2001		
3	B	Nov 1997		
3	B	Nov 1997		

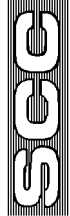

Characteristics					
Style	Detail Spec.	Capacitance Range (pF)	Tol. ( $\pm\%$ )	Rated Volt. (V)	Values Series
CCR05	3001/018	1 to 9.1	0.1, 0.25, 0.5pF	200	E24
		10 to 1 000	1, 2, 5, 10	200	E96
		1 100 to 3 900	1, 2, 5, 10	100	E48
		4 300 to 4 700	1, 2, 5, 10	50	E24
CCR06	3001/019	360 to 2 200	1, 2, 5, 10	200	E12
		2 400 to 10 000	1, 2, 5, 10	100	E12
		11 000 to 18 000	1, 2, 5, 10	50	E24


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

CAPACITORS,  
CERAMIC, FIXED, TYPE I,  
BASED ON CCR05, CCR06

Current Validity of Qualification		Page
Certificate No. 194 C	Valid Until November 2002	01-01 004-3

Types covered by similarity :		Remarks :			
± 20% tolerance					
Generic ESA/SCC 3001 Detail ESA/SCC 3001/030		Procurement Specifications Issues in effect on certification date		Manufacturer	Date
Issue 6	Rev. D	Date Aug 2001	AVX Limited Larne Northern Ireland	Supervising Authority	Jul 1996
2	-	Feb 2002		DERA	Jul 1999
				DERA	Jul 2001
Characteristics : E12 series		Nature of Approval			
Qualified Range:		Qualification			
Variants 01 to 74 capacitance range for 50V, 100V and 200V, as per Detail Specification		Extension			
Variants 01 to 52, and 59 to 60, for 500V are qualified		Extension			
± 10% tolerance					
Operating Temperature Range (°C): -55 to +125					
 		Current Validity of Qualification		Page	
CAPACITORS, CERAMIC, TYPE II, HIGH CAPACITANCE, BASED ON CASE STYLES BR, CV, AND CH		Certificate No. 231 B		Valid Until July 2003	
				01-01 005	

Types covered by similarity :		Remarks :			
± 20% tolerance					
Procurement Specifications Issues in effect on certification date		Manufacturer		Date	
Generic ESA/SCC 3001	Issue 6	Rev. D	AVX Limited Larne Northern Ireland	Qualification DERA	Sep 2000
Detail ESA/SCC 3001/034	2	A		Extension QinetiQ	Aug 2002
Characteristics : E12 series  Qualified Range:  Variants 01 to 22 are qualified ± 10% tolerance  Operating Temperature Range (°C): -55 to +125					
 <b>QPL</b>		CAPACITORS,  CERAMIC, TYPE II, HIGH VOLTAGE, 1.0 TO 5.0 KV,  BASED ON CASE STYLES VR, CV, AND CH		Current Validity of Qualification	
				Certificate No. 262 A	Valid Until August 2004

Types covered by similarity

Variants 01, 03, and 06 are qualified

Remarks :

The size specified in the characteristics column has the following convention, i.e., the first two digits specify the length and the last two the width in hundredths of an inch. Therefore, 0805 indicates 0.08" by 0.05". Product availability to be confirmed.

Procurement Specifications  
Issues in effect on certification date

Manufacturer

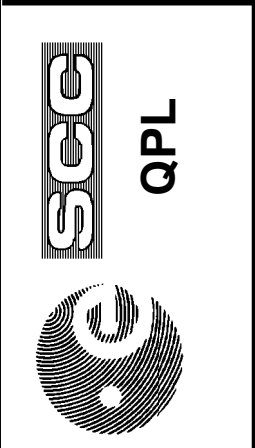
Nature of Approval  
Supervising Authority  
Date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 3009	6	C	Aug 2001	AVX/TPC St Apollinaire France
Detail				
ESA/SCC 3009/003	6	C	May 1998	
3009/004	6	D	May 1998	
3009/005	6	C	May 1998	
3009/006	6	D	May 1998	
3009/022	2	C	May 1998	

Qualification	CNES	Feb 1983
Extension	CNES	Sep 1986
Requalification	CNES	Apr 1992
Extension	CNES	Jan 1995
Extension	CNES	Jun 1998
Extension	CNES	Nov 2000

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

Style	Model	Detail Spec.	Capacitance Range (pF)	Rated Volt. (V)	Tolerance(±%)	TC(ppm/°C)
0805	A112C	3009/003	4.7 to 9 100	25,50,100	0.25 & 0.5 pF	±30
			10 to 1 000	25,50,100	1, 2, 5, 10	
			1 000 to 1 500	25, 50	1, 2, 5, 10	
1206	A120C	3009/022	10 to 1 500	25,50,100	1, 2, 5, 10	±30
			1 600 to 3 900	25, 50	1, 2, 5, 10	
1210	A113C	3009/004	22 to 4 300	25,50,100	1, 2, 5, 10	±30
1812	A114C	3009/005	100 to 8 200	25,50,100	1, 2, 5, 10	±30
			9 100 to 18 000	25, 50	1, 2, 5, 10	
2220	A115C	3009/006	470 to 18 000	25,50,100	1, 2, 5, 10	±30
			20 000 to 33 000	25, 50	1, 2, 5, 10	



CAPACITORS,  
CERAMIC, FIXED,  
CHIP, TYPE I

Current Validity of Qualification		Page
Certificate No.	Valid Until	01-02
109 E	November 2002	001-1

Types covered by similarity :

Variants 01, 03, and 06 are qualified

Remarks :

The size specified in the characteristics column has the following convention, i.e., the first two digits specify the length and the last two the width in hundredths of an inch. Therefore, 0805 indicates 0.08" by 0.05". Product availability to be confirmed.


Procurement Specifications Issues in effect on certification date		Manufacturer	
Generic	Issue	Rev.	Date
ESA/SCC 3009	6	C	Aug 2001
Detail	7	-	Feb 2002
ESA/SCC 3009/008	7	-	Jun 2002
3009/009	7	-	Jun 2002
3009/010	7	-	Jun 2002
3009/011	7	-	Jun 2002
3009/023	3	-	Jun 2002

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

Characteristics:

Style	Model	Detail Spec.	Capacitance Range (pF)	Tol. (±%)	Rated Volt. (V)
0805	A112G	3009/008	390 to 390 27 000 to 47 000	5,10,20 5,10,20 5,10,20	100 50 25
1210	A113G	3009/009	1 000 to 15 000 15 000 to 220 000	5,10,20 5,10,20 5,10,20	100 50 25
1812	A114G	3009/010	2 700 to 47 000 47 000 to 470 000	5,10,20 5,10,20 5,10,20	100 50 25
2220	A115G	3009/011	10 000 to 100 000 100 000 to 1 000 000	5,10,20 5,10,20 5,10,20	100 50 25
1206	A120G	3009/023	1000 to 1000 1000 to 47 000 1000 to 68 000	5,10,20 5,10,20 5,10,20	100 50 25

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



**SCC**

**QPL**

CAPACITORS,  
CERAMIC, FIXED,  
CHIP, TYPE II

Current Validity of Qualification

Certificate No.  
110 E

Valid Until  
November 2002

Page  
01-02  
002-1

Remarks : Maintenance activities to be initiated.

Types covered by similarity :  
 3009/035: variants 01, 02, 03, 04, 05  
 3009/036: variants 01, 02, 03, 04, 05, 06, 07

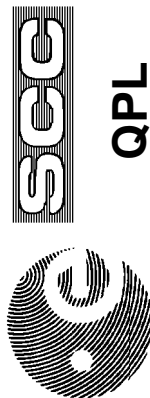
Generic ESA/SCC 3009	Procurement Specifications Issues in effect on certification date			Manufacturer	Supervising Authority	Date
	Issue	Rev.	Date			
Detail ESA/SCC 3009/035 3009/036	6 1 1	C - -	Aug 2001 Jul 1998 Jul 1998	TEKELEC TEMEX Pessac France	CNES CNES	Aug 1998 Jan 2001

Nature of Approval						
Qualification						
Extension						

Current Validity of Qualification		Page
Certificate No.	Valid Until	01-02
249 A	January 2003	003-1

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

Capacitance Range (pF)	Tol.(±)	TC (ppm/°C)	3009/036 UR	3009/035 UR
0.1 to 0.2	0.1 pF	100± 30	500	50
0.3 to 0.4	0.1, 0.25 pF		500	-
0.4 to 6.2	0.1, 0.25 pF		500	50
0.5 to 6.2	0.1, 0.25, 0.5 pF		-	-
6.8 to 10	0.1, 0.25 pF; 5, 10, 20 % 1, 2, 5, 10, 20%		100± 30	500
110 to 220	1, 2, 5, 10, 20% 1, 2, 5, 10, 20%	100± 30	300 200	-
510 to 680	1, 2, 5, 10, 20 % 1, 2, 5, 10, 20 %	100± 30	100 50	-



**QPL**

CAPACITORS,  
 CERAMIC, FIXED, CHIP,  
 TYPE I, MULTIPLE LAYER, HIGH FREQUENCY,  
 BASED ON TYPES CHA AND CHB



Types covered by similarity :

± 20% tolerance

Remarks : Maintenance activities to be initiated.

**Procurement Specifications**  
Issues in effect on certification date

Generic ESA/SCC 3009 Detail ESA/SCC 3009/034	Issue 6 1	Rev. C B	Date Aug 2001 Apr 1999
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**Manufacturer**

AVX Limited Larne Northern Ireland	Supervising Authority DERA	Date Feb 2001
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**Nature of Approval**

Qualification	Supervising Authority DERA	Date Feb 2001
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Characteristics : E12 series

Qualified Range:

Variants 01 to 24 are qualified

Terminations:


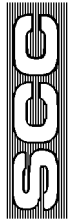
Variants 01 to 12: metallised pads

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	3 900 to 22 000	10
	2.0	1 500 to 1 800	10
	3.0	820 to 1 000	10
1825	1.0	27 000 to 56 000	10
	2.0	2 200 to 6 800	10
	3.0	820 to 2 700	10

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

Current Validity of Qualification		Page
Certificate No. 264	Valid Until February 2003	01-02 004-1

Types covered by similarity :		Remarks :			
Variants 03, 04, 06, 07, 13, 14, 16 and 17		Maintenance activities ongoing.			
Procurement Specifications Issues in effect on certification date		Manufacturer		Date	
Generic ESA/SCC 3012 Detail ESA/SCC 3012/001	Issue 2 2	Rev. C -	Date Jul 2002 Jun 2002	Supervising Authority	
Characteristics 0.47µF, 50V to 220µF, 4V Case sizes C, D, N and E		AVX Ltd Paignton England		Qualification DRA Extension DERA	
		CAPACITORS, LEADLESS SURFACE MOUNTED, TANTALUM, SOLID ELECTROLYTE, TYPE TAJ		Current Validity of Qualification	
				Certificate No. 196 A	
				Valid Until April 2002	
				Page 01-03 004	

Types covered by similarity : 20 % tolerance

Remarks :

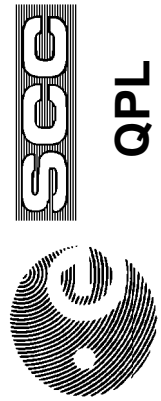
Procurement Specifications Issues in effect on certification date		Manufacturer		Supervising Authority	Date
Issue	Rev.	Date	Manufacturer		
Generic ESA/SCC 3003	3	B	ARCOTRONICS Towcester England	RAE	Sep 1990
Detail ESA/SCC 3003/005	2	B		DRA	Aug 1993
				DERA	Nov 1997
				DERA	Feb 2000
				QinetiQ	Aug 2002

Current Validity of Qualification		Page
Certificate No.	Valid Until	
173 D	August 2004	01-04 001-2

Characteristics

Detail Spec.	Capacitance Range (µF)	Rated Volt. (V)	Capacitance Range (µF)	Rated Volt. (V)
3003/005	30 to 68	6	12 to 5	40
	25 to 20	6.3	8.2 to 10	50
	15 to 33	8	3.5 to 4.7	60
	10 to 8	10	2.7 to 82	63
		15		75
		16		100
		25		125
		30		

Operating Temperature Range, (°C): -55 to +125,  
Case sizes: A, B, C and D



**QPL**

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

Types covered by similarity :

All values defined by the ESA/SCC Detail Specification  
20% tolerance by variant where applicable

Remarks : Maintenance of qualification is to be initiated.

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC 3006	Issue 4	Rev. D	Date Dec 2000	Manufacturer
Detail ESA/SCC 3006/022	1	B	Jun 2000	EUROFARAD Lagny sur Marne France

Nature of Approval

Qualification  
Extension

Supervising  
Authority


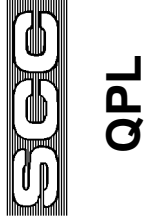
CNES  
CNES

Date

Aug 1998  
Jan 2001

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 A

Valid Until  
January 2003

Page

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001-1

Types covered by similarity :

All values defined by the ESA/SCC Detail Specification  
 ± 2% (E48 Series), 5% (E24 Series), 10% (E12 Series) tolerance by variant where applicable

Remarks :

Procurement Specifications  
 Issues in effect on certification date

Generic ESA/SCC 3006	Issue 4	Rev. D	Date Dec 2000
Detail ESA/SCC 3006/023	1	-	Oct 2000

Manufacturer

EUROFARAD  
 Lagny sur Marne  
 France

Nature of Approval

Qualification

Supervising  
 Authority

CNES

Date

Aug 2002

Characteristics: E96 Series

Capacitance Range (nF)	Tol.(± %)	U <sub>R</sub> (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 (°C): -55 to +125



**SCC**

**QPL**

CAPACITORS, FIXED, SURFACE MOUNT, D.C. SELF-HEALING,  
 NON-INDUCTIVE, POLYPHENYLENE SULPHIDE DIELECTRIC,  
 BASED ON TYPE KM94S

Current Validity of Qualification

Certificate No.

269

Valid Until

August 2004

Page

01-05

002-1

Types covered by similarity :

All values defined by the ESA/SCC Detail Specification  $\pm 20\%$  (E6 Series) tolerance by variant where applicable

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC 3006	Issue 4	Rev. D	Date Dec 2000	Manufacturer
Detail ESA/SCC 3006/024	1	-	Oct 2000	EUROFARAD Lagny sur Marne France

Nature of Approval

Qualification

Supervising  
Authority

CNES

Date

Aug 2002

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

where B= 6,8,10,12,14,15 depending on  
capacitance value  
Operating Temp. Range (°C): -55 to +125

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



**QPL**

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

Current Validity of Qualification

Certificate No.

270

Valid Until

August 2004

Page

01-05

003-1

Types covered by similarity : As described by ESA/SCC Detail Specification 3010/004

<u>Variants</u>	<u>Mfr Designation</u>	<u>Variants</u>	<u>Mfr Designation</u>
01	AT 5200	04	AT 8052
02	AT 5202	05	AT 5276
03	AT 5201	06	AT 5205

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC 3010	Issue	Rev.	Date
	3	-	Apr 1999
Detail ESA/SCC 3010/004	4	B	Feb 2002

Manufacturer

TEKELEC  
Pessac  
France

Characteristics

Detail Spec.	Capacitance Range (pF)	Body Diameter (mm)	Temp Coeff. (ppm/°C)
3010/004	1 to 10	7.6	±15

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



**SCS**

**QPL**

CAPACITORS,  
CONCENTRIC TRIMMERS, VARIABLE

Remarks :

Nature of Approval

Qualification  
Extension  
Extension  
Extension  
Extension  
Extension  
Extension

Supervising Authority

CNES  
CNES  
CNES  
CNES  
CNES  
CNES  
CNES

Date

Nov 1985  
Dec 1988  
May 1991  
Nov 1993  
Sep 1996  
Jan 1999  
Dec 2001

Current Validity of Qualification

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December 2003

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001-1A

Types covered by similarity : As described by ESA/SCC Detail Specification 3010/008


Remarks :  
Remarks :  
 Mfr. Designation  
 01 AT 5500  
 02 AT 5502  
 03 AT 5501

Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3010	Issue 3	Rev. -	Date Apr 1999	Qualification	CNES	Nov 1985
Detail ESA/SCC 3010/008	3	B	Feb 2002	Extension	CNES	Dec 1988
				Extension	CNES	May 1991
				Extension	CNES	Nov 1993
				Extension	CNES	Sep 1996
				Extension	CNES	Jan 1999
				Extension	CNES	Dec 2001

Characteristics

Detail Spec.	Capacitance Range (pF)	Body Diameter (mm)	Temp Coeff. (ppm/°C)
3010/008	1 to 20	8	±30

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

 <b>SCC</b> <b>QPL</b>	CAPACITORS, CONCENTRIC, TRIMMERS, VARIABLE		Current Validity of Qualification	Page
	Certificate No. 129 F	Valid Until December 2003	129 F	01-08 001-1C



Remarks :

Types covered by similarity : As described by ESA/SCC Detail Specification 3010/010 (left), 3010/011 (right)

Types covered by similarity :	As described by	ESA/SCC Detail Specification
01	AT 5700	01 AT 5750
02	AT 5702	02 AT 5752
03	AT 5701	03 AT 5751
04	AT 8050	04 AT 5753

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 3010	3	-	Apr 1999	TEKELEC Pessac France
Detail				
ESA/SCC 3010/010	3	B	Feb 2002	
3010/011	3	B	Feb 2002	

Characteristics

Detail Spec.	Capacitance Range (pF)	Body Diameter (mm)	Temp. Coeff. (ppm/°C)
3010/010	0.8 to 6	6.2	±15
3010/011	1 to 10	6.2	±50

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



**QPL**

CAPACITORS,  
CONCENTRIC, TRIMMERS, VARIABLE

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Nov 1985
Extension	CNES	Dec 1988
Extension	CNES	May 1991
Extension	CNES	Nov 1993
Extension	CNES	Sep 1996
Extension	CNES	Jan 1999
Extension	CNES	Dec 2001

Current Validity of Qualification		Page
Certificate No.	Valid Until	01-08
129 F	December 2003	001-1D

Remarks :

Types covered by similarity : As described by ESA/SCC Detail Specifications 3010/012 (left), 3010/013 (right)

Variants	Mfr. Design	Variants	Mfr. Design
01	AT 5800	01	AT 5850
02	AT 5802	02	AT 5852
03	AT 5801	03	AT 5851
04	AT 8051	04	AT 5853
05	AT 5805	05	AT 5855

Procurement Specifications Issues in effect on certification date				Manufacturer
Generic	Issue	Rev.	Date	
ESA/SCC 3010	3	-	Apr 1999	TEKELEC Pessac France
Detail ESA/SCC 3010/012 3010/013	3	B	Feb 2002	
	3	B	Feb 2002	

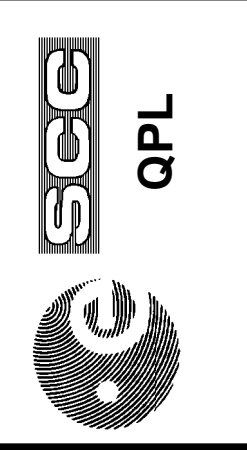
Characteristics

Detail Spec.	Capacitance Range (pF)	Body Diameter (mm)	Temp. Coeff. (ppm/°C)
3010/012	0.6 to 3.5	4.6	±50
3010/013	0.6 to 5	4.6	±50

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

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Nov 1985
Extension	CNES	Dec 1988
Extension	CNES	May 1991
Extension	CNES	Nov 1993
Extension	CNES	Sep 1996
Extension	CNES	Jan 1999
Extension	CNES	Dec 2001

Current Validity of Qualification		Page
Certificate No.	Valid Until	
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CAPACITORS,  
CONCENTRIC, TRIMMERS, VARIABLE

## Section 02

## Component Type: Connectors

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



**SCC**


**QPL**



SECTION 02-\*\*: INDEX OF CONNECTORS

Updated on 15-Oct-02

Remarks : Maintenance activities ongoing.

Types covered by similarity :  
Range defined in the corresponding ESA/SCC Detail Specifications.

Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Generic	Issue	Rev.	Date	Qualification		
ESA/SCC 3401 Detail	7	B	Apr 1999	Qualification	CNES	Feb 1981
ESA/SCC 3401/001	7	A	Feb 2000	Extension	CNES	Jun 1983
3401/004	1	B	May 1991	Extension	CNES	Sep 1986
3401/040	1	B	Jul 2002	Extension	CNES	Oct 1988
				Extension	CNES	Jun 1989
				Extension	CNES	Sep 1991
				Extension	CNES	Apr 1994
				Extension	CNES	Jan 1997
				Extension	CNES	Jan 2000
<b>Characteristics</b> Range of Contacts: 9, 15, 25, 37 and 50 contacts size 20 for standard arrangements 5W1 to 47W1 combined contact arrangements 15,26,44,62, and 78 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				Current Validity of Qualification Certificate No. 71 H		Page 02-01 001-1
 <b>QPL</b>				CONNECTORS, ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*M		

Types covered by similarity : Complete range as defined in the Detail Specifications		Remarks : Maintenance activities ongoing.	
Procurement Specifications Issues in effect on certification date		Manufacturer	Date
Generic ESA/SCC 3401	Issue 7	Framatome Connectors International Marolles en Brie France	Sep 1988
Detail ESA/SCC 3401/001	Rev. B		Apr 1999
			Jan 1994
			Jul 1996
			Oct 1997
			Mar 2000
Characteristics		Nature of Approval	Supervising Authority
Range of Contacts: 9, 15, 25, 37, 50 contacts. Size 20.		Qualification	CNES
Range of Contacts: 15, 26, 44, 62, 78 contacts. Size 22.		Extension	CNES
Mounting type= blank: standard mounting holes		Extension	CNES
y: floating mount		Extension	CNES
E: captive nuts		Extension	CNES
Gold-plated non-magnetic coating		Extension	CNES
Operating Temperature Range (°C): -55 to +125		Extension	CNES
 		Current Validity of Qualification	Page
CONNECTORS, ELECTRICAL, SOLDER AND WIRE WRAP CONTACTS, NON-REMOVABLE, RECTANGULAR RECEPTACLE AND PLUG BASED ON TYPE D*M		Certificate No. 155 E	Valid Until March 2002
			02-01 001-2

Types covered by similarity :

Range defined in the corresponding ESA/SCC Detail Specification

Remarks : Maintenance activities ongoing.

Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Issue	Rev.	Date	Manufacturer			
Generic ESA/SCC 3401	B	Apr 1999	ITT CANNON Dole France	Qualification	CNES	Feb 1981
Detail ESA/SCC 3401/002	A	Feb 2000		Extension	CNES	Jun 1983
3401/005	C	Feb 2000		Extension	CNES	Sep 1986
3401/020	A	Feb 2000		Extension	CNES	Oct 1988
3401/021	B	Feb 2000		Extension	CNES	Jun 1989
				Extension	CNES	Sep 1991
				Extension	CNES	Apr 1994
				Extension	CNES	Jan 1997
				Extension	CNES	Jan 2000



  

Current Validity of Qualification		Page
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72 H	January 2002	02-02 001-1

<p>Characteristics</p> <p>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)            **Accepts wire sizes AWG # 22, 26, 44, 62, and 78 contacts size 22** for high density contact arrangements            Range of Contacts: 9, 15, 25, 37, 50 contacts : Standard Contact Arrangements            Gold-plated non-magnetic coating            Operating Temperature Range (°C): -55 to +125            Connector Savers: For usage with above connector range</p>	<p>CONNECTORS, ELECTRICAL, CRIMP CONTACTS, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*MA</p>
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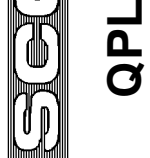
  

Types covered by similarity :

Complete range as defined in the Detail Specifications

Remarks : Maintenance activities ongoing.

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3401	Issue 7	Framatome Connectors International Marolles en Brie France	Qualification  Extension  Extension  Extension  Extension	CNES  CNES  CNES  CNES  CNES	Sep 1988  Apr 1991  Jan 1994  Jul 1996  Mar 2000
Detail ESA/SCC 3401/002	Rev. B				
3401/005	A				
3401/020	C				
3401/021	A				
<p>Characteristics</p> <p>Connectors:-</p> <ul style="list-style-type: none"> <li>Accepts wire sizes AWG # 20 to 24 (standard bucket, variants 01 and 02)</li> <li>Accepts wire sizes AWG # 26 and 28 (reduced bucket, variants 03 and 04)</li> <li>Accepts wire sizes AWG # 22, 24 and 26 (contact AWG # 22 for high density, contact arrangements, variants 07 and 08)</li> </ul> <p>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.</p> <p>Gold-plated non-magnetic coating</p> <p>Operating Temperature Range (°C): -55 to +125</p> <p>Connector Savers:- For usage with above connector range</p>		Current Validity of Qualification		Page	
  <p>CONNECTORS AND CONNECTOR SAVER, ELECTRICAL, CRIMP CONTACTS, REMOVABLE, RECTANGULAR RECEPTACLE AND PLUG, BASED ON TYPE D*MA</p>		Certificate No. 156 D	Valid Until March 2002	02-02 001-2	

Types covered by similarity :

See ESA/SCC Detail Specification 3401/008,3401/009

Remarks :

Maximum Ratings are stated for one isolated contact.

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC 3401	Issue	Rev.	Date	Manufacturer
Detail ESA/SCC 3401/008 3401/009	7	B	Apr 1999	Cie DEUTSCH Evreux France
	5	A	Mar 2002	
	3	C	Mar 2002	

Characteristics

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

Variants 01 to 20 are qualified

Cylindrical Multicontacts

Range of shell sizes: 3, 7, 12, 19, 27, 37, 61 contacts in wire size AWG # 20 and solder gauge 8  
Other arrangements with contacts size AWG 20, 16, 12 and 8  
Operating Temperature Range (°C): -65 to +200



**QPL**

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

Nature of Approval

Supervising  
Authority

Date

Qualification	CNES	Jul 1979
Extension	CNES	Nov 1982
Extension	CNES	Nov 1985
Extension	CNES	Oct 1989
Extension	CNES	Apr 1992
Extension	CNES	Aug 1994
Extension	CNES	Feb 1997
Extension	CNES	May 1999
Extension	CNES	Aug 2001

Current Validity of Qualification



Page


Certificate No.	Valid Until
25 H	August 2003



02-02



003



Types covered by similarity :		Remarks :	
For contact, variants 01 to 14 are qualified			
<p>Generic ESA/SCC 3401</p> <p>Detail ESA/SCC 3401/052 3401/058</p>		<p>Issue 7</p> <p>2</p> <p>1</p>	<p>Rev. B</p> <p>-</p> <p>A</p>
<p>Procurement Specifications Issues in effect on certification date</p>		<p>Date Apr 1999</p> <p>Jun 2002 May 1995</p>	<p>Manufacturer Framatome Connectors International Marolles en Brie France</p>
<p>Characteristics</p> <p>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</p> <p>Other arrangements with contact sizes: 20, 16, 12, 8</p> <p>Receptacle and Plug Shell Sizes: 09,11,13,15,17,19,21,23,25</p>		<p>Qualification</p> <p>Extension</p> <p>Extension</p>	<p>CNES</p> <p>CNES</p> <p>CNES</p>
<p>Contact Size</p> <p>8</p> <p>12</p> <p>16</p> <p>20</p>		<p>Ratings (A)</p> <p>46.0</p> <p>23.0</p> <p>13.0</p> <p>7.5</p>	<p>Supervising Authority</p>
<p>Operating temperature range (° C): -65 to +200 °C</p>		<p>Current Validity of Qualification</p> <p>Certificate No. 220 B</p>	<p>Valid Until July 2003</p>
		<p>CONNECTORS, ELECTRICAL, CIRCULAR, BAYONET COUPLING, SCOOP-PROOF, REMOVABLE CRIMP CONTACTS, BASED ON TYPE MIL-C-38999, SERIES I</p>	
		<p>Page 02-02 005</p>	


Types covered by similarity :		Remarks :			
For contact, variants 01 to 08 are qualified					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	Framatome Connectors International Marolles en Brie France	
Detail ESA/SCC 3401/044 3401/045	2 1	- A	Jun 2002 Mar 1995	Qualification Extension Extension	
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 Contact Size                      Ratings (A) 12                                      23.0 16                                      13.0 20                                      7.5 Operating temperature range (° C): -65 to +200 °C		Nature of Approval Supervising Authority Date CNES                                      May 1995 CNES                                      Mar 1998 CNES                                      Jul 2001			
 <b>QPL</b>		Current Validity of Qualification		Page	
		Certificate No. 221 B	Valid Until July 2003	02-02 006	
CONNECTORS, ELECTRICAL, CIRCULAR, BAYONET COUPLING, REMOVABLE CRIMP CONTACTS, BASED ON TYPE MIL-C-38999, SERIES II					

Types covered by similarity :		Remarks :			
3401/058 crimp contacts and 3401/066 triax contacts to be mounted in 3401/056 connectors 3401/070 connector receptacles with PCB contacts					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	Framatome Connectors International Marolles en Brie France	
Detail ESA/SCC 3401/056 3401/058 3401/066 3401/070	3 1 1 1	A A - -	Jun 2002 May 1995 Feb 2000 June 2000	Qualification Extension Extension	
Characteristics		Supervising Authority			
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) Other arrangements with contact sizes # 20, 16, 12, 8, 4 Receptacle and Plug Shell Sizes: 09,11,13,15,17,19,21,23,25 Triax contact= (layout 09-01 only)		CNES CNES CNES			
Crimp Contact Size	Ratings (A)	PCB Contact Size	Ratings (A)	Nature of Approval	
4	80.0	16	10.0	Qualification	
8	46.0	20	5.0	Extension	
12	23.0	22	3.0	Extension	
16	13.0				
20	7.5				
22	5.0				
Operating temperature range (° C): -65 to +200 °C		Current Validity of Qualification			
		Certificate No. 222 B		Valid Until July 2003	
 		CONNECTORS, MINIATURE, ELECTRICAL, CIRCULAR, TRIPLE-START SELF-LOCKING COUPLING, SCOOP-PROOF, REMOVABLE & NON-REMOVABLE CRIMP CONTACTS BASED ON TYPE MIL-C-38999, SERIES III		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 ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	Qualification	CNES	May 1995
Detail ESA/SCC 3401/057	2	A	Sept 2001	Requalification	CNES	Jul 2001
<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>Receptacle Shell Sizes: 09,11,13,15,17,19,21,23,25</p> <p>Contact Size                      Ratings (A) 20                                      5.0 22D                                     3.0</p> <p>Receptacle ( contacts # 8, 12, 16, 20, 22D) and Feedthrough ( contacts # 8, 12, 16) Operating temperature range (° C): -65 to +200 oC</p>		Current Validity of Qualification		Certificate No.	Valid Until	Page
 		CONNECTORS, MINIATURE, ELECTRICAL, CIRCULAR, TRIPLE-START SELF- LOCKING COUPLING, SCOOP-PROOF, HERMETIC RECEPTACLE AND FEEDTHROUGH, TYPE MIL-C-38999, SERIES III		223 A	July 2003	02-02 008

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 ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	HYPERTAC Saint-Aubin-Lès-Elbeuf France	Qualification	CNES	Nov 1982		
Detail ESA/SCC 3401/016	6	A	Nov 2000				Extension	CNES	May 1985
3401/017	3	A	Apr 1998				Extension	CNES	May 1988
<b>Characteristics</b>  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							Apr 1991 Jan 1994 Mar 1996 Mar 1998 Jan 2002		
 <b>QPL</b>				CONNECTORS, ELECTRICAL, REMOVABLE CONTACTS, CRIMP WIRE-WRAP SOLDER AND SAVER, PRINTED CIRCUIT BOARD, BASED ON TYPE HE 801			Current Validity of Qualification Certificate No. 99 G		Valid Until January 2004
				Page 02-03 001-1					

Types covered by similarity :

See ESA/SCC Detail Specifications listed below

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC	Issue	Rev.	Date
3401	7	B	Apr 1999
Detail ESA/SCC 3401/016	6	A	Nov 2000
3401/017	3	A	Apr 1998

Manufacturer

HYPERTAC LTD  
London  
England

Nature of Approval

Qualification  
Extension  
Extension  
Extension

Supervising  
Authority

DRA  
DRA  
DERA  
QinetiQ

Date

Jul 1994  
Nov 1996  
Nov 1998  
Apr 2002

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


Certificate No.  
217 C

Valid Until  
April 2004

Page

02-03  
001-2


Types covered by similarity :		Remarks :			
As defined in Table 1(a) of ESA/SCC Detail Specifications listed below					
Procurement Specifications Issues in effect on certification date		Manufacturer		Supervising Authority	
Generic ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	Qualification CNES	Date Mar 1987
Detail ESA/SCC 3401/039	4	-	Apr 1998	Extension CNES	May 1990
				Extension CNES	Jan 1993
				Extension CNES	Oct 1995
				Extension CNES	Mar 1998
				Extension CNES	Jan 2002
<p>Characteristics</p> <p>3 rows 26, 44, 62, 80, 98, 144 contacts</p> <p>Contact Ratings: 2 A (1 contact)</p> <p>Operating Temperature Range (°C): -55 to +125</p>					
 		<p>CONNECTORS, ELECTRICAL, NON-REMOVABLE SOLDER AND WIRE-WRAP CONTACTS AND SAVERS, PRINTED CIRCUIT BOARD, BASED ON TYPE KMC</p>		Current Validity of Qualification	
				Certificate No. 149 E	Valid Until January 2004

Types covered by similarity :		Remarks :			
As defined in Table 1(a) of ESA/SCC Detail Specification					
Procurement Specifications Issues in effect on certification date		Manufacturer		Supervising Authority	
Generic ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	Qualification CNES	Date Aug 1998
Detail ESA/SCC 3401/065	1	B	Jan 2001	Extension CNES	Jan 2002
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					
 <b>QPL</b>		CONNECTORS AND SAVERS, ELECTRICAL, RECTANGULAR, NON-REMOVABLE, PRINTED CIRCUIT BOARD CONTACTS, BASED ON TYPE MHD		Current Validity of Qualification Certificate No. 250 A Valid Until January 2004	
				Page 02-03 003-1	







Types covered by similarity :		Remarks : Maintenance activities ongoing.			
Procurement Specifications Issues in effect on certification date		Manufacturer		Date	
Generic ESA/SCC 3401	Issue 7	Rev. B	Date Apr 1999	Qualification CNES	Oct 1986
Detail ESA/SCC 3401/031	2	-	Sep 2002	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					
 <b>QPL</b>		CONNECTORS, ELECTRICAL, CRIMP CONTACTS, SINGLE-IN-LINE, MICROMINIATURE, BASED ON TYPE MTB		Current Validity of Qualification	
				Certificate No. 141 F	Valid Until October 2001

## Section 03

## Component Type: Crystals

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



**SEC****QPL**

SECTION 03-\*\*: INDEX OF CRYSTALS

Updated on 15-Oct-02


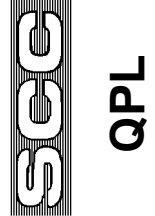
Types covered by similarity :

Remarks : Maintenance activities ongoing.

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3501	Issue 5	C-MAC Frequency Products Argenteuil France	Qualification Extension Extension Extension Extension Extension Extension	CNES CNES CNES CNES CNES CNES CNES	Oct 1979 Jun 1983 Oct 1986 Jul 1989 Jan 1995 Nov 1996 Apr 2000
Detail ESA/SCC 3501/001	Rev. -				
ESA/SCC 3501/008	C				
ESA/SCC 3501/011	B				
ESA/SCC 3501/012	A				
	-				
Characteristics TO-5 Can (T 807) Frequency Range: 15 - 140 MHz					
  CRYSTALS, TO-5 CAN			Current Validity of Qualification		Page
			Certificate No. 33 F	Valid Until April 2002	03-01 001-1

Types covered by similarity :

Remarks : Maintenance activities ongoing.

Types covered by similarity :		Procurement Specifications Issues in effect on certification date				Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic	Detail	Issue	Rev.	Date						
ESA/SCC 3501		5	-	Jun 2002	C-MAC Frequency Products Argenteuil France	Qualification	CNES	Oct 1979		
		4	B	May 2000				Extension	CNES	Jun 1983
	ESA/SCC 3501/002	2	C	Jun 2001				Extension	CNES	Oct 1986
	ESA/SCC 3501/009	2	-	Sep 2002				Extension	CNES	Jul 1989
						Extension	CNES	Jan 1995		
						Extension	CNES	Apr 1997		
						Extension	CNES	Apr 2000		
Characteristics TO-8 Can (T 1507) Frequency Range: 2.5 - 20 MHz										
 					Current Validity of Qualification			Page		
					Certificate No. 34 F	Valid Until April 2002		03-01 002		

CRYSTALS,  
TO-8 CAN

## Section 04

## Component Type: Diodes

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
04-01			Small Signal	
	04-01-002-2	197 D	Switching, 1N4148-1, 1N4150-1	Microsemi
	04-01-003-1	247 C	Switching, 1N6638 et al, 1N3595-1	Microsemi
	04-01-004-1	261 B	Switching, 1N5802, 1N5804, 1N5806	Microsemi
04-05			Microwave, Silicon	
	04-05-001-3	227 A	Schottky, BAS 70	Infineon
	04-05-002-2	224 A	PIN, BXY 42	Infineon
	04-05-002-3A-B	258	PIN, Ultra Fast Switching	Tekelec Temex
	04-05-002-4A-B	259	PIN, Fast Switching	Tekelec Temex
	04-05-003	236 A	PIN, BXY 43 and 44	Infineon
	04-05-003-1A-B	200 B	PIN and Varactors	Tyco M/A Com
	04-05-003-2	225 A	Varactor, DH 267	Tekelec Temex



**SCC**

**QPL**


SECTION 04-\*\*: INDEX OF DIODES

Updated on 15-Oct-02


Types covered by similarity :



1N4151-1

Remarks :

Types covered by similarity :		Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 5000	Issue 9	Rev. A	Date Dec 2000	Microsemi Ireland Ennis Ireland	Qualification	ESTEC	Nov 1993
Detail ESA/SCC 5101/023	2	A	Apr 1999		Extension	ESTEC	Jan 1996
ESA/SCC 5101/024	2	A	Apr 1999		Extension	ESTEC	Jan 1998
ESA/SCC 5101/025	2	-	Sep 1998		Extension	ESTEC	Apr 2000
Characteristics Variants 02 are qualified					Extension	ESTEC	Jun 2002
 <b>QPL</b>				Current Validity of Qualification			Page
				Certificate No. 197 D	Valid Until June 2004	04-01 002-2	
DIODES, SILICON, SWITCHING, BASED ON TYPES 1N4148-1, 1N4150-1							



Types covered by similarity :		Remarks :			
1N6639, 1N6640, 1N6641, 1N6642, 1N6643, and 1N6639US, 1N6640US, 1N6641US0, 1N6642US, 1N6643US, and 1N3595US-1					
Procurement Specifications Issues in effect on certification date		Manufacturer		Supervising Authority	
Generic ESA/SCC 5000	Issue 9	Rev. A	Date Dec 2000	Qualification	Date Jan 1998
Detail ESA/SCC 5101/026	1	-	May 1997	Extension	Apr 2000
ESA/SCC 5101/027	1	-	May 1997	Extension	Jun 2000
ESA/SCC 5101/028	1	A	Jan 1998	Extension	Jun 2002
Characteristics		Microsemi Ireland Ennis Ireland			
For 5101/026: Variants 01, 02, and 03 in DO 35 package are qualified Variants 04, 05, and 06 in MELF package are qualified					
For 5101/027: Variants 01, 02, and 03 in DO 35 package are qualified Variants 04, 05, and 06 in MELF package are qualified					
For 5101/028: Variant 01 in DO 35 package is qualified Variant 02 in MELF package is qualified					
Current Validity of Qualification		Certificate No. 247 C		Valid Until June 2004	
Page		04-01		003-1	
 <b>SCC</b> <b>QPL</b>		DIODES, SILICON, SWITCHING, BASED ON TYPES 1N6638 AND 1N3595-1			

Types covered by similarity : 1N5802, 1N5804, and 1N5802US, 1N5804US		Remarks :	
Procurement Specifications Issues in effect on certification date		Manufacturer	Date
Generic ESA/SCC 5000	Issue 9	Microsemi Ireland Ennis Ireland	May 2000
Detail ESA/SCC 5101/014	Rev. A		Jun 2000
	-		Jun 2002
Characteristics Variants 07, 08 and 09 in A packages are qualified Variants 10, 11 and 12 in MELF packages are qualified Operating Temperature (°C): - 65 to +175		Nature of Approval	Supervising Authority
		Qualification	ESTEC
		Extension	ESTEC
		Extension	ESTEC
 		Current Validity of Qualification	Page
DIODES, SILICON, SWITCHING, BASED ON TYPES 1N5806 AND 1N5806US		Certificate No. 261 B	04-01 004-1
		Valid Until June 2004	



Types covered by similarity :

Variant 02

Remarks : No maintenance activities initiated

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 5010	5	C	Jun 2001
Detail ESA/SCC 5513/017	2	-	Jun 1994

Manufacturer

Infineon Technologies AG  
München  
Germany

Nature of Approval

Qualification  
Extension

Supervising Authority

DARA  
DLR

Date

Jun 1995  
Jan 2000

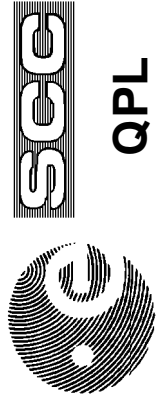
Characteristics

Maximum Ratings:  $V_R = -50V$   
 $I_{FM} = 5.0 A @ t_p = 1.0 \mu s, \text{ duty cycle} = 0.001\%$

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

Package: T1

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



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


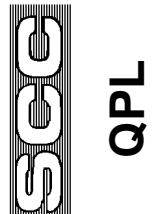
Current Validity of Qualification

Certificate No.  
224 A

Valid Until  
January 2002

Page

04-05  
002-2

Types covered by similarity : See next page		Remarks : No maintenance activities initiated.																	
Procurement Specifications Issues in effect on certification date		Manufacturer	Date																
Generic ESA/SCC 5010	Issue 5	TEKELEC TEMEX Montreuil France	Mar 2000																
Detail ESA/SCC: See types covered by similarity.	Rev. C	Qualification	CNES																
Characteristics		Current Validity of Qualification																	
	<table border="0"> <tr> <td><u>DH 50033</u></td> <td><u>DH 50052</u></td> <td><u>DH 50071</u></td> <td><u>DH 50101</u></td> </tr> <tr> <td>30 V</td> <td>50 V</td> <td>70 V</td> <td>100 V</td> </tr> <tr> <td>&lt; 1.8</td> <td>&lt; 1.6</td> <td>&lt; 2.0</td> <td>&lt; 1.9</td> </tr> <tr> <td>&gt; 40</td> <td>&gt; 60</td> <td>&gt; 100</td> <td>&gt; 300</td> </tr> </table>	<u>DH 50033</u>	<u>DH 50052</u>	<u>DH 50071</u>	<u>DH 50101</u>	30 V	50 V	70 V	100 V	< 1.8	< 1.6	< 2.0	< 1.9	> 40	> 60	> 100	> 300	Certificate No. 258	
<u>DH 50033</u>	<u>DH 50052</u>	<u>DH 50071</u>	<u>DH 50101</u>																
30 V	50 V	70 V	100 V																
< 1.8	< 1.6	< 2.0	< 1.9																
> 40	> 60	> 100	> 300																
Operating Temperature Range: -55 to +125 °C		Valid Until March 2002																	
		Page 04-05 002-3A																	
		DIODES, MICROWAVE, SILICON, PIN, ULTRA FAST SWITCHING																	

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Component Type
5513/032	1	-	Jul 97	DH 50033 to DH 50037, variants 01 to 35
5513/036	1	-	Jul 97	DH 50052 to DH 50057, variants 01 to 42
5513/037	1	-	Jul 97	DH 50071 to DH 5077, variants 01 to 49
5513/038	1	-	Jul 97	DH 50101 to DH 50107, variants 01 to 49



**SCC**

**QPL**


DIODES,  
MICROWAVE, SILICON,  
PIN, ULTRA FAST SWITCHING

Current Validity of Qualification

Certificate No.	Valid Until
258	March 2002

Page

04-05  
002-3B

Types covered by similarity : See next page		Remarks : No maintenance activities initiated.	
Procurement Specifications Issues in effect on certification date		Manufacturer	Date
Generic ESA/SCC 5010	Issue 5	TEKELEC TEMEX Montreuil France	Mar 2000
Detail ESA/SCC: See types covered by similarity.	Rev. C	Qualification	
Characteristics		Supervising Authority CNES	
	DH 50151	DH 50201	DH 50251
$V_{Rmax}$	150 V	200 V	250 V
$R_{SF} (\Omega)_{(max.)}$	< 2.0	< 2.3	< 2.4
$\tau_L$ (ns) (min.)	> 160	> 240	> 265
Operating Temperature Range: -55 to +125 °C		Current Validity of Qualification	
 <b>QPL</b>		Certificate No.	Valid Until
		259	March 2002
DIODES, MICROWAVE, SILICON, PIN, FAST SWITCHING		Page	
		04-05	002-4A

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Component Type
5513/031	1	-	Jul 97	DH 50151 to DH 50157, variants 01 to 49
5513/033	1	-	Jul 97	DH 50201 to DH 50209, variants 01 to 63
5513/034	1	-	Jul 97	DH 50251 to DH 50256, variants 01 to 36
5513/035	1	-	Jul 97	DH 50401 to DH 50405, variants 01 to 23



**SCC**

**QPL**

DIODES,  
MICROWAVE, SILICON,  
PIN, FAST SWITCHING

Current Validity of Qualification

Certificate No.	Valid Until
259	March 2002

Page

04-05  
002-4B



Types covered by similarity :

Variants 01-08 are qualified

Remarks : No maintenance activities initiated.

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 5010	5	C	Jun 2001	Infineon Technologies AG München Germany
Detail ESA/SCC 5513/030	1	B	Jun 1997	

Characteristics

BXY 43

BXY 44

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.  
 $V_F = 1.0$  V max.

$5$  nA max. @  $V_R = -100$  V  
 $1.05$  V max. @  $I_F = 100$  mA

Packages: T, T1, Teller, Pill, Flatpack

Operating Temperature Range:  $-55$  to  $+150$  °C



**QPL**

DIODES,

MICROWAVE, SILICON, PIN, PLANAR

BASED ON TYPES BXY 43 AND 44

Current Validity of Qualification

Certificate No.

236 A

Valid Until

January 2002

Page

04-05

003

Nature of Approval

Qualification

Extension

Supervising Authority

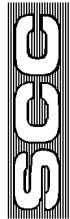

DARA

DLR

Date

Oct 1996

Jan 2000

Types covered by similarity : See next page		Remarks :	
<p>Generic ESA/SCC 5010</p> <p>Detail ESA/SCC: See types covered by similarity.</p>		<p>Procurement Specifications Issues in effect on certification date</p>	
Issue 5	Rev. C	Date Jun 2001	Manufacturer Tyco Electronics Ltd. M/A - COM Division Milton Keynes England
<p>Characteristics</p> <p>Operating Temperature Range (°C): -65 to +125 and 150</p>		<p>Nature of Approval</p> <p>Qualification Extension Extension</p>	
<p>Supervising Authority</p> <p>DRA DERA QinetiQ</p>		<p>Date</p> <p>Dec 1993 Oct 1997 Mar 2002</p>	
<p>Current Validity of Qualification</p> <p>Certificate No. 200 B</p>		<p>Valid Until March 2004</p>	
<p>Page</p> <p>04-05 003-1A</p>			
 		<p>DIODES, MICROWAVE, SILICON, PIN AND VARACTORS</p>	

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Component Type and Qualified Range
5513/007	1	A	Feb 02	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	1	A	Feb 02	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	1	A	Feb 02	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	1	A	Feb 02	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	1	A	Feb 02	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	1	C	May 00	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	1	B	May 00	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	1	A	May 00	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	1	A	May 00	ML4336 to ML4343, variants 01-02, 06-08, 12-14, 18-20, 24-26, 30-32, 36-38, 42-44, 48
5512/006	1	A	May 00	ML4351 to ML4354, variants 01-02, 05-06, 09-13, 16-17, 20-24, 27-28, 31-35, 38-39, 42-44
5512/007	1	A	May 00	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



**QPL**

DIODES,  
MICROWAVE, SILICON,  
PIN AND VARACTORS

Current Validity of Qualification

Certificate No.

200 B


Valid Until

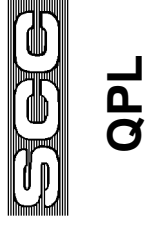
March 2004

Page

04-05

003-1B

Types covered by similarity :		Remarks : Maintenance activities completed.			
Variants 01 to 03: DH 252, 256, and 292					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 5010	Issue 5	Rev. C	Date Jun 2001	TEKELEC TEMEX Montreuil France	
Detail ESA/SCC: 5512/016	1	A	Dec 1997		
Characteristics					
Maximum Ratings :		$V_R = 15 \text{ to } 40 \text{ V}$ $I_F = 100 \text{ \& } 200 \text{ mA}$			
D.C. Parameters:		$I_R = 20 \text{ nA max. @ } V_R = 10 \text{ V}$ $V_F = 0.9 \text{ V @ } I_F = 10 \text{ mA}$			
Operating Temperature Range (°C):		55 to +150			
 <b>QPL</b>		Current Validity of Qualification		Page	
		Certificate No. 225 A	Valid Until August 2000	04-05	003-2



**QPL**

DIODES,  
MICROWAVE, SILICON, MULTIPLIER VARACTOR  
BASED ON TYPE DH 267

## Section 05


## Component Type: Filters

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

**SCC****QPL**

SECTION 05-\*\*: INDEX OF FILTERS

Updated on 15-Oct-02

Types covered by similarity : Refer to next page		Remarks :	
Procurement Specifications Issues in effect on certification date		Nature of Approval	Supervising Authority
Generic ESA/SCC 3008	Issue 4	Qualification	CNES
Detail Refer to types covered by similarity	Rev. A	Extension	CNES
Date Apr 1999		Date Aug 1998 Apr 2001	
Manufacturer EUROFARAD Lagny sur Marne France			
<p>Characteristics</p> <p>All variants specified in the Detail Specifications are qualified</p> <p>Operating Temperature Range (°C): -55 to +125</p>			
		Current Validity of Qualification	
<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>		Certificate No. 252 A	Valid Until April 2003
		Page 05-01 001 A	

Types covered by certificate

Style	Detail Spec.	Issue	Revision	Date	Variants	Capacitance Range (nF)	Rated Current (A)	Rated Voltage (V)
SFP 040	3008/014	1	B	Aug 1995	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	1	-	Jun 1996	01 to 14	2.4 to 89.6	10	35 to 500
SFP 035	3008/025	1	-	Jun 1996	01 to 20	2.4 to 35.20	10	35 to 200
SFP 100	3008/028	1	A	Apr 1997	01 to 06	0.16 to 1 312.0	10	50 to 300
SFP 060	3008/030	1	-	Jun 1996	01 to 28	2.4 to 89.6	10	35 to 500

Style	Detail Spec.	Issue	Revision	Date	Variants	Capacitance Range (pF)	Rated Current (A)	Rated Voltage (V)
SFC 030	3008/020	1	A	Apr 1997	01 to 12	470 to 22 000	1.0 to 5.0	25 to 200
SFC 060	3008/026	1	A	Apr 1997	01 to 06	680 to 220 000	10	25 to 200
SFC 100	3008/027	1	A	Apr 1997	01 to 06	1000 to 1 000 000	10	25 to 200
SFC 035	3008/031	1	A	Apr 1997	01 to 06	470 to 22 000	10	25 to 200
SFC 040	3008/032	1	A	Apr 1997	01 to 12	470 to 22 000	10	25 to 200
SFC 060	3008/033	1	A	Apr 1997	01 to 12	680 to 220 000	10	25 to 200

Style	Detail Spec.	Issue	Revision	Date	Variants	Capacitance Range (nF)	Rated Current (A)	Rated Voltage (V)
SFL 100	3008/029	1	B	Sep 1998	01 to 48	17.6 to 1 600	5, 10, 15	40 to 300



**QPL**

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 A

Valid Until

April 2003

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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	



**SCC**

**QPL**

SECTION 06-\*\*: INDEX OF FUSES

Updated on 15-Oct-02



## Section 07

## Component Type: Inductors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
07			Fixed, RF	
	07-01-001	241 A	Type MSCI 10000, 12000	Microspire

**SCC****QPL**

SECTION 07-\*\*: INDEX OF INDUCTORS

Updated on 15-Oct-02

Types covered by similarity :

Remarks : Maintenance activities to be initiated.

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 3201	3	C	Apr 1999	Microspire Illange France
Detail ESA/SCC 3201/008	2	A	Feb 2002	

Nature of Approval

Qualification  
Extension

Supervising  
Authority

CNES  
CNES

Date

Apr 1997  
Nov 2000

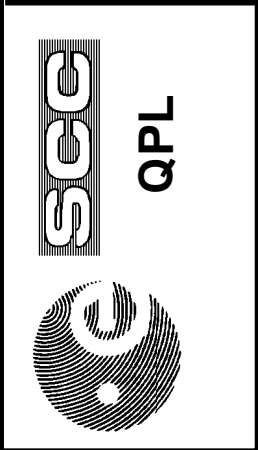
Characteristics Variants 01 and 02 are qualified

Series No.	Range (uH)	Qmin.	Test Frequency, ft (MHz)	Min. SRF fr (MHz)	Max. DCR, Rdc (Ω)	Rated DC Current, IR (mA)	Case Size
10k	0.0101 - 10	60 - 42	150 - 7.9	1000- 33	0.025 - 3.3	750 - 87	A
12k	12 - 1000	37 - 12	2.5 - 0.79	26 - 1.5	2.0 - 120	110 - 15	B

Tolerance (±%): 10

Dielectric Withstanding Voltage (DWC): 200 Vrms

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



**QPL**

INDUCTORS,  
FIXED, RF, MINIATURE,  
MOULDED, SURFACE MOUNT,  
BASED ON SERIES MSC1 10K AND 12K

Current Validity of Qualification

Certificate No.

241 A

Valid Until

November 2002

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07-01

001

## 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 I	4000 B Series	ST Microelectronics
	08-02-002-2 A to F	190 D	54HCMOS Series	ST Microelectronics
08-07			Capability Approval	
	08-07-004-A to D	248	MMIC, GaAs Standard Cell	Bookham



**SCC**
**QPL**

SECTION 08-\*\*: INDEX OF MICROCIRCUITS

Updated on 15-Oct-02

Types covered by similarity : See next pages

Remarks :

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 9000	Issue 10	ST Microelectronics Rennes France	Qualification	ESTEC	Apr 1981
Detail ESA/SCC: See types covered by similarity	Rev. A		Extension	CNES	Jan 1981
	Date Dec 2000		Extension	CNES	Dec 1984
			Extension	CNES	May 1987
			Extension	CNES	Apr 1990
			Extension	CNES	Oct 1992
			Extension	CNES	Apr 1995
			Extension	CNES	Apr 1997
			Extension	CNES	Apr 1999
			Extension	CNES	May 2001
Characteristics Package Types: Ceramic Dual-in-Line Ceramic Flat Pack Leadless Chip Carrier					
 <b>QPL</b>		Current Validity of Qualification		Page	
		Certificate No. 73 I	Valid Until May 2003	08-02 001-2A	



**QPL**

MICROCIRCUITS,  
DIGITAL,  
C-MOS-B, 4000 B SERIES

## Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type
9201/041	5	A	May 01	Quad 2-input NOR gate	4001B
9201/042	4	-	Jun 01	Dual 4-input NOR gate	4002B
9202/039	3	-	Apr 01	4-bit full adder	4008B
9201/043	4	-	Jun 01	Quad 2-input NAND gate	4011B
9201/044	3	-	Jun 01	Dual 4-input NAND gate	4012B
9203/023	2	C	Jul 00	Dual 'D'-type flip-flop	4013B
9306/014	3	-	Apr 01	8-stage synchronous static shift register	4014B
9306/015	3	-	Apr 01	Dual 4-stage static shift register with serial input/parallel input	4015B
9202/050	3	-	Jul 01	Quad bilateral switch	4016B
9204/020	4	-	Apr 01	Decade counter/divider	4017B
9204/021	3	-	Apr 01	Presetttable divide-by-N counter	4018B
9202/051	3	-	Apr 01	Quad AND/OR select gate	4019B
9204/022	4	-	Apr 01	14-stage ripple carry binary counter/divider	4020B
9306/016	3	-	May 01	8-stage static shift register	4021B
9204/023	3	-	Apr 01	Octal counter/divider	4022B
9201/045	3	-	Jun 01	Triple 3-input NAND gates	4023B
9204/024	3	-	Jul 01	7-stage ripple carry binary counter/divider	4024B
9201/046	3	-	Jul 01	Triple 3-input NOR gate	4025B
9406/001	3	-	Apr 01	Ripple carry decade counter/divider	4026B
9203/022	4	-	Apr 01	Dual J-K master slave flip-flop	4027B
9205/010	2	C	Jun 95	BCD-to-decimal or binary-to-octal decoder	4028B
9204/025	3	-	Apr 01	Presetttable up/down counter binary or BCD decade	4029B
9201/047	3	-	Jul 01	Quad 2-input exclusive OR gates	4030B
9306/017	3	-	May 01	64-stage static shift register	4031B


**QPL**

MICROCIRCUITS,  
DIGITAL,  
C-MOS-B, 4000 B SERIES

## Current Validity of Qualification

Certificate No.

73 I

Valid Until

May 2003

## Page

08-02

001-2B

## Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type
9306/025	3	-	Apr 01	8-stage static bidirectional parallel/serial input/output bus register with 3 state output	4034B
9306/018	3	-	May 01	4-bit universal shift register	4035B
9204/026	3	-	Apr 01	12-stage ripple carry binary counter/divider	4040B
9202/040	3	-	Jul 01	Quad true/complement buffer with unbuffered outputs	4041UB
9202/041	3	-	Apr 01	Quad clocked "D" latch	4042B
9202/042	3	-	Apr 01	Quad NOR 3- state R/S latches	4043B
9202/043	3	-	Apr 01	Quad NAND 3-state R/S latch	4044B
9202/044	3	-	Jun 01	Micropower phase-locked loop	4046B
9207/003	3	-	Jul 01	Low power monostable/astable multivibrator	4047B
9202/045	3	-	Apr 01	Hex buffer/converter (inverting type)	4049UB
9202/046	3	-	Apr 01	Hex buffer/converter (non-inverting type)	4050B
9202/047	3	-	Apr 01	Analogue multiplexer/demultiplexer	4051B
9202/048	3	-	Apr 01	Analogue multiplexer/demultiplexer	4052B
9202/049	3	-	Apr 01	Triple 2-channel analogue multiplexer/demultiplexer	4053B
9209/001	4	-	Apr 01	4-bit magnitude comparator	4063B
9204/052	3	-	Apr 01	14-stage ripple-carry binary counter/divider and oscillator	4060B
9408/005	3	A	May 01	Quad bilateral switch	4066B
9408/009	2	C	Apr 01	Analogue multiplexer/demultiplexer	4067B
9201/061	3	-	Jul 01	8-input NAND gate	4068B
9401/010	3	-	Jul 01	Hex inverter	4069UB
9201/048	4	-	Jul 01	Quad exclusive OR gate	4070B
9201/063	3	A	May 01	Quad 2-input OR gate	4071B
9201/082	3	-	Jul 01	Dual 4-input OR gate	4072B
9201/064	4	-	July 01	Triple 3-input AND gate	4073B


**QPL**

MICROCIRCUITS,  
DIGITAL,  
C-MOS-B, 4000 B SERIES

## Current Validity of Qualification

Certificate No.

73 I

Valid Until

May 2003

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001-2C

## Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type
9201/065	3	-	Jul 01	Triple 3-input OR gate	4075B
9306/022	4	-	Jun 01	4-bit "D"-type register with 3-state output	4076B
9201/055	3	C	May 01	Quad exclusive NOR gate	4077B
9201/062	2	C	May 01	8-input OR/NOR gate	4078B
9201/052	4	C	May 01	Quad 2-input AND gate	4081B
9201/066	2	C	May 01	Dual 4-input AND gate	4082B
9201/067	2	C	May 01	Dual 2-wide 2-input AND/OR inverter gate	4085B
9409/002	2	C	May 01	Quad 2-input NAND gate with Schmitt trigger input	4093B
9306/026	3	-	Apr 01	8-stage shift and store bus register with synchronous serial outputs and 3-state parallel output	4094B
9206/003	4	-	Apr 01	Dual monostable multivibrator	4098B
9202/058	3	-	Apr 01	8-bit addressable latch	4099B
9401/006	4	-	Jun 01	Strobed hex inverter/buffer	4502B
9401/030	3	-	Jun 01	Hex non-inverting buffers with 3-state output	4503B
9202/063	2	B	Apr 01	Dual 4-bit latch with 3-state output	4508B
9408/006	3	-	Jun 01	8-channel multiplexer with 3-state output	4512B
9408/012	2	B	Apr 01	4-bit latch/4-to-16 decoder	4514B
9205/011	3	B	Apr 01	4-bit latch /4-to-16 line decoder	4515B
9204/045	3	-	Jun 01	Synchronous quad presettable up/down binary counter	4516B
9204/028	3	-	Jun 01	Dual binary up counter	4520B
9202/065	3	-	Jun 01	8-bit priority encoder	4532B
9207/007	2	-	Apr 01	Dual monostable multivibrator with reset	4538B


**SGE**
**QPL**

MICROCIRCUITS,  
DIGITAL,  
C-MOS-B, 4000 B SERIES

## Current Validity of Qualification

Certificate No.

73 I

Valid Until

May 2003

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001-2D

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type
9408/011	3	-	Jul 01	Dual 1-of-4 decoder/demultiplexer	4555B
9408/025	3	-	Jun 01	Dual 1-of-4 decoder/demultiplexers (output low on select)	4556B
9204/036	3	-	Jun 01	Presettable 8-bit synchronous down-counter	40103B
9306/033	4	-	May 01	FIFO register with 3-state output	40105B
9409/005	2	C	May 01	Hex Schmitt-trigger	40106B
9401/013	2	C	May 01	Dual 2-input NAND buffer/driver	40107B
9407/003	2	C	Jun 95	Quad low-to-high 3-state voltage level shifter	40109B
9204/054	3	-	Jun 01	Programmable 4-bit binary counter with asynchronous clear	40161B
9204/046	3	-	Jun 01	Programmable 4-bit binary counter with synchronous clear	40163B
9203/038	3	-	Apr 01	Hex 'D'-type flip-flop	40174B
9204/041	3	-	Jun 01	Presettable binary up/down counter (dual clock with reset)	40193B
9408/017	3	-	May 01	Quad 2-line-to-1-line data selector/multiplexer with 3-state output	40257B



**QPL**

MICROCIRCUITS,  
DIGITAL  
C-MOS-B, 4000 B SERIES



Current Validity of Qualification

Certificate No.	Valid Until
73 I	May 2003

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001-2E



Types covered by similarity : See next pages		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer		Date	
Generic ESA/SCC 9000	Issue 10	Rev. A	Date Dec 2000	ST Microelectronics Rennes France	
Detail ESA/SCC: See types covered by similarity.				Qualification Nov 1992	
				Extension Apr 1995	
				Extension Apr 1997	
				Extension Apr 1999	
				Extension May 2001	
<p>Characteristics</p> <p>Qualified Packages:</p> <ul style="list-style-type: none"> <li>- Ceramic Dual In Line</li> <li>- Ceramic Flat Pack</li> <li>- Leadless Chip Carrier</li> </ul> <p><b>NOTES</b></p> <p>1. These parts have successfully passed radiation testing to 50 krad.</p>		Current Validity of Qualification		Page	
 		MICROCIRCUITS, DIGITAL, MONOLITHIC, HIGH SPEED CMOS, 54HC AND 54HCT SERIES		Certificate No. 190 D	
				Valid Until May 2003	
				08-02 002-2A	

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type	Note
9201/105	2	-	Nov 01	Quad 2-input NAND gate	54HC00	1
9201/113	1	C	Feb 02	Quad 2-input NOR gate	02	1
9201/114	1	C	Feb 02	Quad 2-input NAND gate with open drain output	03	1
9401/033	1	B	Oct 01	Hex inverter	04	1
9201/106	1	C	Feb 02	Quad 2-input positive AND gate	08	1
9201/107	1	C	Feb 02	Triple 3-input NAND gate	10	1
9201/117	1	C	Feb 02	Triple 3-input AND gate	11	1
9409/007	1	B	Dec 01	Hex Schmitt trigger inverter	14	1
9201/118	1	C	Feb 02	Dual 4-input NAND gate	20	1
9201/108	1	C	Feb 02	Dual 4-input AND gate	21	1
9201/109	1	C	Feb 02	Triple 3-input NOR gate	27	1
9201/110	1	C	Feb 02	8-input NAND gate	30	1
9201/111	1	C	Feb 02	Quad 2-input OR gate	32	1
9203/071	1	C	Oct 01	Dual negative-edge triggered J-K flip-flops with clear	73	1
9203/050	2	-	Dec 01	Dual D-type flip-flop with preset and clear	74	1
9203/065	1	C	May 02	Quad 4-bit bistable D-Type latch	75	1
9209/004	1	C	May 02	4-bit magnitude comparator	85	1
9201/119	2	-	Nov 01	Quad 2-input exclusive OR gate	86	1
9203/072	1	B	Oct 01	Dual J-K negative-edge triggered flip-flop with direct clear	107	1



**QPL**

MICROCIRCUITS,  
DIGITAL,  
MONOLITHIC, HIGH SPEED CMOS,  
54HC AND 54HCT SERIES

Current Validity of Qualification

Certificate No.

190 D

Valid Until

May 2003

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002-2B

## Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type	Note
9306/048	2	-	Mar 02	Dual J-K positive edge triggered flip-flop with preset and clear	54HC109	1
9203/051	2	-	Mar 02	Dual J-K negative edge triggered flip-flop with preset and clear	112	1
9207/006	1	C	May 02	Dual positive or negative edge Schmitt-retriggerable monostable multivibrator with clear	123	1
9401/039	1	C	Nov 01	Quad bus buffer with 3 state output	125	1
9401/046	1	B	Nov 01	Quad bus buffer with 3 state output	126	1
9201/120	1	B	Oct 01	Quad 2-input NAND gate with Schmitt-trigger input	132	1
9205/013	1	C	May 02	3-to-8 line decoder/demultiplexer with address latch and inverted output	137	1
9408/046	1	C	Jan 02	3-to-8 line decoder/demultiplexer with inverted output	138	1
9205/017	1	C	May 02	Dual 2 to 4 line decoder/demultiplexer with inverted output	139	1
9410/017	1	C	Dec 01	8-line to 3-line priority encoder	148	1
9408/054	1	C	Jan 02	8-line to 1-line data selector/multiplexer	151	1
9408/038	1	C	Jan 02	Dual 4-line to 1-line data selectors/multiplexer	153	1
9205/023	1	B	Feb 02	4-to-16 line decoder/demultiplexer with inverted output	154	1
9408/057	1	C	Jan 02	Quad 2-line to 1-line data selector/multiplexer	157	1
9408/059	1	C	Dec 01	Quad 2-line to 1-line data selector/multiplexer with inverted output	158	1
9204/062	1	C	Dec 01	Synchronous presettable 4-bit decade counter with direct clear	160	1
9204/059	1	C	Dec 01	Asynchronous 4-bit binary counter	161	1
9204/073	1	C	Dec 01	Synchronous 4-bit binary counter	163	1
9306/041	1	B	Oct 01	8-bit SIPO shift register	164	1
9306/042	1	C	Dec 01	8-bit PISO shift register	165	1
9306/043	1	C	Dec 01	8-bit PISO shift register	166	1
9306/052	1	C	Dec 01	Hex D-type edge-triggered flip-flop with clear	174	1



**SGE**

**QPL**

MICROCIRCUITS,  
DIGITAL,  
MONOLITHIC, HIGH SPEED CMOS,  
54HC AND 54HCT SERIES

Current Validity of Qualification

Certificate No.

190 D

Valid Until

May 2003

Page

08-02

002-2C

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type	Note
9203/052	1	C	Dec 01	Quad D-type edge-triggered flip-flop with clear	54HC175	1
9204/066	1	C	Jan 02	Synchronous 4-bit up/down binary counter	191	1
9204/065	1	C	Jan 02	Synchronous 4-bit up/down binary counter (dual clock with clear)	193	1
9306/047	1	C	Dec 01	4-bit PIPO shift register	194	1
9306/053	1	C	Dec 01	4-bit PIPO shift register with overriding clear	195	1
9205/021	1	B	Jun 95	3-line to 8-line decoder/demultiplexer with address latch	237	1
9401/034	1	B	Mar 02	Octal bus buffer with inverted 3-state output	240	1
9401/035	2	-	Mar 02	Octal bus buffer with 3-state output	241	1
9405/011	1	B	Nov 01	Quad bus transceiver with inverted 3-state output	242	1
9405/012	1	B	Nov 01	Quad bus transceiver with 3-state output	243	1
9401/048	1	B	Mar 02	Octal bus buffer with 3-state output	244	1
9405/013	1	B	Mar 02	Octal bus transceiver with 3-state output	245	1
9408/048	2	-	Mar 02	1-to-8 data selector/multiplexer with 3-state output	251	1
9408/058	1	C	Dec 01	Dual 4-line to 1-line data selector/multiplexer with 3-state output	253	1
9408/047	1	C	Dec 01	Quad 2-line to 1-line data selector/multiplexer with 3-state output	257	1
9203/053	1	B	Mar 02	Octal D-type edge-triggered flip-flop with clear	273	1
9208/003	1	B	Oct 01	9-bit odd/even parity generator/checker	280	1
9202/075	1	C	Dec 01	4-bit binary full adder with fast carry	283	1
9401/052	1	C	Mar 02	Hex bus buffer with 3-state output	365	1



**SCC**

**QPL**

MICROCIRCUITS,  
DIGITAL,  
MONOLITHIC, HIGH SPEED CMOS,  
54HC AND 54HCT SERIES

Current Validity of Qualification

Certificate No.  
190 D

Valid Until  
May 2003

Page

08-02

002-2D

## Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type	Note
9401/044	1	C	Mar 02	Hex bus buffer with 3-state output	54HC367	1
9203/059	1	B	Mar 02	Octal D-type transparent latch with 3-state output	373	1
9203/060	2	-	Mar 02	Octal D-type edge-triggered flip-flop with 3-state output	374	1
9201/121	1	B	Oct 01	Quad 2-input exclusive OR-gate	386	1
9204/074	1	C	Oct 01	Dual 4-bit negative edge-triggered binary counter	393	1
9401/049	1	B	Mar 02	Octal bus buffer with inverted 3-state output	540	1
9401/047	1	B	Mar 02	Octal bus buffer with 3-state output	541	1
9202/072	1	B	Feb 02	Octal D-type transparent latch with 3-state output	573	1
9203/054	2	-	Mar 02	Octal D-type edge-triggered flip-flop with 3-state output	574	1
9204/071	1	C	Jan 02	8-bit binary counter with 3-state output register	590	1
9306/051	2	-	Mar 02	8-bit shift register with 3-state output register	595	1
9306/054	1	C	Mar 02	8-bit PISO shift register	597	1
9209/005	1	B	Mar 02	8-bit identify comparator	688	1
9201/130	1	B	Oct 01	Dual 4-input NOR gate	4002	1
9204/070	1	C	Dec 01	Asynchronous negative-edge-triggered 14-bit binary counter	4020	1
9204/069	1	C	Dec 01	Asynchronous negative edge-triggered 12-bit binary counter	4040	1



**SGE**

**QPL**

MICROCIRCUITS,  
DIGITAL,  
MONOLITHIC, HIGH SPEED CMOS,  
54HC AND 54HCT SERIES

Current Validity of Qualification

Certificate No.

190 D

Valid Until

May 2003

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002-2E

Types covered by similarity

ESA/SCC Spec. No.	Issue	Rev.	Date	Description	Component Type	Note
9401/037	1	C	Mar 02	Hex buffer/converter with inverted output	54HC4049	1
9401/038	1	C	Mar 02	Hex buffer/converter	4050	1
9408/064	2	-	Mar 02	Analogue multiplexer/demultiplexer	4051	1
9408/065	2	-	Mar 02	Analogue multiplexer/demultiplexer (triple 2-channel)	4053	1
9204/076	1	C	Jan 02	Asynchronous negative-edge-triggered 14-bit binary counter and oscillator	4060	1
9408/052	1	B	Nov 01	Quad bilateral switch	4066	1
9201/124	1	B	Oct 01	Dual 4-input OR gate	4072	1
9201/129	1	B	Oct 01	Triple 3-input OR gate	4075	1
9201/123	1	B	Oct 01	8-input OR/NOR gate	4078	1
9306/050	1	C	Jan 02	8-bit SIPO shift latch register with 3-state output	4094	1
9205/019	2	B	Feb 02	4-to-16 line decoder/latch	4514	1
9203/070	1	C	Oct 01	Dual D-type flip-flop with preset and clear	54HCT74	1
9401/045	1	B	Mar 02	Octal buffer with inverted 3-state output	240	1
9402/009	1	B	Mar 02	Octal bus buffer with 3-state output	244	1
9405/014	1	B	Mar 02	Octal bus transceiver with 3-state output	245	1
9203/064	1	B	Mar 02	Octal D-type transparent latch with 3-state output	373	1
9203/066	1	B	Mar 02	Octal D-type edge-triggered flip-flop with 3-state output	374	1
9401/055	1	A	Jun 94	Hex inverter (single stage) with unbuffered output	54HCU04	1



**QPL**

MICROCIRCUITS,  
DIGITAL,  
MONOLITHIC, HIGH SPEED CMOS,  
54HC AND 54HCT SERIES

Current Validity of Qualification



Certificate No.  
190 D

Valid Until  
May 2003

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08-02

002-2F

Types covered by similarity :		Remarks : Detail Specifications to be developed according to device design. Maintenance activities to be initiated.				
Procurement Specifications Issues in effect on certification date		Nature of Approval	Supervising Authority	Date		
Generic ESA/SCC 9010	Issue 1	Rev. C	Date Dec 2000	Capability Approval	DERA	Jun 1998
Detail ESA/SCC (see remarks)	Manufacturer Bookham Technologies Plc Caswell England					
Characteristics See Capability Abstract						
 		MICROCIRCUITS, ANALOGUE, GAAS, MMIC, STANDARD CELL, F20 PROCESS, CAPABILITY APPROVAL		Current Validity of Qualification		
		Certificate No. 248		Valid Until June 2000		
				Page 08-07 004 A		

## CAPABILITY ABSTRACT

The F20 (1S and 1G) analogue standard cell MMIC process is based on direct ion implantation of semi-insulating GaAs substrates. FETs are fabricated utilising 0.5  $\mu\text{m}$  gate lengths and TiPtAu gate metal. A composite silicon nitride/polyimide dielectric system combines with two levels of interconnect metal to form complex components and circuit topologies without the need for air bridges. Through GaAs vias are used for device grounding. The F20 process is suitable for microwave applications in radiation intensive environments.

### BASIC F20 TECHNOLOGY INFORMATION

Two Level Metal and dielectric, ion implant substrates

Operating Temperature :  $T_{\text{ch max.}}$  +150 ° C

Storage Temperature : -65 ° C to +150 ° C

Max. Operating Frequency : > 200 GHz

RF Output Power :

- : 250 mW/mm gate width (1G)
- : 300 mW/mm gate width (1S)

Max. Power Dissipation (FET)

- : 1 W/mm gate width (1G)
- : 2 W/mm gate width (1S)

Max. Power Dissipation (die)

- : 0.5 W/mm<sup>2</sup>

Max. Die Size : 12.7 mm x 12.7 mm

Total Dose Tolerance :

- : < 100 kRad(Si)
- : simulation supported to 80 kRad(Si)

Radiation Latch-up :  $\leq 140 \text{ MeV}/(\text{mg}/\text{cm}^2)$

SEU Tolerance : LET  $\geq 54 \text{ MeV}/(\text{mg}/\text{cm}^2)$

ESD protection :  $\leq 1\text{kV}$

Design Style : Standard cell

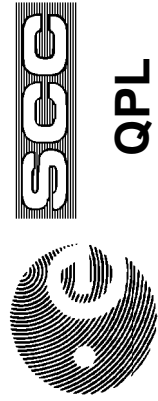
Cell Library : F20 Foundry 3

Application : Small signal analogue

Design Systems : CADENCE, WAVEMAKER

Simulators : LIBRA, LINMIC, HARMONICA, HPMSD, MMICAD

Packages : Custom, ceramic, metal



MICROCIRCUITS,  
ANALOGUE,  
GAAS, MMIC, STANDARD CELL, F20 PROCESS,  
CAPABILITY APPROVAL

Current Validity of Qualification

Certificate No.

248

Valid Until

June 2000

Page

08-07

004 B



**F20 CELL LIBRARY**

FETs: (pie) gate 1, 2, 4 or 6 finger. Finger widths 50  $\mu\text{m}$  to 175  $\mu\text{m}$  in 1  $\mu\text{m}$  steps

Maximum ratings:

IG: Vds 6V/Vgs -8V or Vds 6V/Vgd -8V; 1 W/mm gate width; T<sub>ch</sub>. 150 ° C

IS: Vds 6V/Vgs -10V or Vds 6V/Vgd -10V; 2 W/mm gate width; T<sub>ch</sub>. 150 ° C

Inductors: 1-10 turn planar, 1-5 turn stacked; 18 nH maximum

Maximum current rating: 10A/mm line width (Planar)

Capacitors: Silicon nitride dielectric 0.5 to 59 pF, silicon nitride/polyimide composite dielectric 0.06 - 2.5 pF.

Maximum rating: 15V

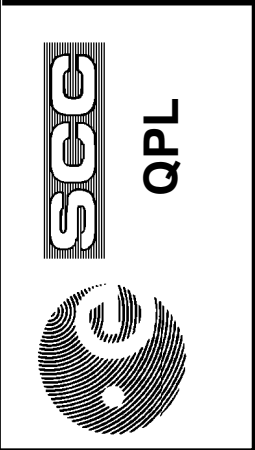
Resistors: Implanted 10 Ohm to 10K Ohm

Transmission: Characteristic impedance 40 Ohm to 110 Ohm

Lines: Maximum current rating: 10A/mm line width

**RADIATION RESISTANCE**

There is no discernible change in device performance during or following irradiation from either a 3 MeV electron source at a maximum rate of 5 x 10<sup>4</sup> Gy (Si) · s<sup>-1</sup> to a total dose of 1 KGy or a 300 MeV proton source to a total dose of 1 KGy or following irradiation using a 1.2 MeV gamma-photon source at 1.5 Gy (Si) · s<sup>-1</sup> to a total dose of 10 KGy. Irradiation from a 4 MeV electron source at 5x10<sup>2</sup> Gy (Si) · min<sup>-1</sup> to a total dose of 10 KGy results in less than 0.8% change in device performance.



MICROCIRCUITS,  
ANALOGUE,  
GAAS, MMIC, STANDARD CELL, F20 PROCESS,  
CAPABILITY APPROVAL

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248	June 2000	004 C

**PACKING DENSITY AND CHIP SIZES**

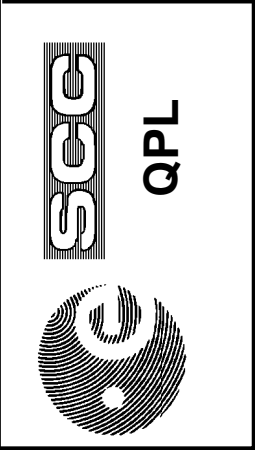
The packing density depends on circuit function but is ultimately limited by the need to maintain the minimum layer spacing defined in the Design Manual and the maximum  $T_{ch}$  of 150 ° C. The maximum circuit array size is 127 mm x 127 mm which is also the maximum chip size. Chip size is also limited by a maximum aspect ratio of 3:1.

**DIE ATTACH, WIRE BONDING AND PACKAGING**

Dieattach is by Au/Sn (80:20) eutectic solder bonding. The maximum permissible time/temperature exposure of a chip during die or wire bonding is 2 minutes at 310 ° C.

Wire bonding is by gold wire and thermocompression bonding with a maximum bond tool loading for 1" Au wire of 50g.

Packaging, die attach and wire bonding are carried out in an inert gas atmosphere. The maximum die size utilised to date is 6.9 x 2.3 mm. Package types used for either test vehicles or MMICs have included 16 pin side-brazed DILs, 20-way metal/ceramic microwave packages and 14-way Cu/Mo/ceramic packages.



MICROCIRCUITS,  
ANALOGUE,  
GAAS, MMIC, STANDARD CELL, F20 PROCESS,  
CAPABILITY APPROVAL

Current Validity of Qualification	
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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 G	Type GP5	LEACH
	09-01-005	239 A	Type E	LEACH
09-02			Latching, 28Vdc Contact Rating	
	09-02-002	13 G	Type GP2	LEACH
	09-02-006	240 A	Type D	LEACH
09-03			Latching, 50Vdc Contact Rating	
	09-03-001	93 F	Type GP250	LEACH
	09-03-002	04 G	Type GP3A	LEACH


**SCC**
**QPL**



SECTION 09-\*\*: INDEX OF RELAYS


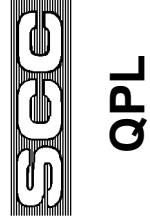
Updated on 15-Oct-02



Types covered by similarity :		Remarks : Maintenance activities to be initiated.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3601	Issue 5	LEACH International Europe Niort France	Qualification	CNES	Apr 1997
Detail ESA/SCC 3601/012	2		Extension	CNES	Sep 2000
<p>Characteristics: Variants 01 to 11 are qualified</p> <p>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</p>		Current Validity of Qualification		Page	
 		Certificate No. 239 A		Valid Until September 2002	
RELAY, NON-LATCHING, ELECTROMAGNETIC, TYPE E					



Types covered by similarity :		Remarks : Maintenance activities to be initiated.			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3602	Issue 5	LEACH International Europe Niort France	Qualification Extension	CNES CNES	Apr 1997 Sep 2000
Detail ESA/SCC 3602/019	Rev. -				
<p>Characteristics: Variants 01-11 are qualified</p> <p>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</p>					
 		RELAY, LATCHING, ELECTROMAGNETIC, TYPE D			Current Validity of Qualification
		Certificate No. 240 A			Valid Until September 2002
					Page 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	Date
Generic ESA/SCC 3602	Issue 5	LEACH International Europe Niort France	Feb 1982
Detail ESA/SCC 3602/010	Rev. - C		Jul 1984 Sep 1987
Date Apr 1999 Jan 2001			Jul 1992 Jun 1995
Characteristics			Dec 1998 Nov 2001
Contact Rating: 2 A at 50 Vdc (50 000 ops) 4 A pp, 56 Vrms, 20 kHz (50 000 ops)			
Contact Configuration: 2PDT			
Package Type: half-crystal can			
Coil Voltage: 26.5 Vdc			
Operating Temperature Range (°C): -65 to +125			
Nature of Approval		Supervising Authority	
Qualification		ESTEC	
Extension		CNES	
Extension		CNES	
Extension		CNES	
Extension		CNES	
Extension		CNES	
Extension		CNES	
Extension		CNES	
Current Validity of Qualification		Certificate No.	Page
Valid Until		93 F	09-03 001
RELAY, LATCHING, ELECTROMAGNETIC, TYPE GP 250			
 			



Types covered by similarity :  
 Variants 01 to 08 are qualified  
 Coil Voltages 6 and 12 Vdc

Remarks : Maintenance activities ongoing.

Procurement Specifications  
 Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 3602	5	-	Apr 1999
Detail ESA/SCC 3602/005	5	B	Jun 2002

Manufacturer

LEACH International Europe  
 Niort  
 France

Nature of Approval

Qualification  
 Extension  
 Extension  
 Extension  
 Extension  
 Extension  
 Extension  
 Extension

Supervising Authority

ESTEC  
 ESTEC  
 ESTEC  
 ESTEC  
 CNES  
 CNES  
 CNES  
 CNES

Date



Apr 1978  
 Feb 1981  
 Feb 1983  
 Dec 1985  
 Jul 1989  
 Jul 1992  
 Sep 1995  
 Oct 1999

Characteristics

Contact Rating: 10 A 50 Vdc (100 000 ops)  
 50 A 50 Vdc (500 ops)

Contact Configuration: 2PDT  
 Coil Voltage: 26 Vdc

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

RELAY,  
 LATCHING, ELECTROMAGNETIC,  
 TYPE GP 3A

Current Validity of Qualification		Page
Certificate No. 04 G	Valid Until October 2001	09-03 002

## Section 10

## Component Type: Resistors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
10-02			Fixed, Film	
	10-02-001	94 H	Solid Core, Types RLR 05, 07, 20	Vishay S.A. Sfernice
	10-02-006	256 A	Surface Mount, Type MS1	Vishay Electronic (Selb)
10-03			Fixed, Film, High Stability, Non-Hermetic	
	10-03-002-4	95 H	Solid Core, Types RNC 50,55,60	Vishay S.A. Sfernice
10-04			Fixed, Film, High Precision	
	10-04-001	116 G	Type RNC 90	Vishay S.A. Sfernice
10-05			Fixed ,Wirewound	
	10-05-002-1	147 E	Types RWR 80, 81	Vishay S.A. Sfernice
	10-05-003-1	198 C	Types RER 60, 65	Vishay S.A. Sfernice
	10-05-004-1	263	Types MSP B HR	Vishay S.A. Sfernice
10-08			Chip	
	10-08-001	242 B	Type CH*P HR	Vishay S.A. Sfernice
	10-08-002	265	Type P HR	Vishay S.A. Sfernice
10-09			Flexible, Foil, Heaters	
	10-09-001-1	184 E	Single & Double Layer	IRCA
	10-09-001-2	237 B	Single & Double Layer	Nicolitch
10-10			Network	
	10-10-001	235 B	Single-in-Line	Vishay S.A. Sfernice


**QCC**
**QPL**

SECTION 10-\*\*: INDEX OF RESISTORS

Updated on 15-Oct-02

Types covered by similarity :  
Tolerance: 2%  
Value Series: E24

Remarks :

The qualified range for RLR07 has been extended to 4.7M.

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 4001	7	-	Apr 1999
Detail			
ESA/SCC 4001/005	4	B	Jul 1999
4001/006	4	A	Jan 1998
4001/007	4	A	Jan 1998

Manufacturer

Vishay S.A.  
Division Sfernice  
Nice  
France

Nature of Approval

Qualification

Extension

Extension

Extension

Extension

Extension

Extension

Extension

Extension

Supervising Authority

CNES

CNES

CNES

CNES

CNES

CNES

CNES

CNES

CNES

Date

Feb 1982

Jul 1984

Feb 1987

May 1990

Jan 1993

Mar 1994

Sep 1996

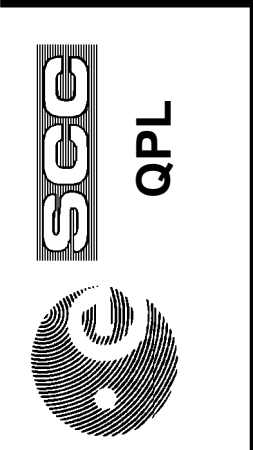
Jan 1999

Jul 2001

Characteristics

Style	Detail Spec.	Range (Ω)	Tol. (%)	TC (ppm/°C)	Power Rating (W)	Max. Voltage (V)
RLR 05	4001/005	1.0 - 1M	1	100	0.125	200
RLR 07	4001/006	1.0 - 4.7 M	1	100	0.25	250
RLR 20	4001/007	4.22 - 4.7 M	1	100	0.5	350

Operating Temperature Range (°C): -55 to +150  
Value Series : E96



RESISTORS,  
FILM, FIXED, METAL OXIDE,  
NON HERMETICALLY SEALED,  
BASED ON TYPES RLR 05, 07, 20

Current Validity of Qualification

Certificate No.

94 H

Valid Until

July 2003

Page

10-02

001

Types covered by similarity :

Tolerance ( ± %) = 0.1, 0.5, 1.0

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 4001	7	-	Apr 1999
Detail ESA/SCC 4001/022	2	-	Jun 2002

Manufacturer

VISHAY ELECTRONIC  
Division DRALORIC  
Selb  
Germany

Nature of Approval

Qualification  
Extension

Supervising  
Authority

DLR  
DLR


Date

Oct 1999  
Oct 2001

Characteristics : Critical R= 160 kΩ

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

Range (Ω)	Tol. (±%)	TC (±ppm/°C)	Value Series
43.2 - 1.0 M	0.1	50	E96
10.0 - 1.0 M	0.5		
2.2 - 5.11 M	1.0		
43.2 - 1.0 M	0.1	25	E96
10.0 - 1.0 M	0.5		
10.0 - 1.0 M	1.0		
43.2 - 0.221 M	0.1	15	E96
10.0 - 0.511 M	0.5		



**SGC**  
**QPL**

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

Current Validity of Qualification		Page
Certificate No. 256 A	Valid Until October 2003	10-02 006

Types covered by similarity :  
Tolerance: 1%

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 4001	7	-	Apr 1999
Detail ESA/SCC 4001/001 4001/002 4001/009	4	C	Apr 1999
	4	B	Apr 1999
	3	C	Apr 1999

Manufacturer

Vishay S.A.  
Division Sfernice  
Nice  
France

Nature of Approval

Qualification

Extension

Extension

Extension

Extension

Requalification

Extension

Extension

Extension

Supervising Authority

CNES

CNES

CNES

CNES

CNES

CNES

CNES

CNES

CNES

Date

Mar 1982

Jul 1984

Jul 1986

Feb 1990

Jan 1993

Jan 1994

Sep 1996

Jan 1999

Jul 2001

Characteristics

Style	Detail Spec.	Range ( $\Omega$ )	Tol. (%)	TC (ppm/ $^{\circ}$ C)
RNC 50	4001/009	1.0 - 48.7 49.9 - 1M	0.5	50 25, 50
RNC 55 & RNC 60	4001/001 & 4001/002	1.0 - 9.76 10 - 1M 1.05 - 4.7M	0.5	50 25,50 50

Value Series: E96

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



**QPL**

RESISTORS,  
FILM, FIXED,  
HIGH STABILITY, NON HERMETICALLY SEALED,  
BASED ON TYPES RNC 50, 55, 60

Current Validity of Qualification

Certificate No.

95 H

Valid Until

July 2003

Page

10-03

002-4

Types covered by similarity :

Tolerances:  $\pm 0.02, 0.05, 0.1, 0.2, 0.5, 1\%$

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 4001	7	-	Apr 1999
Detail ESA/SCC 4001/011	4	-	Jun 1996

Manufacturer

Vishay S.A.  
Division Sfernice  
Nice  
France

Characteristics: Variants 03, 04, 07, 08 are qualified

Style	Detail Spec.	Variant	Range ( $\Omega$ )	Tol. (%)	TC (ppm/ $^{\circ}$ C)	Power Rating (W)	Max. Voltage (V)
RNC 90 (RS92N)	4001/011	03	33 - 100k	0.02	$\pm 5, \leq 125^{\circ}$ C	0.5 @70 $^{\circ}$ C	300
		04	33 - 100k	0.05	$\pm 10, \leq 125^{\circ}$ C	0.3 @125 $^{\circ}$ C	
		07	33 - 100k	0.5	$\pm 10, >125^{\circ}$ C		
		08	33 - 100k	1.0	$\pm 10, \leq 175^{\circ}$ C		

Operating Temperature Range ( $^{\circ}$ C): - 55 to + 175  
Values: E192 series



**QPL**

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

Nature of Approval

Qualification  
Extension  
Extension  
Extension  
Requalification  
Extension  
Extension  
Extension

Supervising Authority

CNES  
CNES  
CNES  
CNES  
CNES  
CNES  
CNES  
CNES

Date

Dec 1983  
Oct 1986  
Nov 1989  
Jul 1992  
Apr 1994  
Sep 1996  
Jan 1999  
Jul 2001

Current Validity of Qualification

Certificate No.

116 G

Valid Until

July 2003

Page

10-04

001

Types covered by similarity :

Variant 05 of 4002/003 and 4002/005 are qualified.  
 Tolerances: ( $\pm$ ) 1, 2 and 5%.  
 Temperature Coefficient :  $\pm 50$  ppm/ $^{\circ}$ C for 1.0 < Rn < 10, and  $\pm 100$  ppm/ $^{\circ}$ C for Rn  $\leq 1.0$

Remarks :

**Procurement Specifications**  
 Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 4002	4	C	Apr 1999	Vishay S.A. Division Sfernice Nice France
Detail ESA/SCC 4002/003 4002/005	3	C	Apr 1999	
	2	B	Apr 1999	

**Nature of Approval**

**Supervising Authority**

**Date**

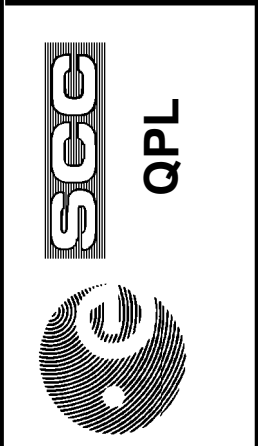
Qualification	CNES	Dec 1986
Extension	CNES	Jan 1991
Extension	CNES	Nov 1993
Extension	CNES	Feb 1996
Extension	CNES	Apr 1999
Extension	CNES	Jan 2002

**Characteristics**

Inductively wound: coated and moulded variants for 4002/003 and 4002/005

Style	Detail Spec.	Range ( $\Omega$ )	Tol. (%)	TC (ppm/ $^{\circ}$ C)	Power Rating (W)	Max. Voltage (V)	Type Variants
RWR 80 (RLP 2)	4002/003	0.5 - 2.2 K	0.5	30, $\geq 10 \Omega$	2	120	05
RWR 81 (RLP 1)	4002/005	0.5 - 1 K	0.5	30, $\geq 10 \Omega$	1	50	05

Operating Temperature Range ( $^{\circ}$ C): -55 to +275



RESISTORS,  
 WIRE-WOUND POWER, FIXED,  
 BASED ON TYPES RWR 80, 81

**Current Validity of Qualification**

**Page**

**Certificate No.**

**Valid Until**

10-05

147 E

January 2004

002-1

Types covered by similarity :

Remarks : Variant 02 not qualified

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 4003	5	A	Apr 1999
Detail ESA/SCC 4003/001 4003/002	3	B	Nov 1996
	3	A	Jan 1997

Manufacturer

Vishay S.A.  
Division Sfernice  
Nice  
France

Nature of Approval

Qualification  
Extension  
Extension  
Extension

Supervising Authority

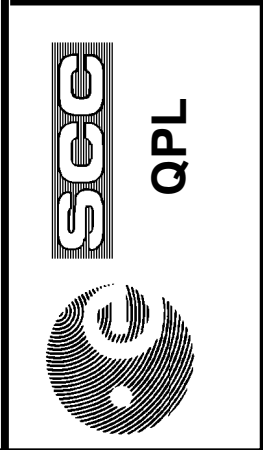
CNES  
CNES  
CNES  
CNES

Date

Nov 1993  
Feb 1996  
Jan 1999  
Apr 2001

Characteristics

Style	Detail Spec.	Range ( $\Omega$ )	Tol. ( $\pm\%$ )	ppm/oC ( $\pm$ )	Power Rating (W)
RER 60	4003/001	1.0 - 1.0 k	0.5, 1	30-50	5
RER 65	4003/002	1.0 - 2.0k	0.5, 1	30-50	10



**QPL**

RESISTORS,  
FIXED, WIRE-WOUND, CHASSIS-MOUNTED  
BASED ON TYPES RER 60, RER 65

Current Validity of Qualification

Certificate No.  
198 C

Valid Until  
April 2003

Page

10-05  
003-1



Types covered by similarity :

Variants 01, 02, 03 (inductively wound) are qualified

Tolerances: 1, 2, and 5%.

Temperature Coefficient to  $\pm 50$  and 100 ppm/ $^{\circ}\text{C}$  for values less than 5.0  $\Omega$  (for information only)

Remarks : Maintenance activities are underway.

**Procurement Specifications**  
Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 4002	4	C	Apr 1999	Vishay S.A. Division Sfernice Nice France
Detail ESA/SCC 4002/009	1	-	Mar 1999	

**Nature of Approval**

Qualification

**Supervising Authority**

CNES

**Date**

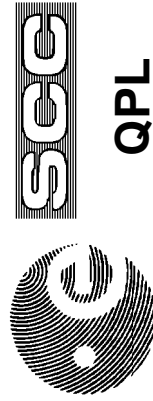
Sep 2000

**Characteristics**

Inductively wound, precision, surface mount

Style	Range ( $\Omega$ )	Tol. (%)	TC (ppm/ $^{\circ}\text{C}$ )	Power Rating (W)	Max. Voltage (V)	Type Variant
MSP 1 B	0.5 - 1.0 K	0.5	30, >10 $\Omega$	1.0	50	01
MSP 2 B	0.5 - 2.2 K	0.5	30, >10 $\Omega$	2.0	120	02
MSP 3 B	0.1 - 4.12 K	0.5	30, >10 $\Omega$	2.5	200	03

Operating Temperature Range ( $^{\circ}\text{C}$ ): -55 to +200



**QPL**

RESISTORS,  
WIRE-WOUND, FIXED, SURFACE MOUNT,  
BASED ON TYPE MSP B HR

**Current Validity of Qualification**

Certificate No.

263

Valid Until

September 2002

**Page**

10-05

004-1

Types covered by similarity :

Remarks :  
 TC  $\pm 100$  ppm/ $^{\circ}$ C for values  $\geq 10 \Omega$   
 TC  $\pm 200$  ppm/ $^{\circ}$ C for values  $1 \Omega$  to  $10 \Omega$   
 Qualified product is currently not available.  
 Validation of a new product is underway.


Procurement Specifications Issues in effect on certification date		Manufacturer	
Generic	Issue	Rev.	Date
ESA/SCC 4001	7	-	Apr 1999
Detail			
ESA/SCC 4001/016	1	A	Jan 2001
4001/017	1	A	Jan 2001
4001/018	1	A	Jan 2001
4001/019	1	A	Jan 2001
4001/020	1	B	Sept 2001

Nature of Approval	Supervising Authority	Date
Qualification	CNES	Jul 1997
Extension	CNES	Jan 2000
Extension	CNES	Nov 2000

Characteristics: Variants 01 and 03 are qualified

Style	Detail Spec.	Range ( $\Omega$ )	Tolerance ( $\pm\%$ )	TC ( $\pm 10$ -6/ $^{\circ}$ C)
CHP HR 0505	4001/016	1 - 1 M	1,2	100, 200
CHP HR 0705	4001/017	1 - 1 M	1,2	100, 200
CHP HR 0805	4001/018	1 - 1 M	1,2	100, 200
CHP HR 1010	4001/019	1 - 1 M	1,2	100, 200
CHP HR 1206	4001/020	1 - 1 M	1,2	100, 200

Value Series E96  
 Operating Temperature Range ( $^{\circ}$ C): - 55 to + 155

 <b>SGC</b> <b>QPL</b>	RESISTORS, FIXED, FILM, CHIP, BASED ON TYPE CHP HR	
	Current Validity of Qualification Certificate No. 242 B	Valid Until November 2002

Types covered by similarity :  
Variants 01, 02, 03, and 04 are qualified

Tolerances: R ≤ 100 ±0.05 %  
100 <R≤250 ±0.05, 0.02 %  
R > 250 ±0.01, 0.05, 0.02 %.

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date	Manufacturer
ESA/SCC 4001	7	-	Apr 1999	Vishay S.A. Division Sfernice Nice France
Detail ESA/SCC 4001/023	1	B	Jun 2002	

Nature of Approval

Qualification

Supervising Authority

CNES

Date

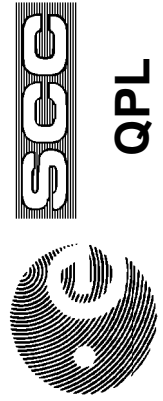
May 2001

Characteristics

Style	Range (Ω)	Tol. (±%)	TC (ppm/°C)	Critical R (Ω)	Limiting Voltage (V)	Type Variant
0603	50 - 0.2M	0.01, 0.02 and 0.05	±10	12.25k	35	01
0805	50 - 0.25M	0.01, 0.02 and 0.05	±10	45k	75	02
1206	50 - 1.0M	0.01, 0.02 and 0.05	±10	40k	100	03
2010	50 - 3.0M	0.01, 0.02 and 0.05	±10	45k	150	04

Operating Temperature Range (°C): -55 to155

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



**QPL**

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

Current Validity of Qualification

Certificate No.

265

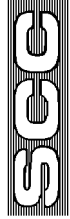

Valid Until



May 2003

Page

10-08

002

Types covered by similarity :		Remarks :				
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 4009	Issue 3	Rev. B	Date Apr 1999	Qualification	ESTEC	Apr 1992
Detail ESA/SCC 4009/002	1	-	Jan 1998	Extension	ESTEC	May 1994
IRCA Division Vittorio Veneto Italy				Extension	ESTEC	Mar 1996
Extension				Extension	ESTEC	Feb 1998
Extension				Extension	ESTEC	Apr 2000
Extension				Extension	ESTEC	Aug 2002
<b>Characteristics</b> 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. 184 E	Valid Until August 2004	10-09 001-1

Types covered by similarity :		Remarks : Maintenance activities to be initiated.				
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 4009	Issue 3	Rev. B	Date Apr 1999	Qualification	CNES	Dec 1996
Detail ESA/SCC 4009/001 4009/002	3 1	B A	Nov 1995 Jul 2002	Extension Extension	CNES CNES	Dec 1998 Jan 2001
Characteristics  Single layer and double layer heaters Maximum Ohmic density: 200 Ω/cm <sup>2</sup> Tolerances: ±2, 3, 5, 10 % Resistance range: 1 Ω to 5000 Ω Maximum Heating Side Dimension: 60 cm Terminal Lead: 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. 237 B	Valid Until January 2003	10-09 001-2

Types covered by similarity :

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC 4005	Issue	Rev.	Date	Manufacturer
	4	-	Apr 1999	Vishay S.A. Division Sfernice Nice France
Detail ESA/SCC 4005/003	2	-	Jan 1999	

Nature of Approval

Supervising Authority

Date

Qualification  
Extension  
Extension

CNES  
CNES  
CNES

Oct 1996  
Apr 1999  
Jul 2001

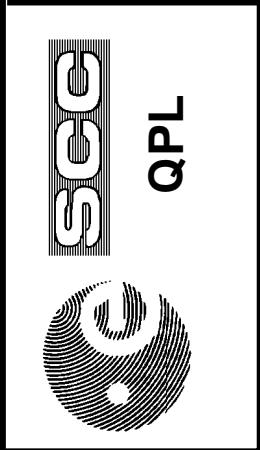
Characteristics:

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

Detail Spec.	Range ( $\Omega$ )	Tolerance	TC (10-6 $^{\circ}$ C)	Power Rating of Resistors (mW)	Limiting Element Voltage (UL)
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 ( $^{\circ}$ C): -55 to +125

Values: E48 series



RESISTORS,  
NETWORKS, THICK FILM,  
SINGLE-IN-LINE PACKAGES

Current Validity of Qualification

Certificate No.

Valid Until

Page

235 B

July 2003

10-10

001

## Section 11



## Component Type: Thermistors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
11-01			NTC	
	11-01-001	266 A	Type G*D* and *K3A*	Betatherm

**SCC****QPL**

SECTION 11-\*\*: INDEX OF THERMISTORS

Updated on 15-Oct-02

Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 4006	Issue 3	Betatherm Ireland Galway Ireland	Qualification Extension	ESTEC ESTEC	July 2001 Jan 2002
Detail ESA/SCC 4006/013 ESA/SCC 4006/014	Rev. A B C				
<p>Characteristics</p> <p>4006/013: Variants 01 to 05 are qualified</p> <p>4006/014: Variants 01 to 05 are qualified</p> <p>Operating Temperature Range (°C): -55 to 115 for 4006/013 and 0 to 160 for 4006/014</p>					
 		<p>Current Validity of Qualification</p> <p>Certificate No. 266 A</p> <p>Valid Until July 2003</p> <p>Page 11-01 001</p>			
		<p>THERMISTORS, (THERMALLY SENSITIVE RESISTORS), NTC, BASED ON TYPES *G*D AND *K3A*</p>			



## Section 12

## Component Type: Transistors

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
12-01			Low Power, NPN	
	12-01-002-3A-B	233 D	Types NPN	ST Microelectronics
	12-01-003-1	106 H	Type 2N2369A	ST Microelectronics
12-02			Low Power, PNP	
	12-02-002-3A-B	234 D	Types PNP	ST Microelectronics
	12-02-003-1	142 G	Type 2N2894	ST Microelectronics
12-03			High Power, NPN	
	12-03-001-2	107 G	Type 2N3440	ST Microelectronics
	12-03-006-1	143 E	Type 2N5672	ST Microelectronics
	12-03-007	253	Type 2N2880	SEMELAB
12-10			RF/Microwave, NPN, Low Power, Low Noise	
	12-10-001	230 A	Types BFY 193	Infineon
	12-10-002	245 A	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 A	Types CFY66 & 67, High Electron Mobility, Low Noise	Infineon





**SEC**

**QPL**

SECTION: 12-\*\*: INDEX OF TRANSISTORS

Updated on 15-Oct-02

Types covered by similarity :		Remarks :		
2N3019		The qualified range is outlined in the table on the next page. 2N3019 is introduced by similarity to 2N3700. Package LCCC6 is introduced as a 2N2920A variant.		
Procurement Specifications Issues in effect on certification date		Manufacturer		Date
Generic ESA/SCC 5000	Issue 9	Rev. A	ST Microelectronics Rennes France	Sep 1996
Detail Please refer to the next page.	Date Dec 2000			Sep 1997
Characteristics		Nature of Approval		
Maximum Ratings:		Supervising Authority		
2N2222A 2N2484 2N2219A 2N5551 2N3700 2N3019 2N5154 BUX 77 2N 2920A $V_{CB0}$ (V): 75 60 75 40 $BV_{CB0}$ (V): 180 140 140 100 100 60 $V_{CE0}$ (V): 40 60 40 $BV_{CE0}$ (V): 160 80 80 80 80 60		Qualification		
Packages : TO-18, TO-39, TO-66, TO-77, TO-257, LCCC3 and LCCC6		Extension		
Operating Temperature Range (°C): - 65 to + 200		Extension		
 		Current Validity of Qualification		Page
TRANSISTORS, LOW AND HIGH POWER, NPN		Certificate No. 233 D		Valid Until November 2003
				12-01 002-3 A

Types covered by this certificate

ESA/SCC Spec. No.	Issue	Rev.	Date	Component Type	Package
5201/001	5	B	Jun 1999	2N 2484	TO-18, LCCC3
5201/002	4	C	Jan 2001	2N 2222A	TO-18, LCCC3
5201/019	1	B	May 2002	2N 5551	TO-18, LCCC3
5201/003	5	C	Aug 1996	2N 2219 A	TO-39
5201/004	4	D	Aug 1998	2N 3700	TO-18, LCCC3
5203/010	4	-	Jan 1998	2N 5154, BFX 34	TO-39, TO-257
5203/016	4	-	Jan 1998	BUX 77	TO-66, gold or nickel plated, TO-257
5207/002	6	C	Feb 2000	2N 2920A	TO-77, and LCCC6
5201/011	2	-	Jan 2001	2N3019	TO-39



**SGE**

**QPL**

TRANSISTORS,  
LOW AND HIGH POWER,  
NPN

Current Validity of Qualification

Certificate No.  
233 D

Valid Until  
November 2003

Page

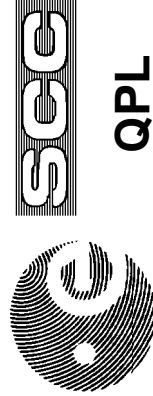
12-01

002-3 B

Types covered by similarity :

Remarks :

Types covered by similarity :		Procurement Specifications Issues in effect on certification date				Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 5000	Issue 9	Rev. A	Date Dec 2000	ST Microelectronics Rennes France		Qualification	CNES	Feb 1983	
Detail ESA/SCC 5201/006	3	B	Jun 1999			Requalification	CNES	Jul 1987	
						Extension	CNES	Apr 1990	
						Extension	CNES	Aug 1992	
						Extension	CNES	Jun 1995	
						Extension	CNES	Sep 1996	
						Extension	CNES	Sep 1997	
						Extension	CNES	Nov 1999	
						Extension	CNES	Nov 2001	
<p><b>Characteristics</b></p> <p><math>h_{FE}</math> min/max: 40/120 at <math>I_C = 10</math> mA  <math>t_{on}</math>: 12 ns  <math>V_{CE SAT}</math>: 0.5V at <math>I_C = 100</math> mA  <math>t_{off}</math> : 18 ns</p> <p><b>Maximum Ratings:</b>  <math>P_D</math>: 360 mW at <math>T_{amb} + 25^\circ C</math>;  <math>BV_{CBO}</math>: 40 V;  <math>BV_{CEO}</math> : 15 V;  <math>I_C</math> : 500 mA, 10 <math>\mu</math>sec pulse            Package Types: TO-18 and LCCC3            Operating Temperature Range (<math>^\circ C</math>): -65 to +200</p>									
<p>TRANSISTORS, LOW POWER, NPN, TYPE 2N 2369A</p>						Current Validity of Qualification		Page	
						Certificate No. 106 H	Valid Until November 2003	12-01 003-1	




**QPL**

Types covered by similarity :

2N3350, 2N4033

Remarks :

The qualified range is outlined in the table on the next page. 2N3350 and 2N4033 are introduced to the qualified domain. Package LCCC6 is introduced to the qualified domain.

Procurement Specifications Issues in effect on certification date		Manufacturer		Supervising Authority	Date																								
Generic	Issue	Rev.	Date																										
ESA/SCC 5000	9	A	Dec 2000	CNES	Sep 1996																								
Detail	Please refer to the next page.			CNES	Sep 1997																								
Characteristics				CNES	Aug 1998																								
Maximum Ratings:				CNES	Nov 1999																								
<table border="0"> <tr> <td><u>2N2905A</u></td> <td><u>2N2907A</u></td> <td><u>2N3350</u></td> <td><u>2N3810</u></td> <td><u>2N4033</u></td> <td><u>2N5153</u></td> <td><u>BUX 78</u></td> <td><u>2N5401</u></td> </tr> <tr> <td>BV<sub>CBO</sub> (V): 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): 60</td> <td>60</td> <td>45</td> <td>60</td> <td>80</td> <td>80</td> <td>80</td> <td>150</td> </tr> </table>				<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	CNES	Nov 2001
<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																						
Packages : TO-78, TO-66, TO-39, TO-18, TO-257, LCCC3 and LCCC6																													
Operating Temperature Range (°C): -65 to +200																													
 <b>QPL</b>				Current Validity of Qualification																									
				Certificate No. 234 D	Valid Until November 2003																								
				Page	12-02																								
					002-3 A																								



**QPL**

TRANSISTORS,  
LOW AND HIGH POWER,  
PNP

Types covered by this certificate

ESA/SCC Spec. No.	Issue	Rev.	Date	Component Type	Package
5202/002	5	D	Aug 1996	2N 2905A	TO-39
5202/001	6	C	Jun 1999	2N 2907A	TO-18 and LCCC3
5202/014	1	A	Jun 1999	2N 5401	TO-18 and LCCC3
5204/002	4	-	Jan 1998	2N 5153	TO-39, TO-257
5204/006	4	-	Jan 1998	BUX 78	TO-66, gold or nickel plated, TO-257
5207/005	6	B	Nov 1999	2N 3810	TO-78, and LCCC6
5207/003	3	C	Feb 2000	2N 3350	TO-77, and LCCC6
5202/008	3	A	Jan 2001	2N4033	TO-39, and LCCC3



**SGS**

**QPL**

TRANSISTORS,  
LOW AND HIGH POWER,  
PNP

Current Validity of Qualification

Certificate No.  
234 D


Valid Until  
November 2003

Page

12-02

002-3 B





Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer		Supervising Authority	
Generic ESA/SCC 5000	Issue 9	Rev. A	Date Dec 2000	Qualification CNES	Date Feb 1983
Detail ESA/SCC 5203/011	4	-	Aug 1996	Requalification CNES	Jul 1987
Characteristics			Extension CNES	Mar 1993	
$h_{FE(dc)}$ min/max: 40/160 at $I_C = 20$ mA $V_{CE SAT}$ : 0.5 V at $I_C = 50$ mA Maximum Ratings: P <sub>D</sub> : 5 W at T <sub>case</sub> + 25° C; BV <sub>CBO</sub> : 300 V; BV <sub>CEO</sub> : 250 V; I <sub>C</sub> : 1 A Package Type: TO-39 Case Operating Temperature Range (°C): -65 to +200			Extension CNES	Jun 1995	
			Extension CNES	Sep 1997	
			Extension CNES	Nov 1999	
			Extension CNES	Nov 2001	
		TRANSISTORS, HIGH POWER, NPN, TYPE 2N 3440		Current Validity of Qualification	
				Certificate No. 107 G	Valid Until November 2003
				Page 12-03 001-2	



Types covered by similarity :

Remarks : Maintenance activities to be initiated.


Types covered by similarity :		Procurement Specifications Issues in effect on certification date				Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 5000	Issue 9	Rev. A	Date Dec 2000	ST Microelectronics Rennes France		Qualification	CNES	Jul 1987	
Detail ESA/SCC 5203/004	2	B	Oct 1994			Extension	CNES	Apr 1990	
						Extension	CNES	Aug 1992	
						Extension	CNES	Jun 1995	
						Extension	CNES	Sep 1997	
						Requalification	CNES	Jun 2000	
<p>Characteristics</p> <p><math>h_{FE}</math> min/max: 20/100 at <math>I_C = 15 A</math>  <math>V_{CE SAT}</math> (max): 0.75 V at <math>I_C = 15 A</math>                      Maximum Ratings:  <math>P_D</math>: 140 W at <math>T_{case} + 25^\circ C</math>;  <math>BV_{CBO}</math>: 150 V;  <math>BV_{CEO}</math> : 120 V;  <math>I_C</math> : 30 A                      Package Type: T0-3 Case, gold lead                      Operating Temperature Range (<math>^\circ C</math>): -65 to +200</p>									
		TRANSISTORS, HIGH POWER, NPN, TYPE 2N 5672				Current Validity of Qualification		Page	
						Certificate No. 143 E	Valid Until June 2002	12-03 006-1	

Types covered by similarity :		Remarks : Maintenance activities underway			
Procurement Specifications Issues in effect on certification date		Manufacturer		Date	
Generic ESA/SCC 5000	Issue 9	Rev. A	SEMELAB Lutterworth England		Dec 2000
Detail ESA/SCC 5203/025	3	A			Sep 1998
<p>Characteristics</p> <p>Variants 09, 10, 11, and 12 are qualified .</p> <p>Maximum Ratings:</p> <p><math>P_{tot}</math>: 20 W at <math>T_{case} + 100^{\circ}C</math> ;</p> <p><math>R_{TH(J-C)}</math> 5 ° C/W</p> <p><math>V_{CB}</math>: 150 V ;</p> <p><math>V_{CE}</math>: 80 V ;</p> <p><math>I_C</math> : 5 A, d.c. continuous</p> <p>Package Type: T0-257 Case</p> <p>Operating Temperature Range (<math>^{\circ}C</math>): -55 to +200</p>					
		TRANSISTORS, POWER, NPN, TYPE 2N 2880		Current Validity of Qualification	
				Certificate No. 253	Valid Until December 2000
				Page 12-03 007	

Types covered by similarity :

All variants are qualified (BFY 180, 181, 182, 183, 193, and 280)


Remarks : Maintenance activities to be initiated.



Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 5010	Issue 5	Infineon Technologies AG München Germany	Qualification Extension	DARA DLR	Jun 1996 Jan 2000
Detail ESA/SCC 5611/006	Rev. C				
<p>Characteristics for BFY 193:</p> <p> <math>V_{CE0}</math> (V)<sub>max.</sub> 12 @ <math>V_{CE}</math>= 8.0 V, <math>I_C</math>= 30 mA  <math>V_{CBO}</math> (V)<sub>max.</sub> 20 @ <math>V_{CE}</math>= 5.0 V, <math>I_C</math>= 15 mA  <math>h_{fe}</math> min./max 50/175 @ 2 GHz  <math>NF</math> (dB)<sub>max.</sub> 2.9 @ 2 GHz  <math>MAG/MSG</math> (dB)<sub>min.</sub> 12.5 @ 500 MHz  <math>f_T</math> (GHz)<sub>min.</sub> 7 @ <math>V_{CE}</math>= 5.0 V, <math>I_C</math>= 40 mA                 </p> <p>Package: "Micro-X"                      Total Power Dissipation (<math>P_{Tot}</math>)= 580 mW                      Operating Temperature Range (°C): <math>T_{op}</math> = -65 to +200</p>					
 <p>TRANSISTORS, MICROWAVE, SMALL SIGNAL, BIPOLAR BASED ON TYPE BFY 193</p>			Current Validity of Qualification		Page
			Certificate No. 230 A	Valid Until January 2002	12-10 001

Types covered by similarity :

All variants are qualified (BFY 405, 420, and 450)

Remarks : Maintenance activities to be initiated.

Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date	
Generic ESA/SCC 5010	Issue 5	Infineon Technologies AG München Germany	Qualification Extension	DARA DLR	Jun 1997 Jan 2000	
Detail ESA/SCC 5611/008	Rev. C - 1					Date Jun 2001 Mar 1996
<p>Characteristics for BFY 450:</p> <p> <math>V_{CE0}</math> (V) max. 4.5  <math>V_{CBO}</math> (V) max. 15  <math>I_C</math> (mA) max. 100  <math>I_B</math> (mA) max. 10  <math>h_{fe}</math> min./max. 50/150 @ <math>V_{CE} = 1.0</math> V, <math>I_C = 20</math> mA  NF (dB) max. 2.0 @ <math>V_{CE} = 2.0</math> V, <math>I_C = 10</math> mA  <math>f_T</math> (GHz) min. 18 @ <math>V_{CE} = 3.0</math> V, <math>I_C = 90</math> mA </p> <p>Package: "Micro-X"  Total Power Dissipation (<math>P_{Tot}</math>) = 450 mW  Operating Temperature Range (<math>^{\circ}C</math>): <math>T_{op} = - 65</math> to <math>+ 175</math></p>						
		<p>TRANSISTORS, MICROWAVE, SMALL SIGNAL, BIPOLAR BASED ON TYPE BFY 450</p>				Page
						Current Validity of Qualification

Types covered by similarity :		Remarks : Maintenance activities to be initiated.			
Procurement Specifications Issues in effect on certification date		Manufacturer		Date	
Generic ESA/SCC 5010	Issue 5	Rev. C	Infineon Technologies AG München Germany		Nov 1997
Detail ESA/SCC 5614/006	1	-			Jan 2000
<p>Characteristics for CLY 32:</p> <p><math>V_{DS}</math> (V) max. 14</p> <p><math>V_{DG}</math> (V) max. 16</p> <p><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</p> <p><math>\Gamma_{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: "MWVP 25"</p> <p>Total Power Dissipation (<math>P_{tot}</math>)= 7.5 W</p> <p>Channel Temperature Range (<math>^{\circ}C</math>): <math>T_{ch} = -65</math> to <math>+175</math></p>					
Nature of Approval		Supervising Authority		Page	
Qualification		DLR		12-15	
Extension		DLR		001-1	
Current Validity of Qualification		Certificate No.		Valid Until	
246 A		246 A		January 2002	
		<p>TRANSISTORS,</p> <p>MICROWAVE, METAL SEMICONDUCTOR FIELD EFFECT, POWER,</p> <p>GALLIUM ARSENIDE</p> <p>BASED ON TYPE CLY 32</p>			
					

Types covered by similarity :

All variants are qualified

Remarks : Maintenance activities to be initiated.

Procurement Specifications  
Issues in effect on certification date

Generic	Issue	Rev.	Date
ESA/SCC 5010	5	C	Jun 2001
Detail			
ESA/SCC 5613/002	1	A	Jul 1994
ESA/SCC 5613/004	1	A	Aug 1994

Manufacturer

Infineon Technologies AG  
München  
Germany

Supervising Authority

DARA  
DLR

Nature of Approval

Qualification  
Extension

Date

Apr 1994  
Jan 2000

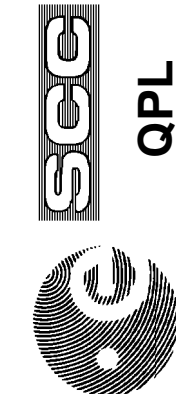
Characteristics (@ 12 GHz):

	NFmin.(dB)	Ga (dB)
5613/002	0.8	10
lattice matched	1.0	9.5
5613/004	0.8	11
pseudo-morphic	1.0	10.5

Package: "MICRO-X"

Total Power Dissipation (P<sub>tot</sub>)=200 mW derated from +31 °C

Storage Temperature Range (°C): T<sub>stg</sub> = -65 to +150



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

Current Validity of Qualification

Certificate No.  
213 A

Valid Until  
January 2002

Page

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 J	Polyimide, Types FA-3901-1, FA 3901-2	Draka Fileca
	13-01-001-2	09 J	Polyimide, Types 1871-1872	Nexans
	13-01-001-3	132 F	Polyimide, Types 3901002**B	Axon' Cable
	13-01-003	08 J	PTFE, Types MTV-BTV	Nexans
	13-01-004-2	219 C	Polyimide, Type SPL	Gore
	13-01-004-3	268	Polyimide, Type 3901019**B	Axon' Cable
	13-01-005-1	159 E	Crosslinked PTFE, Type Silver-Plated Copper	Tyco Electronics
	13-01-005-2	267	Crosslinked PTFE, Type Silver-Plated Copper	Axon' Cable
	13-01-008	215 D	PTFE, Polyimide / PFA Insulated, Type SPP	Gore
	13-01-009	216 C	PTFE, Polyimide / PFA Insulated, Shielded, Type SPM	Gore
	13-01-010-1	229 C	Polyimide, Insulated, Shielded, Type SPLD, Drain Wire	Gore
	13-01-011-1	257 A	Crosslinked Modified ETFE, Type Silver-Plated Copper, Lightweight	Tyco Electronics
13-02			Coaxial, RF, Flexible	
	13-02-001	24 K	PTFE/Polyimide, Type 50 CIS	Nexans
	13-02-002-1	255 A	Coaxial, Triaxial, Balanced Shielded Line	Gore



**SCC**

**QPL**


SECTION 13-\*\*: INDEX OF WIRES AND CABLES

Updated on 15-Oct-02

Types covered by similarity :


FA 3901-1 Variants 24 to 47 are qualified  
 FA 3901-2 Variants 31 to 73 are qualified

Remarks :


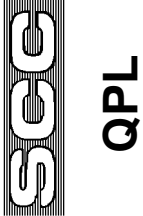
Procurement Specifications Issues in effect on certification date		Manufacturer		Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3901	Issue 5	Rev. B	Date Feb 2002	Qualification	CNES	Jan 1979
Detail ESA/SCC 3901/001 3901/002	3 3	- -	Jan 1996 Jan 1996	Extension Extension	CNES CNES	Sep 1981 Jan 1984
Characteristics				Extension	CNES	Aug 1986
Voltage Rating, maximum (Vrms): 600				Extension	CNES	Jan 1989
Temperature Range (°C): -100 to +200				Extension	CNES	Apr 1991
				Extension	CNES	Jun 1993
				Extension	CNES	Jun 1995
				Extension	CNES	Aug 1997
				Extension	CNES	Aug 1999
				Extension	CNES	Jan 2002
 <b>QPL</b> WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION, BASED ON TYPES FA 3901-1, FA 3901-2				Current Validity of Qualification		Page
				Certificate No. 07 J	Valid Until January 2004	13-01 001-1








Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3901	Issue 5	Rev. B	Date Feb 2002	AXON' CABLE Montmirail France	Qualification ESTEC
Detail ESA/SCC 3901/002	3	-	Jan 1996	ESTEC	Dec 1985
Characteristics		ESTEC			
Voltage Rating, maximum (Vrms) : 600		ESTEC			
Temperature Range(°C): -100 to +200		ESTEC			
		Current Validity of Qualification		Page	
<b>QPL</b> WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION, BASED ON TYPE 3901002**B		Certificate No. 132 F		Valid Until June 2004	
				13-01 001-3	




Types covered by similarity :		Remarks : Maintenance activities to be initiated.			
Variants 1-94 are qualified					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 3901	Issue 5	Rev. B	Date Feb 2002	W.L. Gore & Co Pleinfield Germany	
Detail ESA/SCC 3901/019	1	A	Apr 1995		
Characteristics					
Voltage Rating, maximum, (Vrms): 600					
Temperature Range, (°C): -200 to +200					
		Nature of Approval		Supervising Authority	
		Qualification		DARA	
		Extension		DARA	
		Extension		DLR	
		Extension		DLR	
				Date	
				Nov 1994	
				Nov 1996	
				Oct 1998	
				Oct 2000	
		Current Validity of Qualification		Page	
		Certificate No.		Valid Until	
		219 C		October 2002	
		Wires and Cables, Low Frequency, Polyimide Insulation Based on Type SPL			
					

Types covered by similarity :		Remarks :			
Variants of construction AWG 12 to 28					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 3901	Issue 5	Rev. B	Date Feb 2002	AXON' CABLE Montmirail France	
Detail ESA/SCC 3901/019	1	A	Apr 1995		
Characteristics		Nature of Approval			
AWG 12 to 28 inclusive are qualified		Qualification			
Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -200 to +200		Supervising Authority			
		CNES			
		Date			
		Jun 2002			
 <b>SCC</b> <b>QPL</b>		Current Validity of Qualification		Page	
		Certificate No. 268	Valid Until June 2004	13-01	004-3
WIRES AND CABLES, LOW FREQUENCY, POLYIMIDE INSULATION BASED ON TYPE 3901019**B					

Types covered by similarity : All variants except for 26 and 28 AWG products		Remarks : This product is not intended for manned space applications.	
Procurement Specifications Issues in effect on certification date		Nature of Approval	Supervising Authority
Generic ESA/SCC 3901	Issue 5	Rev. B	Date Feb 2002
Detail ESA/SCC 3901/012	2	B	Nov 2000
Manufacturer Tyco Electronics Dorcan, Swindon England		Qualification RAE	Feb 1989
		Extension RAE	Jul 1992
		Extension DRA	Mar 1995
		Extension DERA	Sep 1997
		Extension DERA	Oct 1999
		Extension QinetiQ	Nov 2001
Characteristics Maximum voltage: 600 Vrms Operating temperature range (°C): -100 to +200			
Current Validity of Qualification		Page	
Certificate No. 159 E		Valid Until November 2003	
 <b>QPL</b>		WIRES AND CABLES, LOW FREQUENCY, 600V, SILVER-PLATED COPPER, EXTRUDED CROSSLINKED FLUOROPOLYMER INSULATION	

Types covered by similarity :		Remarks :			
This product is not intended for manned space applications.		This product is not intended for manned space applications.			
Procurement Specifications Issues in effect on certification date		Nature of Approval		Supervising Authority	
Generic ESA/SCC 3901	Issue 5	Rev. A	Date Dec 2000	CNES	
Detail ESA/SCC 3901/012	2	B	Nov 2000	Date Mar 2002	
Manufacturer		Qualification			
AXON' CABLE Montmirail France					
Characteristics					
Variant 06 is qualified					
Wire code ISO 2635, 006					
Voltage Rating, maximum (Vrms) : 600					
Temperature Range(°C): -100 to +200					
Current Validity of Qualification		Certificate No.		Valid Until	
Page		267		March 2004	
 <b>QPL</b>		WIRES AND CABLES, LOW FREQUENCY, 600V, SILVER-PLATED COPPER, EXTRUDED CROSSLINKED FLUOROPOLYMER INSULATION BASED ON TYPE P515643A			

Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3901	Issue 5	W.L. Gore & Co Pleinfield Germany	Qualification	DARA	Jul 1994
Detail ESA/SCC 3901/017	Rev. B				
	1		Extension	DLR	Aug 1998
			Extension	DLR	Aug 2000
			Extension	DLR	Aug 2002
Characteristics					
Voltage Rating, maximum, (Vrms): 600V Temperature Range, (°C): -200 to +200					
Expanded PTFE, extruded polyimide/fluorothermoplast insulation					
 <b>QPL</b>		Current Validity of Qualification		Page	
		Certificate No. 215 D	Valid Until August 2004	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	Date
Generic ESA/SCC 3901	Issue 5	Rev. B	Feb 2002
Detail ESA/SCC 3901/018	1	A	Apr 1994
<p>Characteristics</p> <p>Voltage Rating, maximum, (Vrms): 600 Temperature Range, (°C): -200 to +200</p> <p>Expanded PTFE, polyimide / FEP, sintered PTFE insulated wires. Expanded PTFE, extruded polyimide / fluorothermoplast insulated cables, shielded and jacketed.</p>		<p>Wires and Cables, Low Frequency, Insulated, Polyimide/Fluorothermoplast, based on type SPM</p>	<p>Qualification</p> <p>Extension</p> <p>Extension</p> <p>Extension</p>
		DARA	Jul 1994
		DARA	Sep 1997
		DLR	Aug 1999
		DLR	Aug 2001
		Current Validity of Qualification	Page
		Certificate No. 216 C	Valid Until August 2003
			13-01
			009





**QPL**



Types covered by similarity :		Remarks :			
Procurement Specifications Issues in effect on certification date		Manufacturer	Nature of Approval	Supervising Authority	Date
Generic ESA/SCC 3901	Issue 5	W.L. Gore & Co Pleinfield Germany	Qualification	DARA	Feb 1996
Detail ESA/SCC 3901/021	1		Extension	DLR	Feb 1998
			Extension	DLR	Feb 2000
			Extension	DLR	Feb 2002
Characteristics					
Voltage Rating, maximum, (Vrms): 600					
Temperature Range, (°C): -200 to +200					
 		Current Validity of Qualification		Page	
POLYIMIDE INSULATED SHIELDED CABLES WITH DRAIN WIRE, LOW FREQUENCY, BASED ON TYPE SPLD		Certificate No. 229 C		Valid Until February 2004 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	Date
Generic ESA/SCC 3901	Issue 5	Tyco Electronics Dorcan, Swindon England	Oct 1999 Jan 2002
Detail ESA/SCC 3901/020 ESA/SCC 3901/022	Rev. B C -		
<p>Characteristics</p> <p>Wires and Cables variants consists of 1, 2, 3, and 4 cores with and without jackets and shields</p> <p>ESA/SCC Detail Specification No. 3901/020 cables are silver-plated copper braided, and</p> <p>ESA/SCC Detail Specification No. 3901/022 cables are silver-plated copper spiral shielded,</p> <p>Wire sizes are in accordance with ISO 2635.</p> <p>Maximum voltage: 600 Vrms</p> <p>Operating temperature range (°C): -100 to +200</p>		Nature of Approval	Supervising Authority
		Qualification Extension	DERA QinetiQ
 <b>QPL</b>		Current Validity of Qualification	
		Certificate No. 257 A	Valid Until January 2004
<p>WIRES AND CABLES, LOW FREQUENCY, 600V, SILVER-PLATED COPPER, EXTRUDED CROSSLINKED MODIFIED ETFE, LIGHTWEIGHT</p>		Page 13-01 011-1	



Types covered by similarity :		Remarks : Maintenance activities to be initiated.			
Variants 03 to 06, 10 to 13, and 20 to 25 are qualified					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 3902	Issue 4	Rev. C	Date Apr 1999	W.L. Gore & Co Pleinfield Germany	
Detail ESA/SCC 3902/002	2	A	Jan 1999	DLR DLR	
Nature of Approval		Supervising Authority			
Qualification		DLR			
Extension		DLR			
Date		Jan 1999 Feb 2001			
Characteristics		Current Validity of Qualification			
Variants encompass coaxial, triaxial, and balanced shielded line		Certificate No. 255 A			
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		Valid Until February 2003			
AWG Range: 20, 22, 24, 26, 28, 30 dependent on variant		Page 13-02 002-1			
Temperature Range, (°C): -200 to +180		WIRES AND CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL, TRIAxIAL AND SYMMETRIC			
 					

## Section 14

## Component Type: Miscellaneous

Sub-Section	Page No.	Cert.	Type Designation	Manufacturer
14-01			Passive Devices, RF	
	14-01-002-2	185 B	Coaxial Loads, to 22 GHz	Radiall
	14-01-004	178 C	Attenuators, Type R413	Radiall

**SCC****QPL**

SECTION 14-\*\*: MISCELLANEOUS

Updated on 15-Oct-02

Types covered by similarity :

Remarks :

Procurement Specifications  
Issues in effect on certification date

Generic ESA/SCC 3403	Issue 3	Rev. C	Date Feb 2002	Manufacturer
Detail ESA/SCC 3403/006	2	A	Feb 2002	RADIALL La Verpilliere France

Nature of Approval

Supervising Authority

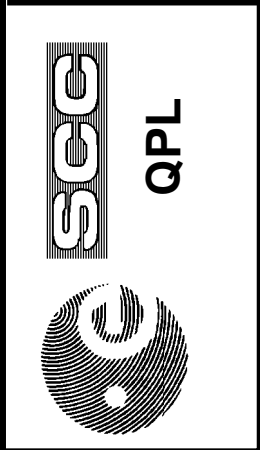
Date

Qualification	CNES	Jul 1992
Extension	CNES	Jun 1997
Extension	CNES	Jan 2002

Characteristics

Type	Detail Spec.	Frequency Range (GHz)	Rated Pin (W)	Impedance ( $\Omega$ )
3403/006	3403/006	0 - 22	1	50
VSWR max				
Type	$0 < f(\text{GHz}) \leq 4$	$4 < f(\text{GHz}) \leq 12.4$	$12.4 < f(\text{GHz}) \leq 18.4$	$18.4 < f(\text{GHz}) \leq 22$
1	1.05	1.10	1.15	1.20
2	1.05	1.15	1.20	1.25

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



**QPL**

PASSIVE DEVICES, RF, COAXIAL,  
LOADS, 0 - 22GHz,  
BASED ON TYPE R404

Current Validity of Qualification

Certificate No.

Valid Until


Page

185 B

March 2004

14-01

002-2

Types covered by similarity :		Remarks :			
Variants 01 to 31					
Procurement Specifications Issues in effect on certification date		Manufacturer			
Generic ESA/SCC 3403	Issue 3	Rev. C	Date Feb 2002	RADIALL La Verpilliere France	
Detail ESA/SCC 3403/005	2	A	Feb 2002		
Characteristics					
Frequency range (GHz): 0 - 22					
Attenuation (dB): 0 - 20					
Temperature range (°C): -55 to +125					
		Nature of Approval		Supervising Authority	
		Qualification		CNES	
		Extension		CNES	
		Extension		CNES	
		Extension		CNES	
		Date		Jan 1991	
				Jan 1994	
				Jun 1997	
				Mar 2002	
		Current Validity of Qualification		Page	
		Certificate No. 178 C		Valid Until March 2004	
				14-01	
				004	
		R.F. ATTENUATORS FIXED, COAXIAL BASED ON TYPE R413			
