RF COAXIAL CONNECTORS,

BLIND-MATE SLIDE-ON,

BASED ON TYPE SBMA

(FEMALE CONTACT)

ESCC Detail Specification No. 3402/012

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Pages 1 to 27

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space components
coordination group

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DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		This Issue supersedes Issue 1 and incorporates all modifications defined in Revisions 'A', 'B' and 'C' to Issue 1 and the changes agreed by the following DCRs:-		
		Cover page		None
		DCN		None
		Table 1(b)	: No. 5, Remarks deleted	23889
		Figure 1(c)	: Deleted in toto	23889
		Para. 4.2.2	: (b), Paragraph reference amended to "9.5.3"	23889
		Para. 4.2.4	: (b), Paragraph reference amended to "9.5.3"	23889
		Para. 4.4.1	: Items (a), (b), (c), (d), (e) and (f) amended	21098/ 221467
		Para. 4.4.2	: Items (b), (c), (d), (e), (h) and (i) amended	21098/ 221467
		Table 6	: Table restructured and "Plating Thickness" added	23889

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TABLES

FIGURES

APPENDICES (Applicable to specific Manufacturers only)
None.

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for RF Coaxial Connectors, Blind-Mate, Slide-On, based on Type SBMA (Female Contact). It shall be read in conjunction with ESA/SCC Generic Specification No. 3402, the requirements of which are supplemented herein.

1.2 COMPONENT TYPE VARIANTS

A list of the type variants of the connectors specified herein, which are also covered by this specification, is given in Table 1(a).

For each type variant, the full electrical and physical characteristics are given in individual Figures 2(b) at the end of this specification.

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the connectors specified herein, are as scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The derating information applicable to the connectors specified herein is shown in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the connectors specified herein are shown in Figures 2(a) and 2(b).

1.6 STANDARD TEST CONNECTOR INTERFACE

Whenever gauges are required for mating with the connectors under test, their physical dimensions shall be in accordance with those specified in Figure 3.

2. APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:-

(a) ESA/SCC Generic Specification No. 3402 for RF Coaxial Connectors.

(b) MIL-G-45204, Gold Plating, Electrodeposited.

3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESA/SCC Basic Specification No. 21300 shall apply.

TABLE 1(a) - TYPE VARIANTS

VARIANT	DESCRIPTION
01	Two Hole Flange Mount Jack, for S-R Cable ∅2.20mm
02	Square Flange Mount Jack With EMI Gasket & Glass Seal ∅ Contact 0.30mm
03	Two Hole Flange Mount Jack With EMI Gasket & Glass Seal ∅ Contact 0.30mm
04	Screw Type Panel Hermetic Jack
05	Two Hole Flange Mount Jack, Solder-type for S-R and Conformable Cable ∅2.20mm

TABLE 1(b) - MAXIMUM RATINGS

No.	CHARACTERISTICS	SYMBOL	MAXIMUM RATINGS	UNIT	REMARKS
1	Peak Power at +25°C	Pmax	1.0	kW	1.0µs
2	Rated Power (Continuous)	P	0.8	kW	See Figures 1(a) and 1(b)
3	Nominal Impedance	Z	50	Ω	-
4	Frequency Range	f	See Figure 2(b)	GHz	-
5	Voltage Rating (Continuous)	U_R	250	Vrms	-
6	Operating Temperature Range	T_{op}	-65 to +105	°C	T_{amb}
7	Storage Temperature Range	T_{stg}	As per Operating Temperature Range	°C	-

FIGURE 1 - PARAMETER DERATING INFORMATION

FIGURE 1(a) - POWER VERSUS TEMPERATURE

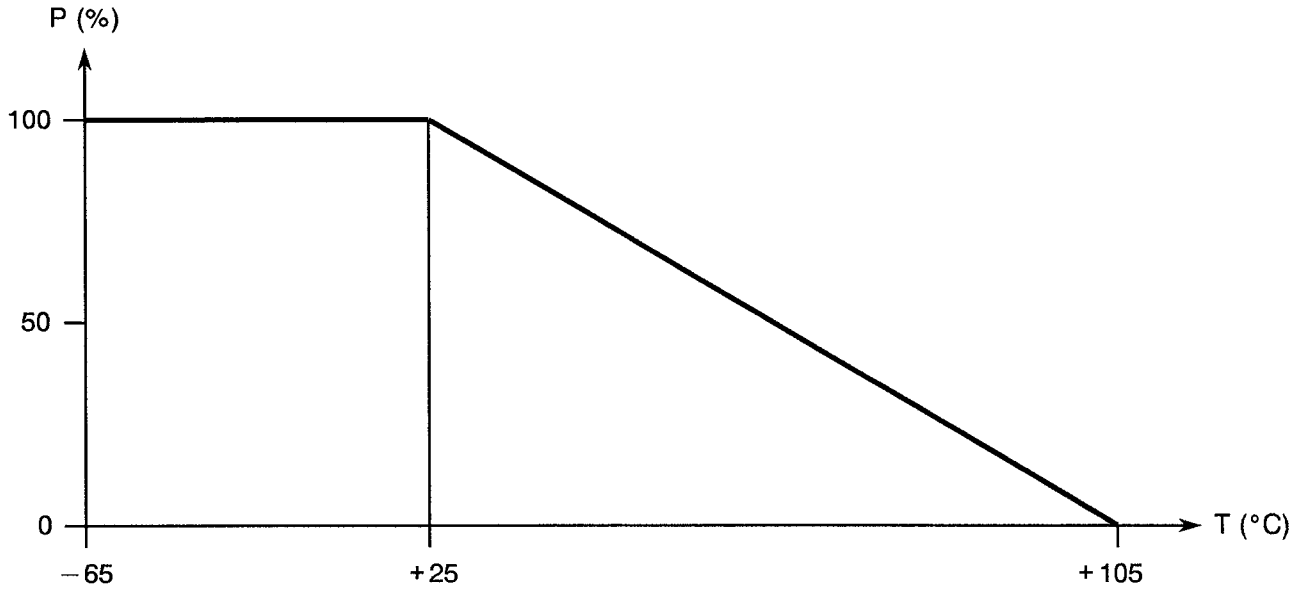
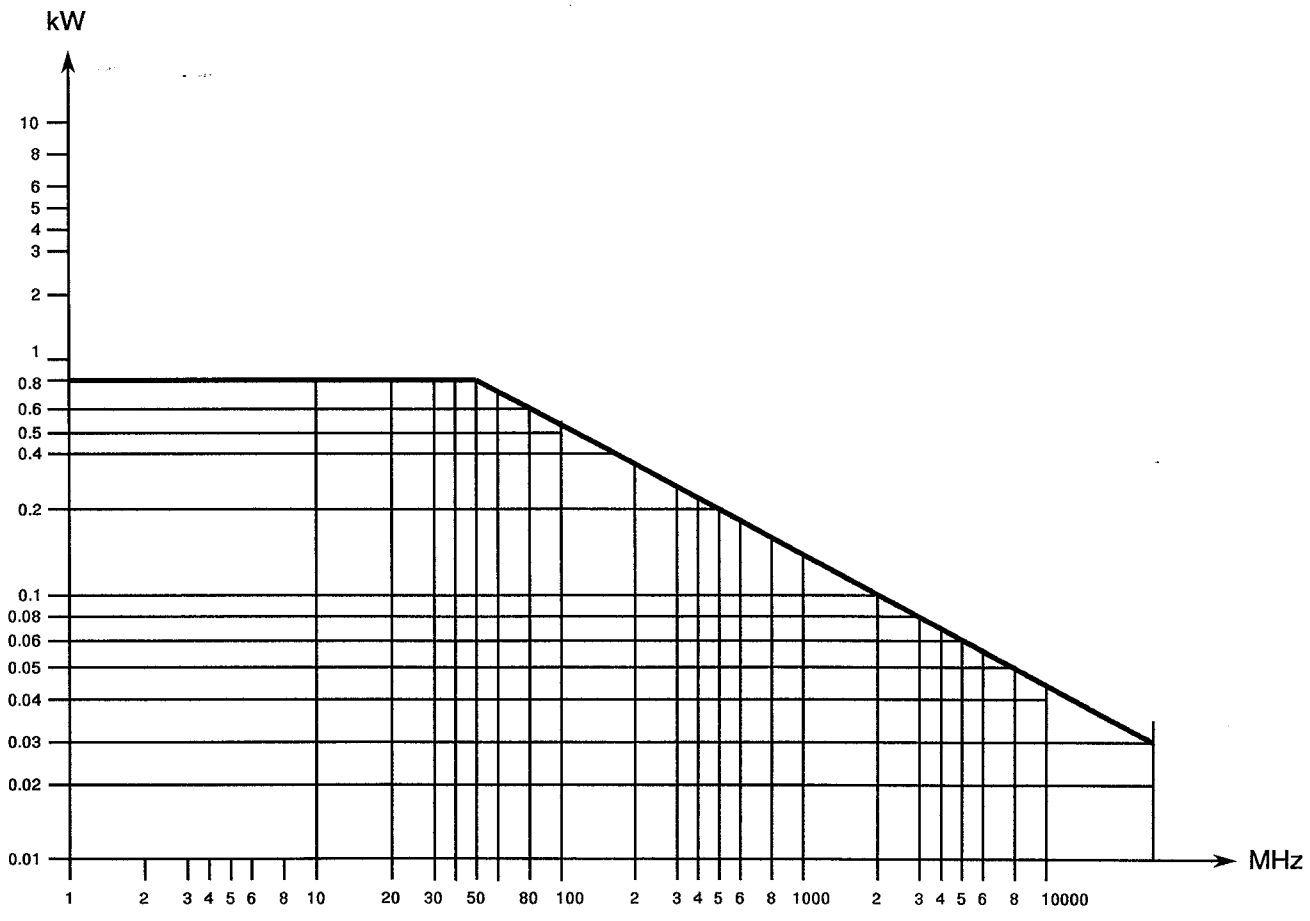


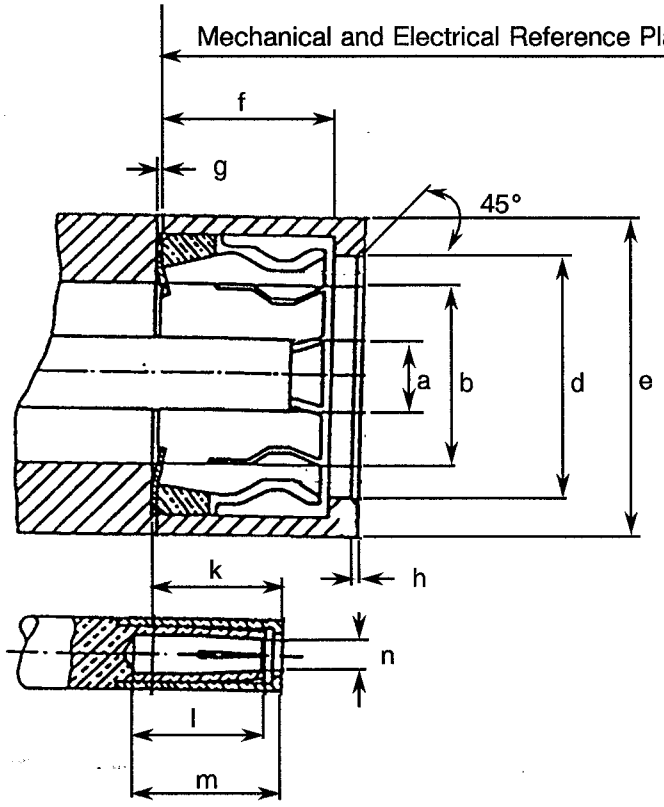
FIGURE 1(b) - POWER VERSUS FREQUENCY



POWER (VSWR in line 1) at T_{amb} = +40°C.

FIGURE 2 - PHYSICAL DIMENSIONS

FIGURE 2(a) - FEMALE CONNECTOR INTERFACE



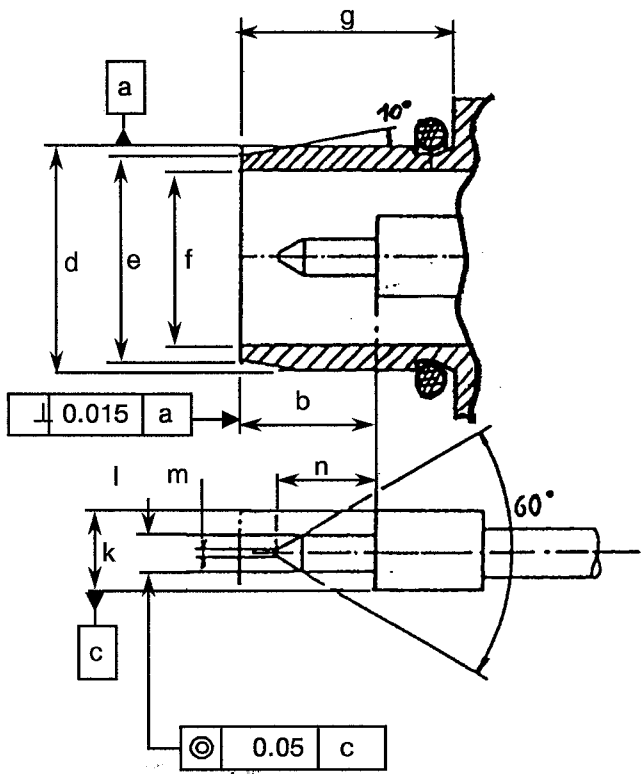
SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX.	
a	1.11	1.31	
b	2.73	2.83	
d	3.90	3.96	
e	5.40	-	
f	-	5.03	2
g	0.04	0.06	
h	0.38	0.44	
k	3.12	3.22	2
l	2.80	-	
m	3.00	-	
n	-	-	1

NOTES

1. Dimension to meet VSWR mating characteristics and connector durability when mated with 0.50 to 0.53 diameter pin.
2. With spring finger bottomed.

FIGURE 3 - STANDARD TEST CONNECTOR INTERFACE

MALE CONTACT



SYMBOL	MILLIMETRES	
	MIN.	MAX.
b	3.25	3.35
d	3.51	3.56
e	3.18	3.32
f	2.765	2.795
g	5.03	
k	1.20	1.22
l	0.50	0.53
m	0.10	0.20
n		2.54

4. REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the connectors specified herein are stated in this specification and ESA/SCC Generic Specification No. 3402. Deviations from the Generic Specification applicable to this specification only, are listed in Para. 4.2.

Deviations from the applicable Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESA/SCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

4.2 DEVIATIONS FROM GENERIC SPECIFICATION

4.2.1 Deviations from Special In-process Controls

None.

4.2.2 Deviations from Final Production Tests (Chart II)

(a) Para. 9.4, Coupling Proof Torque: Not applicable.

(b) Para. 9.5.3, Mating and Unmating Forces: A sample to Level S.4 AQL 1.0 shall be submitted to the test with a radial misalignment as specified in Para. 4.3.11 of this specification. The mating and unmating forces shall not exceed those specified in Para. 4.3.5 of this specification.

4.2.3 Deviations from Burn-in Tests (Chart III)

Not applicable.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Para. 9.4, Coupling Proof Torque: Not applicable.

(b) Para. 9.5.3, Mating and Unmating Forces: Connectors shall be submitted to the test with a radial misalignment as specified in Para. 4.3.11 of this specification. The mating and unmating forces shall not exceed those specified in Para. 4.3.5 of this specification.

(c) Para. 9.16, Voltage Standing Wave Ratio (VSWR): the measurement shall also be performed under the conditions specified in Paras. 4.3.10 and 4.3.11 of this specification.

(d) Para. 9.19, RF Insertion Loss: the measurement shall also be performed under the conditions specified in Paras. 4.3.10 and 4.3.11 of this specification.

(e) Para. 9.21, Residual Magnetism: Not applicable.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.4, Coupling Proof Torque: Not applicable.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the connectors specified herein shall be verified in accordance with the requirements set out in Para. 9.25 of ESA/SCC Generic Specification No. 3402 and shall conform to those shown in Figures 2(a) and 2(b) of this specification.

4.3.2 Weight

The maximum weight of the connectors specified herein shall be as specified in Figure 2(b).

4.3.3 Coupling Proof Torque

Not applicable.

4.3.4 Cable Retention Force

The requirements for testing of the cable retention force are specified in Section 9 of ESA/SCC Generic Specification No. 3402. Figure 2(b) specifies the values for axial loads. Torque shall be applied as follows.

4.3.4.1 Flexible Cables

Not applicable.

4.3.4.2 Semi-rigid Cables

The torque value shall be as follows:

- RG 405/U : 11.28N.cm.
- RG 402/U : 38.85N.cm.

4.3.5 Mating and Unmating Forces

The applicable measurement requirements are specified in Section 9 of ESA/SCC Generic Specification No. 3402 and in para's 4.2.2 and 4.2.4 of this specification. The maximum force during mating and unmating shall be as specified in the individual Figures 2(b).

4.3.6 Endurance

The applicable test requirements are specified in Section 9 of ESA/SCC Generic Specification No. 3402. The test conditions shall be as follows:-

(a) Number of cycles : 500 for qualification; 100 for lot acceptance.

(b) Rate : 12 cycles maximum/minute.

4.3.7 Residual Magnetism

Not applicable.

4.3.8 Contact Engagement and Separation Forces (Figure 4)

The requirements for these measurements are specified in Section 9 of ESA/SCC Generic Specification No. 3402 and apply to female contacts only.

4.3.8.1 Inner Contact

(a) Oversize Pin

Steel test pin diamater : 0.533-0.536 mm.
Insertion depth : 0.76/1.14 mm.
Number of insertions : 3.

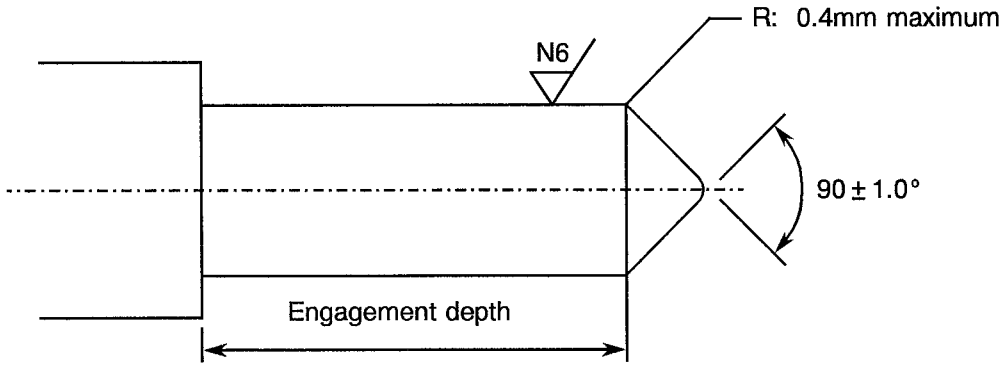
(b) Engagement Force Test (Maximum Diameter Test Pin)

Steel test pin diamater : 0.528-0.531 mm.
Engagement depth : 1.27/1.91 mm.
Engagement force : 14N maximum.

(c) Separation Force Test (Minimum Diameter Test Pin)

Steel test pin diamater : 0.493-0.495 mm.
Separation depth : 1.27/1.91 mm.
Separation force : 0.14N minimum.

FIGURE 4(a) - TEST PIN CONFIGURATION



4.3.8.2 Outer Contact

(a) Oversize Pin

Steel test pin diamater : 3.568-3.575 mm.
Insertion depth : 3.5-4.0 mm.
Number of insertions : 1.

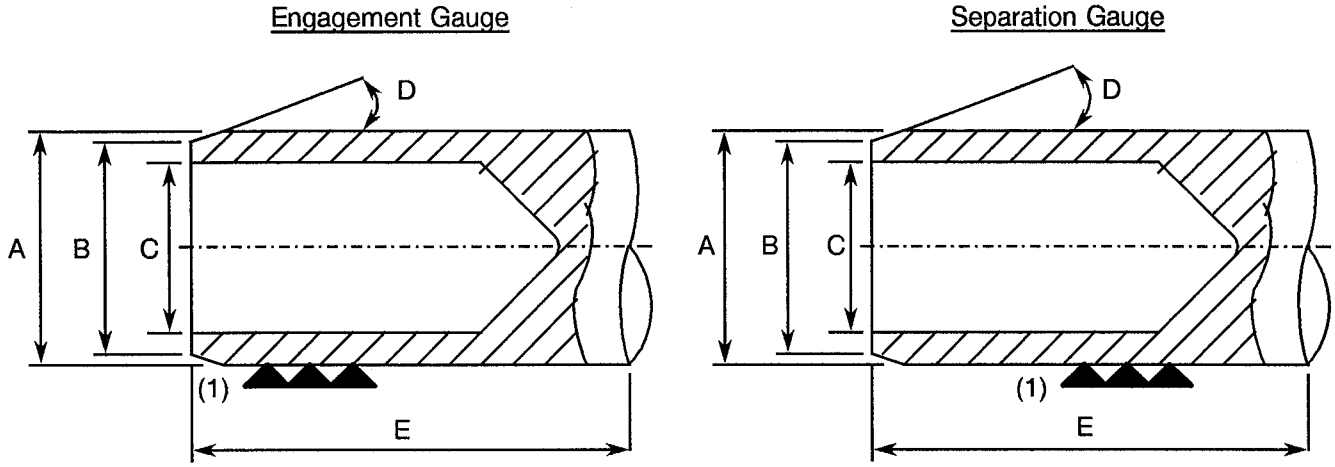
(b) Engagement Force Test (Maximum Diameter Test Pin)

Steel test pin diamater : 3.510-3.560 mm.
Engagement depth : 3.5 mm min.
Engagement force : 14N maximum.

(c) Separation Force Test (Minimum Diameter Test Pin)

Steel test pin diamater : 3.505-3.510 mm.
Separation depth : 3.5 mm min.
Separation force : 0.8N min.

FIGURE 4(b) - TEST PIN CONFIGURATION



NOTES

1. Polished steel surface roughnessa 0.4μm.

	A mm		B mm		C mm		D°		E mm	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Engagement Gauge	3.51	3.56	3.18	3.32	2.76	2.80	10°30'	11°30'	3.30	-
Separation Gauge	3.505	3.51	3.175	3.19	2.76	2.80	8°30'	9°30'	3.30	-

4.3.9 Contact Retention

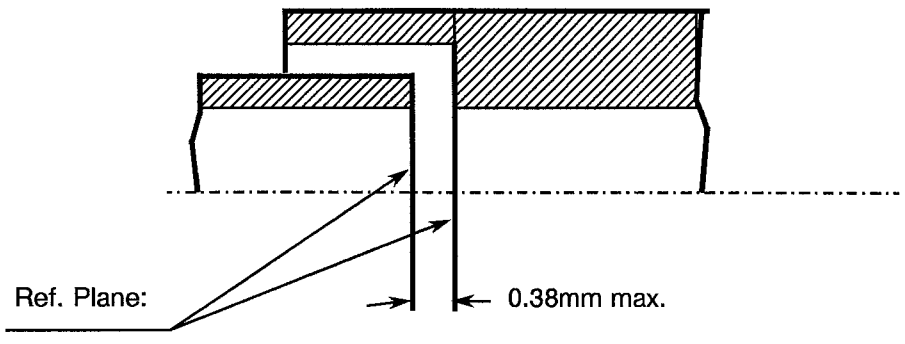
The requirements for this test are specified in Section 9 of ESA/SCC Generic Specification No. 3402. The test conditions are given in Figure 2(b). After testing, the connector interface dimensions shall be within the limits of Figure 2(a).

4.3.10 Axial Separation Between Mating Reference Planes (Figure 5)

- Rigidly mount receptacle and jack

To maintain the electrical and environmental performances, the connector reference planes should be within 0.38mm max.

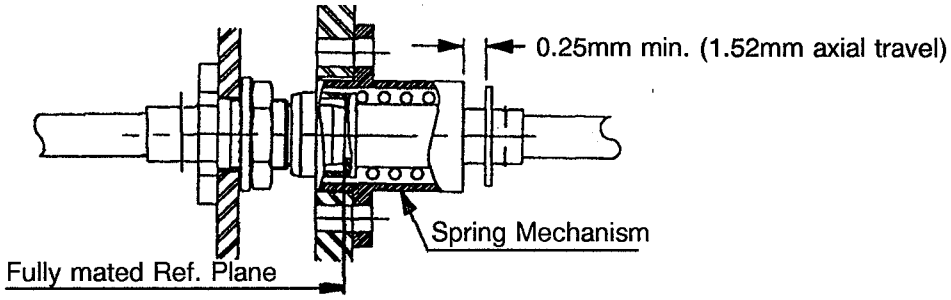
FIGURE 5(a)



- Rigidly mount receptacle and float mounted jack

  The float mounting allows a total of 1.52mm axial travel. The mounting arrangements should however ensure a minimum length of travel of 0.25mm (0.76mm preferred) to ensure full length of engagement is maintained, under operational conditions.

FIGURE 5(b)



4.3.11 Radial Misalignment (Figure 6)

The location of the Mountings of each pair of mating connectors must be defined relative to a common datum, such as the centre line of a dowel/dowel hole or "reference connector pair". The location must be controlled to ensure that at the point of initial engagement, the radial misalignment of the centre lines of the mating connectors from their true position does not exceed the following limits:

FIGURE 6(a)

Rigidly mounted: receptacle and jack

Radial misalignment 0.076mm max

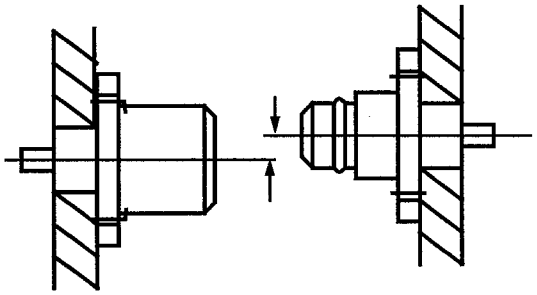
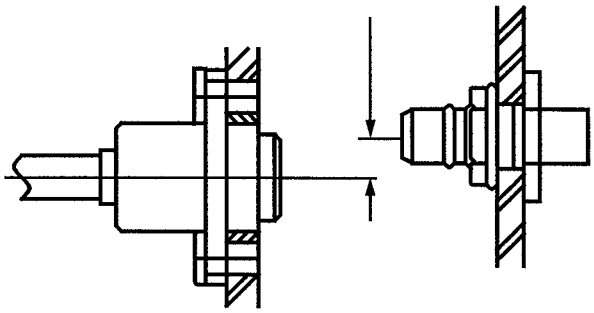


FIGURE 6(b)

Rigidly mounted: receptacle and float mounted jack

Radial misalignment 0.51mm max



4.4 MATERIALS AND FINISHES

The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the connectors specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.

4.4.1 Stainless Steel Versions

(a) Shell

- For solderable connectors (Variants 01)

Material	:	Amagnetic stainless steel, electro-passivated.
Underplate	:	Nickel, 2.0µm minimum.
Plating	:	Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

- For non-solderable connectors (Variants 02, 03, 04)

Material	:	Electro-passivated amagnetic stainless steel.

(b) Centre Contact

Material	:	Beryllium copper.
Underplate	:	Nickel, 2.0µm minimum.
Plating	:	Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(c) Inserts

Material	:	PTFE.

(d) Outer Contact

Material	:	Bronze.
Underplate	:	Nickel, 2.0µm minimum.
Plating	:	Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(e) Internal Washer

Material	:	Beryllium copper.
Underplate	:	Nickel, 2.0µm minimum.
Plating	:	Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(f) RF Shield

Material	:	Brass.
Underplate	:	Nickel, 2.0µm minimum.
Plating	:	Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(g) Internal Ring

Material	:	Amagnetic stainless steel, electro-passivated.

(h) Accessories

- Flange

Material	:	Brass.
Plating	:	Nickel, 2.0µm minimum.

- Spring

  Material : Amagnetic stainless steel.

- Retaining Ring

  Material : Beryllium copper.
  Underplate : Nickel, 2.0µm minimum.

(i) Conductive Gasket (Used for non-soldered type versions)

Material : Silicone rubber with silver-copper particles.

4.4.2 Hermetic Versions

(a) Shell

Material : Electro-passivated amagnetic stainless steel.

(b) Centre Contact

Material : Beryllium copper.
Underplate : Nickel, 2.0µm minimum.
Plating : Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(c) Inserts

Material : PTFE.

(d) Outer Contact

Material : Bronze.
Underplate : Nickel, 2.0µm minimum.
Plating : Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(e) Internal Washer

Material : Beryllium copper.
Underplate : Nickel, 2.0µm minimum.
Plating : Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(f) RF Shield

Material : Brass.
Underplate : Nickel, 2.0µm minimum.
Plating : Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(g) Internal Ring

Material : Amagnetic stainless steel, electro-passivated.

(h) Shell of Glass Bead

Material : FN 42 (Ferro-nickel).
Underplate : Nickel, 2.0µm minimum.
Plating : Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(i) Centre Contact of Glass Bead

Material : FN 42 (Ferro-nickel).
Underplate : Nickel, 2.0µm minimum.
Plating : Gold, 1.27µm minimum, Type 2 Grade C of MIL-G-45204.

(j) Insert of Glass Bead

Material : Glass.

(k) Compression Gasket (Used for non-soldered type versions)

Material : Silicone rubber with silver-copper particles.

4.5 MARKING

4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESA/SCC Basic Specification No. 21700 and the following paragraphs. Each component shall be marked in respect of:-

(a) The SCC Component Number.

(b) Characteristics.

(c) Traceability Information.

4.5.2 The SCC Component Number

Each component shall bear the SCC Component Number which shall be constituted and marked as follows:

340201201B

Detail Specification Number

Type Variant (see Table 1(a))

Testing Level (B or C, as applicable)

4.5.3 Characteristics

Characteristics cover the type of plating/material and 2 different dimensional aspects:-

(a) Variants of fixed configuration.

(b) Variants where the rear end (length of contact A and length of insert B) may vary within a range limited by a specified maximum value.

4.5.3.1 Variants of Fixed Configuration

Each component shall be marked in respect of:-

(a) Type of plating/material.

(b) Number.

The information shall be constituted and marked as follows:

201

Type of plating/material (see Para. 4.5.3.3)

Number (shall always be 01)

4.5.3.2 Variants where Dimensions A and B of Figure 2(b) are Indicated by a Maximum Only

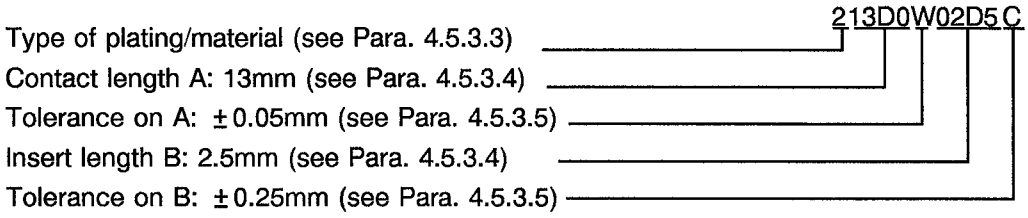
Each component shall be marked in respect of:-

(a) Type of plating/material.

(b) Length and tolerance of centre contact (dimension A).

(c) Length and tolerance of insert (dimension B).

The information shall be constituted and marked as follows:



NOTES

1. Dimension A shall always be greater than B. Both values shall always be positive.
2. When dimension B (insert) is flush with the flange (B = 0), the insert length shall be marked 00D0 with the appropriate tolerance.
3. When applicable, Figure 2(b) makes reference to Para. 4.5.3.

4.5.3.3 Type of Plating/Material

The type of plating/material shall be identified by means of the following codes.

CODE	TYPE OF PLATING/MATERIAL	PARA.
2	Gold plate, nickel underplate	4.4.1
3	Amagnetic stainless steel	4.4.2

For hermetic types (see Para. 4.4.2), only plating code 2 is available.

4.5.3.4 Length Values

Length values shall be expressed by means of the following codes.

The unit quantity for marking shall be millimetres.

LENGTH VALUE	CODE
XX.X	XXDX

4.5.3.5 Tolerance

The tolerances on length values shall be indicated by the letter codes specified hereafter.

TOLERANCE (mm)	CODE LETTER
±0.05	W
±0.10	B
±0.25	C

4.5.4 Traceability Information

Each component shall be marked in respect of traceability information in accordance with the requirements of ESA/SCC Basic Specification No. 21700.

4.5.5 Marking of Small Components

When it is considered that the component is too small to accommodate the marking as specified above, as much as space permits shall be marked. The order of precedence shall be as specified in Para. 4.5.1. The marking information in full shall accompany each component in its primary package.

4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature

The parameters to be measured in respect of electrical characteristics are scheduled in Table 2. Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.6.2 Electrical Measurements at High and Low Temperatures (Table 3)

Not applicable.

4.6.3 Circuits for Electrical Measurements

Not applicable.

4.7 BURN-IN TESTS (TABLES 4 AND 5)

Not applicable.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

No.	CHARACTERISTICS	SYMBOL	SPEC. AND/OR TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN	MAX	
1	Insulation Resistance	Ri	ESA/SCC 3402, Para. 9.1	500 Vdc	1000	-	MΩ
2	Voltage Proof Leakage Current	I_L	ESA/SCC 3402, Para. 9.2	See Figure 2(b)	-	2.0	mA

TABLES 3, 4 AND 5

Not applicable

4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESA/SCC GENERIC SPECIFICATION NO. 3402)

4.8.1 Measurements and Inspections on Completion of Environmental Tests

The parameters to be measured and inspections to be performed on completion of environmental tests are scheduled in Table 6 of this specification. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests

Not applicable.

4.8.3 Measurements and Inspections on Completion of Endurance Tests

The parameters to be measured and inspections to be performed on completion of endurance tests are scheduled in Table 6 of this specification. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.8.4 Conditions for Operating Life Tests (Part of Endurance Testing)

Not applicable.

4.8.5 Electrical Circuits for Operating Life Tests

Not applicable.

4.8.6 Conditions for High Temperature Storage Test (Part of Endurance Testing)

The requirements for the high temperature storage test are specified in Section 9 of ESA/SCC Generic Specification No. 3402. The conditions for high temperature storage shall be the maximum operating temperature as specified in Figure 2(b).

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL AND ENDURANCE TESTS

NO.	ESA/SCC GENERIC SPEC. NO. 3402		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
01	Coupling Proof Torque	Para. 9.4	Not applicable					
02	Mating and Unmating Forces (Female Connector Only)	Para. 9.5.3 and Para. 4.2.4 of this spec.	**During Test** Force	Para. 4.3.5 of this spec.	F	Figure 2(b)		N
03	Seal Test	Para. 9.7	Hermeticity Leakage	If applicable As applicable	- -	- No Bubbles	1.10^{-8}	cm^3/s
04	External Visual Inspection	Para. 9.8	External Visual Inspection	Para. 9.8 of ESA/SCC 3402	-	-	-	
05	Contact Resistance	Para. 9.9 6V 10mA	**During Test** Contact Resistance	 Centre Contact Shell Hermetic Centre Contact	 - - -	 - - -	 8.0 3.0 22	 mΩ mΩ mΩ
06	Vibration	Para. 9.10	**During Test** Electrical Measurements **Final Measurements** Visual Examination Contact Resistance	**Last cycle in each direction** Intermittent contact ≥ 10ms No open or short circuits Full engagement maintained and no evidence of damage Centre Contact (6V 10mA)	 - - - -	 - - - -	 - - - 8.0	 mΩ
07	Shock or Bump	Para. 9.11	**Final Measurements** Visual Examination Contact Resistance	 Full engagement maintained and no evidence of damage Centre Contact (6V 10mA)	 - -	 - -	 - 8.0	 mΩ
08	Rapid Change of Temperature	Para. 9.12	**Final Measurements** Visual Examination Contact Resistance Voltage Proof Leakage Current	**After a recovery period of 24 ± 2 hrs** - Centre Contact (6V 10mA) Figure 2(b)	 - - I_L	 - - Table 2 Item 2	 - 8.0 	 mΩ
09	Climatic Sequence	Para. 9.13	**During Test** Voltage Proof **Final Measurements** External Visual Inspection Insulation Resistance Voltage Proof Leakage Current	**At Low Air Pressure** 0.1 x value of Figure 2(b) **After final Damp Heat cycle (within 1 to 24 hrs recovery)** Para. 9.8 of ESA/SCC 3402 Table 2 Item 1 Figure 2(b)	 VP - Ri I_L	 No flashover or breakdown - 200 Table 2 Item 2	 - - 	 MΩ
10	Cable Retention Force	Para. 9.14 and Para. 4.3.4 of this spec.	**During Test** Continuity Visual Examination	 - No mechanical failure, loosening or rupture	 - -	 - -	 - -	
11	Cabling and Crimping Capability	Para. 9.15	Visual Examination Dimensions Insulation Resistance Voltage Proof Leakage Current	Para. 9.15 of ESA/SCC 3402 Para. 9.15 of ESA/SCC 3402 Table 2 Item 1 Figure 2(b)	- - Ri I_L	- Fig. 2(a) & 2(b) Table 2 Item 1 Table 2 Item 2	- 	

NOTES

1. The tests in this table refer to either Chart IV or V and shall be used as applicable.

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL AND ENDURANCE TESTS (CONTINUED)

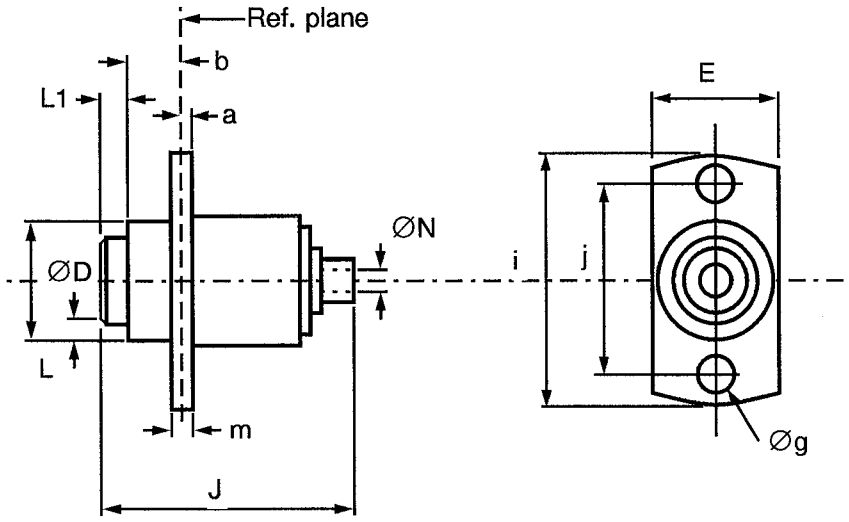
NO.	ESA/SCC GENERIC SPEC. NO. 3402		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
12	VSWR or Reflection Coefficient	Para. 9.16 and Para. 4.2.4 of this spec.	VSWR	Para. 9.16 of ESA/SCC 3402	-	Figure 2(b)		
13	Corona Level	Para. 9.17	Corona	Para. 9.17 of ESA/SCC 3402	-	Figure 2(b)		
14	Endurance	Para. 9.18 and Para. 4.3.6 of this spec.	**Final Measurements**					
			Mating/Unmating Forces	Para. 4.3.5 of this spec.	F	Figure 2(b)		N
			Contact Resistance	Centre Contact (6V 10mA)	-	-	10	mΩ
				Shell (6V 10mA)	-	-	5.0	mΩ
				Hermetic Centre Contact (6V 10mA)	-	-	27	mΩ
			Visual Examination	Para. 9.18 of ESA/SCC 3402	-	-	-	
15	RF Insertion Loss	Para. 9.19 and Para. 4.2.4 of this spec.	Insertion Loss	Para. 9.19 of ESA/SCC 3402	-	Figure 2(b)		
16	Corrosion	Para. 9.20	Visual Examination	Para. 9.20 of ESA/SCC 3402 No exposure of base metal	-	-	-	
17	Residual Magnetism	Para. 9.21	Not applicable					
18	Soldering Proof	Para. 9.22	**Final Measurements**					
			Interface Dimensions	-	-	Figure 2(a)		
			Mating/Unmating Forces	Para. 4.3.5 of this spec.	F	Figure 2(b)		N
			Insulation Resistance	Table 2 Item 1	Ri	Table 2 Item 1		
			Voltage Proof Leakage Current	Figure 2(b)	I_L	Table 2 Item 2		
			Contact Resistance	Centre Contact (6V 10mA)	-	-	8.0	mΩ
				Shell (6V 10mA)	-	-	3.0	mΩ
				Hermetic Centre Contact (6V 10mA)	-	-	22	mΩ
			External Visual Inspection	Para. 9.8 of ESA/SCC 3402	-	-	-	
19	RF Leakage	Para. 9.23	Leakage	-	-	Figure 2(b)		
20	High Temperature Storage	Para. 9.24 and Para. 4.8.6 of this spec.	**Final Measurements**					
			Mating/Unmating Forces	Para. 4.3.5 of this spec.	F	Figure 2(b)		N
			Insulation Resistance	Table 2 Item 1	Ri	Table 2 Item 1		
			Voltage Proof Leakage Current	Figure 2(b)	I_L	Table 2 Item 2		
			Contact Retention	Para. 4.3.9 of this spec.	-	Para. 4.3.9		
			Visual Examination	-	-	-	-	
			Contact Resistance	Centre Contact (6V 10mA)	-	-	18	mΩ
				Shell (6V 10mA)	-	-	7.5	mΩ
				Hermetic Centre Contact (6V 10mA)	-	-	34	mΩ
			External Visual Inspection	Para. 9.8 of ESA/SCC 3402	-	-	-	
21	Permanence of Marking	Para. 9.27	Marking Permanence	Para. 9.27 of ESA/SCC 3402	-	-	-	
22	Plating Thickness (Hermetic Types Only)	Para. 9.29	Plating Thickness	Para. 5.2.4 of ESA/SCC 3402	-	-	-	

NOTES

1. The tests in this table refer to either Chart IV or V and shall be used as applicable.

FIGURE 2(b) - VARIANTS

VARIANT 01 - TWO HOLE FLANGE MOUNT JACK FOR S-R CABLE Ø2.20mm (0.085")



SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX.	
a	-0.10	0.30	
b	3.00	3.40	
ØD	7.05	7.15	
E	7.40	7.80	
Øg	2.30	2.50	2 holes
i	14.00	15.00	
j	10.80	11.20	
J	17.50	18.50	
L	0.51	-	Radial Float
L1	1.50	-	Axial Float
m	1.50	1.80	
ØN	2.25	2.35	

N.B. Available only with plating/material code 2.

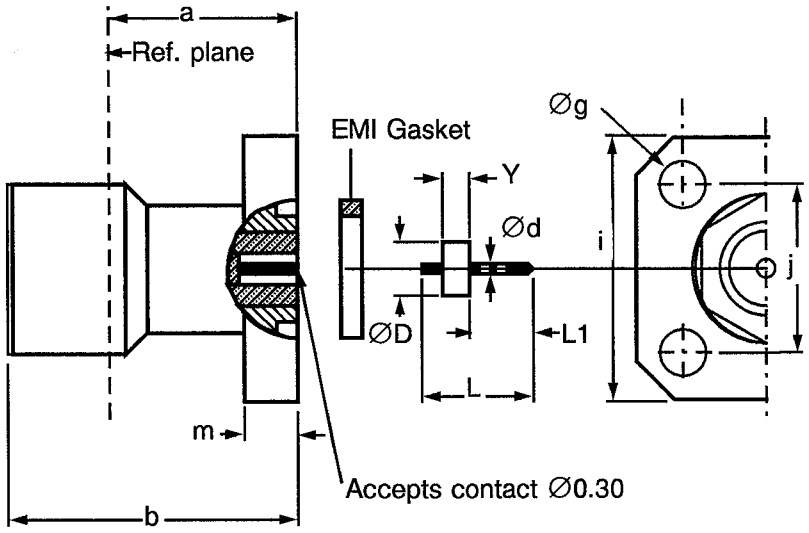
ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	0 to 28	GHz
Maximum voltage standing wave ratio (VSWR)	1.07 + 0.01 f (GHz)	
Maximum reflection coefficient (for information only)	0.034 + 0.0043 f (GHz)	
Maximum insertion loss	0.3	dB
RF leakage (at 1.0 GHz)	−85 (fully mated)	dB
Voltage proof	675	Vrms
Corona level	190	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Maximum mating force	14	N
Minimum unmating force	0.76	N
Mini centre contact retention force (axial)	18.10	N
Mini centre contact retention torque	Not applicable	N.cm
Mini cable retention force	136	N
Mini cable retention torque value	11.2	N
Maximum weight	3.40	g

OTHER CHARACTERISTICS	VALUES	UNITS
Rapid change of temperature - peak value	+115	°C
Operating temperature range	−65 to +105	°C
Maxi leakage (panel sealed connectors)	Not applicable	
Maxi leakage (hermetic sealed connector)	Not applicable	
Solderability	Applicable (body only)	
Soldering proof	Applicable	
Cables used	RG405 / KS1	

FIGURE 2(b) - VARIANTS (CONTINUED)

VARIANT 02 - SQUARE FLANGE MOUNT JACK WITH EMI GASKET AND GLASS SEAL ∅CONTACT 0.30mm



SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX.	
a	5.60	5.80	
b	10.20	11.20	
Ød	0.25	0.35	
ØD	1.87	1.97	
Øg	2.30	2.50	
i	9.30	9.70	Square
j	6.20	6.50	Square
L	7.80	8.20	
L1	4.50	4.70	
m	1.50	1.80	
Y	1.70	1.80	

N.B. Available only with plating/material code 3.

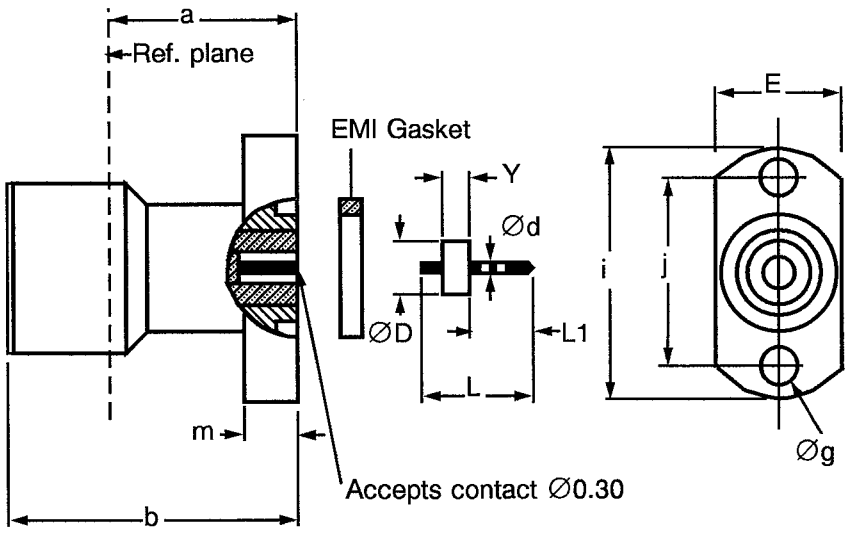
ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	0 to 28	GHz
Maximum voltage standing wave ratio (VSWR)	1.06 + 0.01 f (GHz)	
Maximum reflection coefficient (for information only)	0.029 + 0.0043 f (GHz)	
Maximum insertion loss	0.3	dB
RF leakage (at 1 GHz)	−85 (fully mated)	dB
Voltage proof	675	Vrms
Corona level	Not applicable	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Maximum mating force	14	N
Minimum unmating force	0.76	N
Mini centre contact retention force (axial)	18.10	N
Mini centre contact retention torque	Not applicable	N.cm
Mini cable retention force	Not applicable	N
Mini cable retention torque value	Not applicable	
Maximum weight	1.80	g

OTHER CHARACTERISTICS	VALUES	UNITS
Rapid change of temperature - peak value	+ 115	°C
Operating temperature range	−65 to + 105	°C
Maxi leakage (panel sealed connectors)	Not applicable	
Maxi leakage (hermetic sealed connector)	10^{-8} (seal only)	$atm.cm^3/s$
Solderability	Applicable (contact only)	
Soldering proof	Applicable	
Cables used	Not applicable	

FIGURE 2(b) - VARIANTS (CONTINUED)

VARIANT 03 - TWO HOLE FLANGE MOUNT JACK WITH EMI GASKET AND GLASS SEAL ∅CONTACT 0.30mm



SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX.	
a	5.60	5.80	
b	10.20	11.20	
∅d	0.25	0.35	
∅D	1.87	1.97	
E	8.90	9.10	
∅g	2.30	2.50	2 holes
i	11.80	12.20	
j	5.50	5.70	
L	7.80	8.20	
L1	4.50	4.70	
m	1.50	1.80	
Y	1.70	1.80	

N.B. Available only with plating/material code 3.

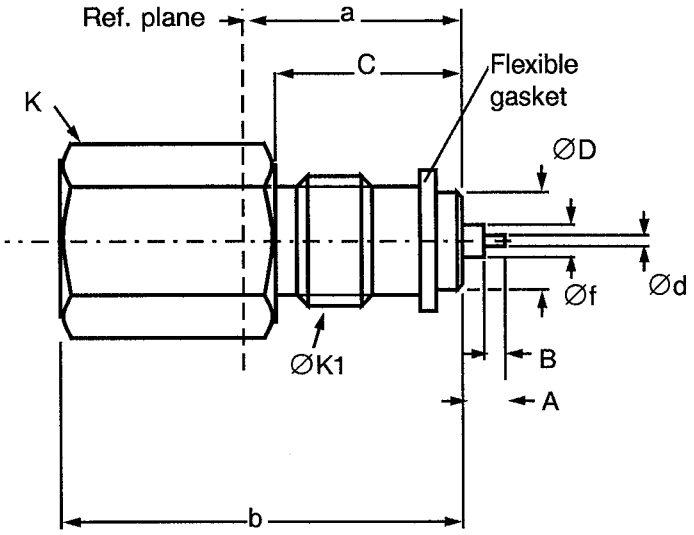
ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	0 to 28	GHz
Maximum voltage standing wave ratio (VSWR)	1.06 + 0.01 f (GHz)	
Maximum reflection coefficient (for information only)	0.029 + 0.0043 f (GHz)	
Maximum insertion loss	0.3	dB
RF leakage (at 1.0 GHz)	−85 (fully mated)	dB
Voltage proof	675	Vrms
Corona level	Not applicable	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Maximum mating force	14	N
Minimum unmating force	0.76	N
Mini centre contact retention force (axial)	18.10	N
Mini centre contact retention torque	Not applicable	N.cm
Mini cable retention force	Not applicable	N
Mini cable retention torque value	Not applicable	
Maximum weight	1.60	g

OTHER CHARACTERISTICS	VALUES	UNITS
Rapid change of temperature - peak value	+115	°C
Operating temperature range	−65 to +105	°C
Maxi leakage (panel sealed connectors)	Not applicable	
Maxi leakage (hermetic sealed connector)	10^{-8} (seal only)	$atm.cm^3/s$
Solderability	Applicable (contact only)	
Soldering proof	Applicable	
Cables used	Not applicable	

FIGURE 2(b) - VARIANTS (CONTINUED)

VARIANT 04 - SCREW TYPE PANEL HERMETIC JACK



SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX.	
a	6.40	7.00	
A	1.75	2.25	
b	11.20	12.20	
B	0.75	1.25	
C	5.40	6.00	
Ød	0.25	0.35	
ØD	2.90	3.10	
Øf	0.95	1.10	
K	-	6.35	6 flats
ØK1	10-36 UNS-2A		

N.B. Available only with plating/material code 3.

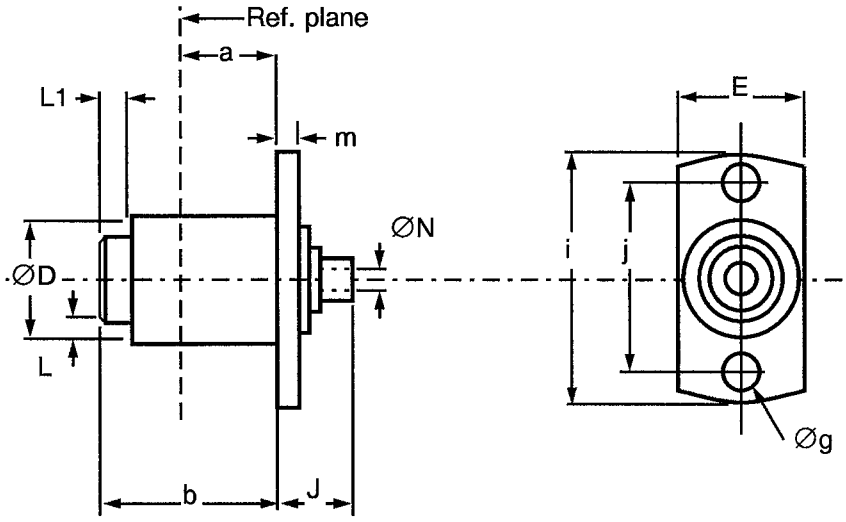
ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	0 to 28	GHz
Maximum voltage standing wave ratio (VSWR)	1.10 + 0.01 f (GHz)	
Maximum reflection coefficient (for information only)	0.047 + 0.0042 f (GHz)	
Maximum insertion loss	0.4	dB
RF leakage (at 1.0 GHz)	−85 (fully mated)	dB
Voltage proof	675	Vrms
Corona level	Not applicable	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Maximum mating force	14	N
Minimum unmating force	0.76	N
Mini centre contact retention force (axial)	18.10	N
Mini centre contact retention torque	Not applicable	N.cm
Mini cable retention force	Not applicable	N
Mini cable retention torque value	Not applicable	
Maximum weight	1.70	g

OTHER CHARACTERISTICS	VALUES	UNITS
Rapid change of temperature - peak value	+115	°C
Operating temperature range	−65 to +105	°C
Maxi leakage (panel sealed connectors)	Not applicable	
Maxi leakage (hermetic sealed connector)	10^{-8} (seal only)	$atm.cm^3/s$
Solderability	Applicable (contact only)	
Soldering proof	Applicable	
Cables used	Not applicable	

FIGURE 2(b) - VARIANTS (CONTINUED)

VARIANT 05 - TWO HOLE FLANGE MOUNT JACK, SOLDER-TYPE FOR S-R AND CONFORMABLE CABLE



SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX.	
a	7.50	8.00	
b	10.80	11.30	
ØD	7.00	7.20	
E	7.40	7.80	
Øg	M1.6 x 0.35		2 holes
i	14.00	15.00	
j	10.80	11.20	
J	3.50	4.20	
L	0.51	-	Radial Float
L1	1.50	-	Axial Float
m	1.50	1.80	
ØN	2.25	2.35	

N.B. Available only with plating/material code 2.

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	0 to 28	GHz
Maximum voltage standing wave ratio (VSWR)	1.07 + 0.01 f (GHz)	
Maximum reflection coefficient (for information only)	0.034 + 0.0043 f (GHz)	
Maximum insertion loss	0.04 $\sqrt{f}$ (GHz)	dB
RF leakage (at 1.0 GHz)	−75 +30 log f(GHz)	dB
Voltage proof	675	Vrms
Corona level	190	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Maximum mating force	14	N
Minimum unmating force	0.76	N
Mini centre contact retention force (axial)	18.10	N
Mini centre contact retention torque	Not applicable	N.cm
Mini cable retention force	136 (1) 80 (2)	N
Mini cable retention torque value	11.2	N
Maximum weight	3.40	g

OTHER CHARACTERISTICS	VALUES	UNITS
Rapid change of temperature - peak value	+115	°C
Operating temperature range	−65 to +105	°C
Maxi leakage (panel sealed connectors)	Not applicable	
Maxi leakage (hermetic sealed connector)	Not applicable	
Solderability	Applicable (body only)	
Soldering proof	Applicable	
Cables used	RG405 / KS1 (1) BeldenYQ40246 (2)	

NOTES 1. Semi-rigid cable.
2. Conformable cable.