DOCUMENT CHANGE REQUEST

DCR number 540	Changes required for: General	Originator: S Jeffery - ESCC
Date: 2009/08/18	Date sent: 2009/08/18	Organisation: ESA/ESTEC
Status: IMPLEMENTED		

Title:	Load, RF, Coaxial, Type SMA, DC-18GHz		
Number:	3403/004	Issue:	2

Other documents affected:

Page:

Specification 3403/004 Issue 2 is updated to accompany the updated Generic 3403. Changes are summarised herein (see attached Issue 3 - Draft A).

Paragraph:

Specification 3403/004 Issue 2 is updated to accompany the updated Generic 3403. Changes are summarised herein (see attached Issue 3 - Draft A).

Original wording:

Proposed wording:

To introduce a number of editorial changes (see the attached mark-up) which are required to make this detail spec clear, complete and consistent.

Justification:

Improve the appearance and clarity of the spec.

Attachments:

3403004_Issue_3_Draft_A.pdf, null

Modifications:

Approval by PSWG 45

Approval signature:



Date signed:

2009-08-18

LOAD,

RF, COAXIAL, TYPE SMA, DC - 18GHz

ESCC Detail Specification No. 3403/004

as applicable

Issue ~~2~~ 3 - Draft A	~~June 2007~~

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

as applicable

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DOCUMENTATION CHANGE NOTICE

(Refer to https://escies.org for ESCC DCR content)

DCR No.	CHANGE DESCRIPTION
tbd	Specification upissued to incorporate editorial and technical changes per DCR

1.5 MAXIMUM RATINGS

At $T_{amb} \leq +25°C$

The maximum ratings shall not be exceeded at any time during use or storage.

Maximum ratings shall only be exceeded during testing to the extent specified in this specification and when stipulated in Test Methods and Procedures of the ESCC Generic Specification.

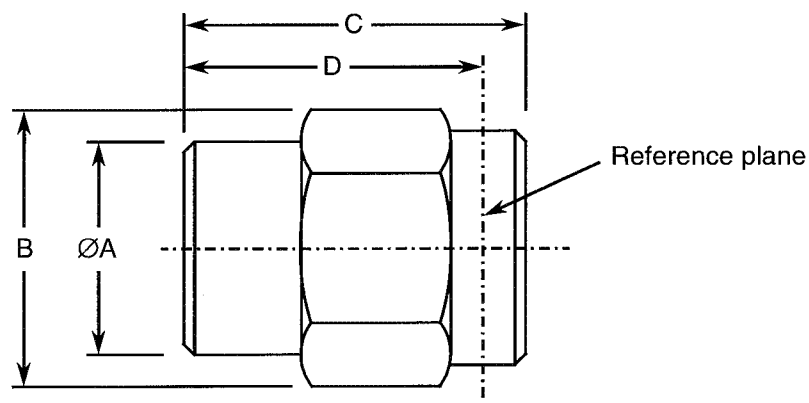
Characteristics	Symbols	Maximum Ratings	Units	Remarks
RF Power	P_{RF}	1	W	Note 1, 2
Peak Power	P_P	100	W	duration 1µs 1% duty cycle
DC Power	P_{DC}	1	W	T_{amb}=+25°C
Impedance	Z	47.5 to 52.5	Ω	-
Frequency Range	f_{op}	DC to 18	GHz	-
RF Leakage	E	-[80 - f(GHz)]	dBi	-
Operating Temperature Range	T_{op}	-55 to +125	°C	T_{amb}
Storage Temperature Range	T_{stg}	-55 to +125	°C	-
Coupling Nut Torque	Tq	120	N.cm	Note 3

Make ° symbols bigger

NOTES:

1. With Load mated with a mounted square flange SMA connector.
2. ~~RF Power shall be derated against operating temperature as follows:~~ For $T_{amb} > +25°C$, P_{RF} at $T_{op} \leq +25°C$. Derate linearly to 0W at $T_{op} = +125°C$.
   lower case
   make ° symbol bigger
3. Coupling Proof Torque: 170N.cm

1.6 PHYSICAL DIMENSIONS



– Gaskets: Silicone rubber.

2. REQUIREMENTS

2.1 GENERAL

The complete requirements for procurement of the components specified herein are as stated in this specification and the ESCC Generic Specification. Permitted deviations from the Generic Specification, applicable to this specification only, are listed below.

Permitted deviations from the Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESCC requirement and do not affect the component's reliability, are listed in the appendices attached to this specification.

2.1.1 Deviations from the Generic Specification

2.1.1.1 Deviations from Qualification and Periodic Tests - Chart F4

(a) Residual Magnetism: is not applicable to variants 02, 03.

2.2 MARKING

The marking shall be in accordance with the requirements of ESCC Basic Specification No. 21700 and as follows.

The information to be marked on the component shall be:

(a) The ESCC qualified components symbol (for ESCC qualified components only).
(b) The ESCC Component Number.
(c) Traceability information.

2.3 COUPLING PROOF TORQUE TEST

Ref. Coupling Proof Torque in the ESCC Generic Specification.
Coupling Proof Torque: 170N.cm.

2.4 MATING AND UNMATING FORCES TEST

Ref. Mating and Unmating Forces in the ESCC Generic Specification.
Maximum Torque during mating or unmating: 24N.cm.

lower case

2.5 ELECTRICAL MEASUREMENTS AT ROOM, HIGH AND LOW TEMPERATURES

The measurements shall be performed at room, high and low temperatures.

2.5.1 Room Temperature Electrical Measurements

The measurements shall be performed at T_{amb}=+22 ±3°C.

Characteristics	Symbols	Test Method and Conditions	Limits		Units
			Min	Max	
Voltage Standing Wave Ratio	VSWR	ESCC No. 3403 f = 0 to 18GHz	-	Note 1	-
Resistance	R	DC test	47.5	52.5	Ω

NOTES:

1. The limits for VSWR are as specified in Component Type Variants and Range of Components.

2.5.2 High and Low Temperatures Electrical Measurements

The measurements shall be performed at T_{amb}=+125 (+0 -3) °C and T_{amb}=-55 (+3 -0) °C.

Characteristics	Symbols	Test Method and Conditions (Note 1)	Limits		Units
			Min	Max	
Temperature Coefficient of Resistance	TC_R	DC test. Reference Temperature: 25°C	-	3×10^{-4}	Ω/Ω/°C

NOTES:

1. Measurements shall be performed during Screening Tests on a sample of 2 components. In the event of any failure a 100% inspection shall be performed.

2.6 PARAMETER DRIFT VALUES

Unless otherwise specified, the measurements shall be performed at T_{amb}=+22 ±3°C.

The test methods and test conditions shall be as per the corresponding test defined in Room Temperature Electrical Measurements.

The drift values (Δ) shall not be exceeded for each characteristic where specified. The corresponding absolute limit values for each characteristic shall not be exceeded.

Characteristics	Symbols	Drift Value Δ	Units
Voltage Standing Wave Ratio	$\frac{\Delta VSWR}{VSWR}$	± 2	%
Resistance	Δ R	± 250	mΩ

2.7 INTERMEDIATE AND END-POINT ELECTRICAL MEASUREMENTS

Unless otherwise specified, the measurements shall be performed at T_{amb}=+22 ±3°C.

The test methods and test conditions shall be as per the corresponding test defined in Room Temperature Electrical Measurements.

The drift values (Δ) shall not be exceeded for each characteristic where specified. The corresponding absolute limit values for each characteristic shall not be exceeded.

Test Reference per ESCC No. 3403	Characteristics	Symbols	Limits		Units
			Min	Max	
Final Measurements	Resistance	R	47.5	52.5	Ω
	Resistance Drift (from initial measurement)	ΔR	-	±250	mΩ
	Voltage Standing Wave Ratio	VSWR	Note 1	Note 1	-
	VSWR Drift (from Initial measurement)	$\frac{\Delta VSWR}{VSWR}$	-	±2	%
Operating Life Initial Measurements	Resistance (Note 2)	R	47.5	52.5	Ω
	Voltage Standing Wave Ratio (Note 2)	VSWR	Note 1	Note 1	-
Final Measurements	Resistance	R	47.5	52.5	Ω
	Resistance Drift (from initial measurement)	ΔR	-	±250	mΩ
	Voltage Standing Wave Ratio	VSWR	Note 1	Note 1	-
	VSWR Drift (from Initial measurement)	$\frac{\Delta VSWR}{VSWR}$	-	±2	%
RF Leakage	RF leakage f = 0 to 18GHz	E	-[80 - f(GHz)]	-	dBi
Peak Power					
Final Measurements	Resistance	R	47.5	52.5	Ω
	Voltage Standing Wave Ratio	VSWR	Note 1	Note 1	-

NOTES:

1. The limits for VSWR are as specified in Component Type Variants and Range of Components.
2. This test need not be repeated. The most recent result from the previous test may be used instead.

2.8 BURN-IN CONDITIONS

Characteristics	Symbols	Test Conditions	Units
Ambient Temperature	T_{amb}	+125	°C
Power	P_{in}	0	W