



**RF COAXIAL BLIND-MATE SLIDE-ON CONNECTORS
WITH MALE CONTACT**

BASED ON TYPE SMP

ESCC Detail Specification No. 3402/024

Issue 2	November 2023
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DCR No.	CHANGE DESCRIPTION
1444	Specification updated to incorporate changes per DCR.

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1 GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, and test and inspection data for the component type variants and/or the range of components specified below. It supplements the requirements of, and shall be read in conjunction with, the ESCC Generic Specification listed under Applicable Documents.

1.2 APPLICABLE DOCUMENTS

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

- (a) ESCC Generic Specification No. [3402](#).
- (b) [MIL-STD-348](#), Department of Defence Interface Standard: Radio Frequency Connector Interfaces.

1.3 TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESCC Basic Specification No. [21300](#) shall apply.

1.4 THE ESCC COMPONENT NUMBER AND COMPONENT TYPE VARIANTS

1.4.1 The ESCC Component Number

The ESCC Component Number shall be constituted as follows:

Example: 340202401

- Detail Specification Reference: 3402024
- Component Type Variant Number: 01 (as required)

1.4.2 Component Type Variants

The component type variants applicable to this specification are as follows:

Variant Number	Description (Note 1)
01	SMP Straight Male Receptacle, PCB, Limited Detent
02	SMP Straight Male Receptacle, PCB, Limited Detent
03	SMP Straight Male Receptacle, Thru-hole, Limited Detent
04	SMP Straight Male Receptacle, PCB, Limited Detent
05	SMP Straight Male Receptacle, PCB, Limited Detent
07	SMP Straight Male Receptacle, PCB, Limited Detent
08	SMP Straight Male Receptacle, PCB, Limited Detent
09	SMP Straight Male Receptacle, PCB, Limited Detent
10	SMP Straight Male Receptacle, PCB, Smooth Bore
11	SMP Straight Male Receptacle, PCB, Smooth Bore
12	SMP Straight Male Receptacle, PCB, Smooth Bore
13	SMP Straight Male Receptacle, PCB, Catchers Mitt
14	SMP Straight Male Receptacle, PCB, Smooth Bore
15	SMP Straight Male Receptacle, PCB, Limited Detent
16	SMP Straight Male Receptacle, Press-in, Limited Detent
17	SMP Right Angle Male Receptacle, PCB, Limited Detent
18	SMP Right Angle Male Receptacle, PCB, Limited Detent
19	SMP Right Angle Male Receptacle, PCB, Limited Detent
20	SMP Right Angle Male Receptacle, PCB, Limited Detent
21	SMP Right Angle Male Receptacle, PCB, Limited Detent
22	SMP Right Angle Male Receptacle, PCB, Limited Detent
23	SMP Right Angle Male Receptacle, PCB, Smooth Bore
24	SMP Right Angle Male Receptacle, PCB, Smooth Bore
25	SMP Right Angle Male Receptacle, PCB, Full Detent
26	SMP Panel Male Receptacle, Limited Detent
27	SMP Bulkhead Male Receptacle, Hermetic, Full Detent
28	SMP Bulkhead Male Receptacle, Limited Detent
29	SMP Bulkhead Male Receptacle, Limited Detent
30	SMP Bulkhead Male Receptacle, Catchers Mitt
31	SMP Bulkhead Male Receptacle, Limited Detent
32	SMP Bulkhead Male Receptacle, Limited Detent, for Semi-rigid Cables Ø2.16mm
33	SMP Bulkhead Male Receptacle, Limited Detent
34	SMP Bulkhead Male Receptacle, Limited Detent
35	SMP Bulkhead Male Receptacle, Smooth Bore, for Semi-rigid Cables Ø2.16mm
36	SMP Straight Male Receptacle, PCB, Smooth Bore

NOTES:

1. See Para. 3 for details.

1.5 MAXIMUM RATINGS

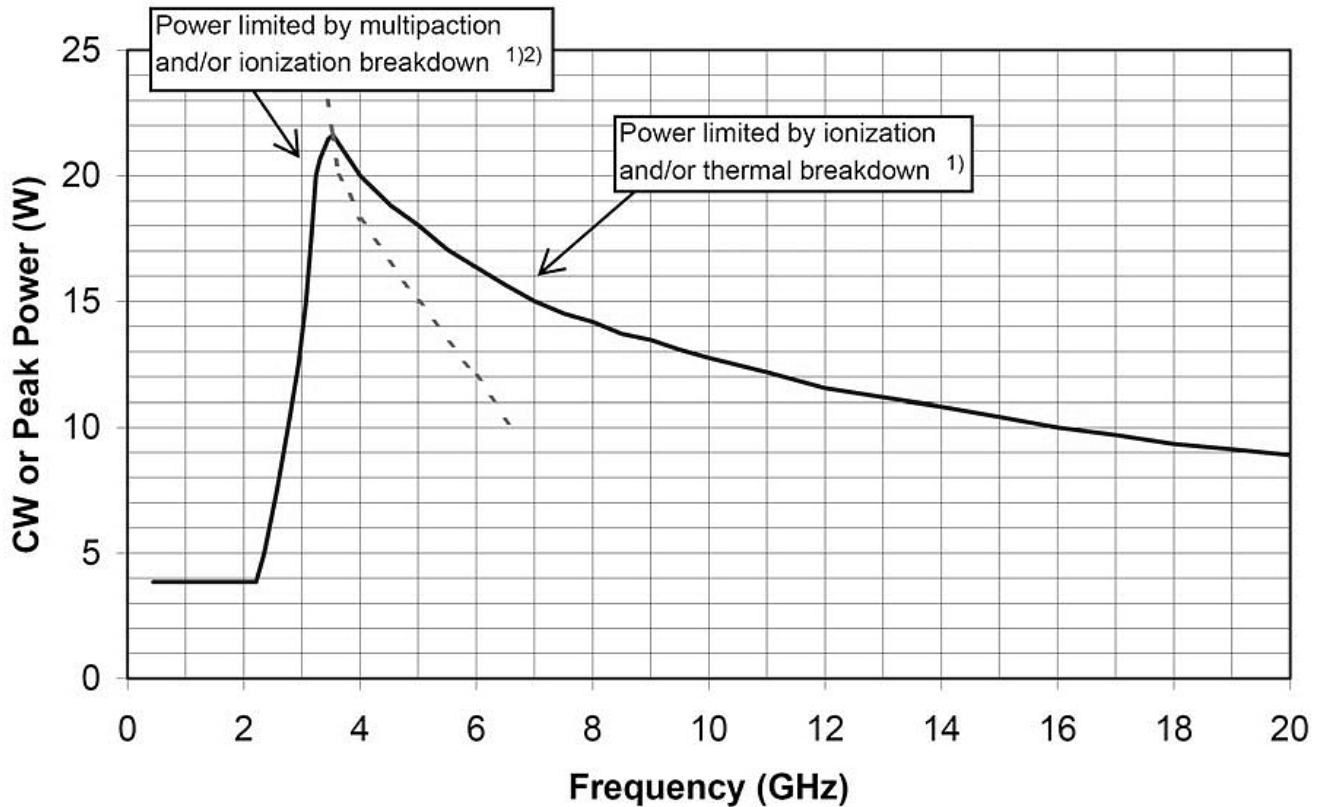
The maximum ratings shall not be exceeded at any time during use or storage.

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	Symbol	Maximum Ratings	Unit	Remarks
Power	P	21.5	W	Note 1
DC Power	P _{DC}	1000	W	Note 2
Nominal Impedance	Z	50	Ω	-
Operating Frequency Range	f	See Para. 3	GHz	-
Operating Voltage	V _{op}	335	V _{rms}	-
Operating Temperature Range	T _{op}	-65 to +155	°C	T _{amb}
Storage Temperature Range	T _{stg}	-65 to +155	°C	-

NOTES:

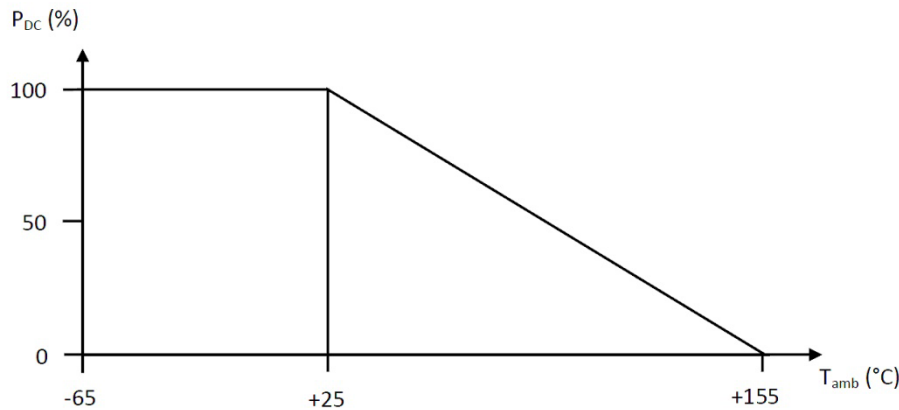
- Maximum Power (CW or peak) varies with frequency and it is limited by multipaction, ionization breakdown and thermal breakdown as shown below. The maximum operating frequency is given in Para. 3:



Maximum Power Handling in Space Vacuum at +25°C

- Load VSWR is better than 1.3:1.
- The part of the curve limited by multipaction takes into account a 6dB margin as recommended by ESA.

2. Derate DC Power with respect to Operating Temperature as follows:



1.6 PHYSICAL DIMENSIONS (SEE ALSO PARA. 3)

1.6.1 Connector Interface Dimensions

- SMP Male Connector Interface, Full Detent: compatible with series SMP pin contact full detent interface as specified in [MIL-STD-348](#).
- SMP Male Connector Interface, Limited Detent: compatible with series SMP pin contact limited detent interface as specified in [MIL-STD-348](#).
- SMP Male Connector Interface, Smooth Bore: compatible with series SMP pin contact smooth bore interface as specified in [MIL-STD-348](#).
- SMP Male Connector Interface, Catchers Mitt: compatible with series SMP pin contact catchers mit interface as specified in [MIL-STD-348](#).
- SMP Female Gauge Interface: compatible with series SMP socket contact interface (uncabled connector and cabled connector) as specified in [MIL-STD-348](#).

1.7 MATERIALS AND FINISHES

Materials and finishes shall be as follows (as applicable, see Para. 3):

- Shell: beryllium copper or brass, with copper underplate 1.5 μ m minimum, electroless nickel underplate 2 μ m minimum, and gold plating 1.27 μ m minimum.
- Centre Contact: beryllium copper or brass, with copper underplate 1.5 μ m minimum, electroless nickel underplate 2 μ m minimum, and gold plating 1.27 μ m minimum.
- Insulator: PTFE, PEEK or LCP.
- Ferrule, Crimping Sleeve, Solder Sleeve: brass or copper, with copper underplate 1.5 μ m minimum, electroless nickel underplate 2 μ m minimum, and gold plating 0.15 μ m minimum.

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 Screening Tests – Chart F3*

(a) Coupling Proof Torque is not applicable.

2.1.1.2 *Deviations from Qualification and Periodic Tests – Chart F4*

(a) Coupling Proof Torque is not applicable.

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 or the primary package shall be:

- (a) The ESCC qualified components symbol (for ESCC qualified components only).
- (b) The ESCC Component Number (see Para. 1.4.1).
- (c) Traceability information.

2.3 ENVIRONMENTAL AND MECHANICAL TESTS

The following requirements apply to tests performed on the connector (and contact) lot as specified in the ESCC Generic Specification:

- (a) Centre Contact Retention: See Para. 3.
- (b) Seal: See Para. 3.
- (c) Mating and Unmating Forces: Shall not be performed.
- (d) Endurance: The number of mating and unmating cycles shall be as follows:
 - During Qualification Testing:
 - For Full Detent Variants (see Para. 1.4.2): 40 cycles
 - For Limited Detent Variants (see Para. 1.4.2): 100 cycles
 - For Smooth Bore and Catchers Mitt Variants (see Para. 1.4.2): 200 cycles
 - During Periodic Testing:
 - For Full Detent Variants (see Para. 1.4.2): 20 cycles
 - For Limited Detent Variants (see Para. 1.4.2): 50 cycles
 - For Smooth Bore and Catchers Mitt Variants (see Para. 1.4.2): 100 cycles

2.4 ROOM TEMPERATURE ELECTRICAL MEASUREMENTS

The measurements shall be performed at $T_{amb} = +22 \pm 3^{\circ}C$.

Characteristics	Symbols	Test Method and Conditions	Limits		Units
			Min	Max	
Insulation Resistance	R _i	ESCC No. 3402	5	-	GΩ
Voltage Proof Leakage Current (Voltage Proof)	I _L	ESCC No. 3402 See Para. 3 Note 1	-	2	mA

NOTES:

1. Between centre contact and shell.

2.5 INTERMEDIATE AND END-POINT ELECTRICAL MEASUREMENTS

Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3^{\circ}\text{C}$.

Unless otherwise specified, the test methods and test conditions shall be as per the corresponding test defined in Para. 2.4 Room Temperature Electrical Measurements.

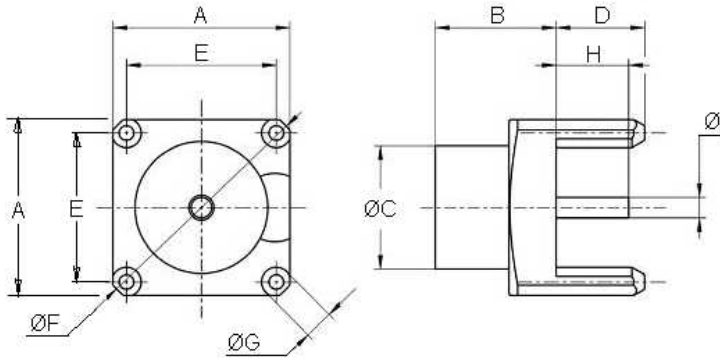
Test Reference per ESCC No. 3402	Characteristics and Test Conditions Ref. ESCC No. 3402	Symbols	Limits		Units
			Min	Max	
Random Vibration	Contact Resistance: $I_T = 10\text{mA}$, $V_T = 6\text{V}$ Centre contact:	R_{ctc}	-	6	$\text{m}\Omega$
Mechanical Shock	Contact Resistance: $I_T = 10\text{mA}$, $V_T = 6\text{V}$ Centre contact:	R_{ctc}	-	6	$\text{m}\Omega$
Temperature Cycling	Contact Resistance: $I_T = 10\text{mA}$, $V_T = 6\text{V}$ Centre contact: Voltage Proof Leakage Current:	R_{ctc} I_L	-	6 Note 1	$\text{m}\Omega$
Electrical Measurements at Room Temperature	Insulation Resistance: Voltage Proof Leakage Current: Contact Resistance: $I_T = 10\text{mA}$, $V_T = 6\text{V}$ Centre contact: Shell: VSWR (Note 3): Insertion Loss:	R_I I_L R_{ctc} R_{cts} VSWR LI	-	Note 1 Note 1 6 2 Note 2 Note 2	$\text{m}\Omega$ $\text{m}\Omega$
Endurance	Contact Resistance: $I_T = 10\text{mA}$, $V_T = 6\text{V}$ Centre contact: Shell:	R_{ctc} R_{cts}	-	6 2	$\text{m}\Omega$ $\text{m}\Omega$

NOTES:

1. As specified in Para. 2.4.
2. As specified in Para. 3.
3. Measured with suitable low level RF power applied.

3 COMPONENT TYPE VARIANTS – DETAIL REQUIREMENTS

3.1 VARIANT 01 AND 36 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT AND SMOOTH BORE



Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	4	4.2
ØC	4.1	4.3
D	2.9	3.1
E	4.98	5.18
ØF	7.8	8.2
ØG	0.9	1.1
H	2.3	2.7
ØI	0.6	0.8

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 10	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 5GHz: ≥ 26 5 to 10GHz: ≥ 20	dB
Maximum insertion loss (Note 1)	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

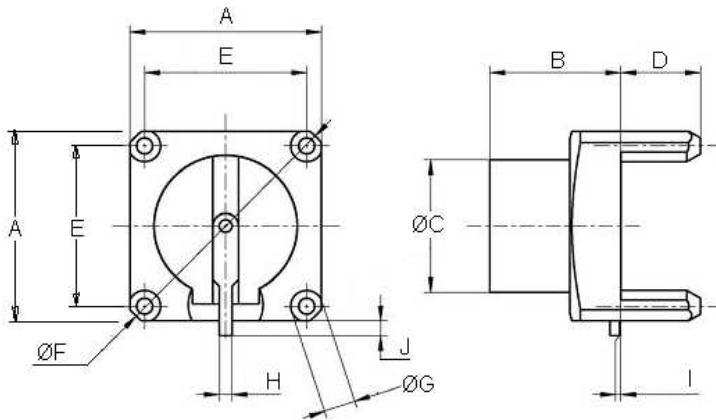
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.5	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. For smooth bore, only valid when fully mated with front contact.

3.2 VARIANTS 02 AND 11 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT AND SMOOTH BORE



Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	4	4.2
ØC	4.1	4.3
D	2.4	2.6
E	4.98	5.18
ØF	7.8	8.2
ØG	0.9	1.1
H	0.35	0.45
I	0 ± 0.1	
J	0.4	0.6

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 18 18 to 26.5GHz: ≥ 10	dB
Maximum insertion loss (Note 1)	0.05√f(GHz)	dB
Voltage proof	500	Vrms

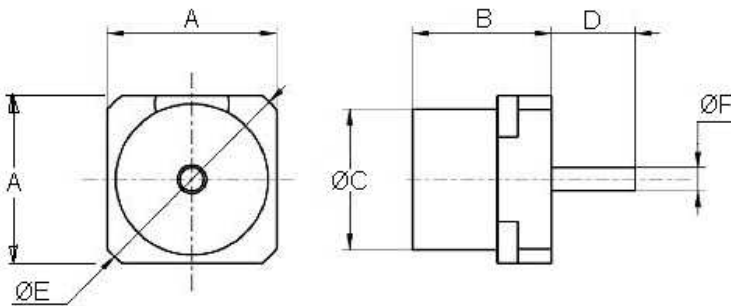
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	Variant 02: 0.5 Variant 11: 0.47	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. For smooth bore, only valid when fully mated with front contact.

3.3 VARIANTS 03 AND 15 – SMP STRAIGHT MALE RECEPTACLE, THRU-HOLE AND PCB, LIMITED DETENT



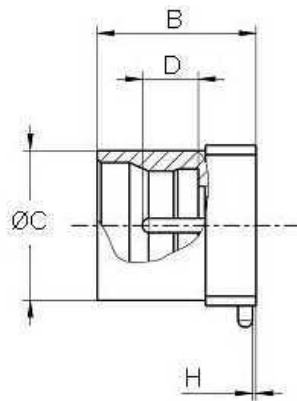
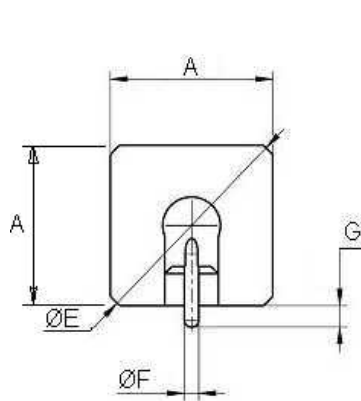
Symbols	Dimensions mm		Remarks
	Min	Max	
A	4.9	5.1	
B	4	4.2	
ØC	4.1	4.3	
D	2.3	2.7	Variant 03
	0.6	1	Variant 15
ØE	6.3	6.7	
ØF	0.6	0.8	

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	Variant 03: DC to 10 Variant 15: DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: Variant 03: DC to 5GHz: ≥ 26 5 to 10GHz: ≥ 20 Variant 15: DC to 6GHz: ≥ 26 6 to 12GHz: ≥ 20 12 to 15GHz: ≥ 18 15 to 26.5GHz: ≥ 12	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	Variant 03: 0.3 Variant 15: 0.35	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.4 VARIANT 04 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT



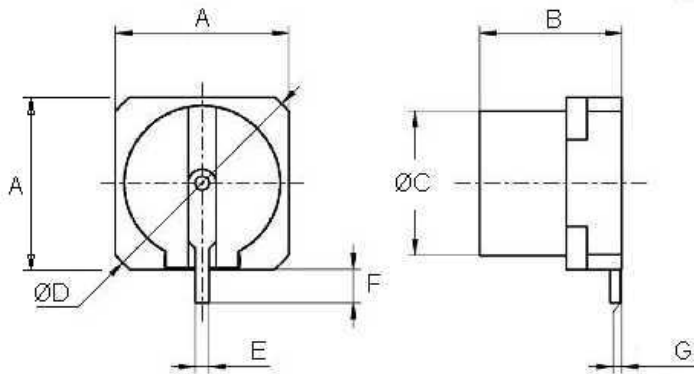
Symbols	Dimensions mm	
	Min	Max
A	4.4	4.6
B	4.3	4.5
ØC	4.1	4.3
D	1.14	1.7
ØE	5.9	6.1
ØF	0.35	0.45
G	0.5	0.7
H	0.1 (+0, -0.15)	

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 40	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 12GHz: ≥ 26 12 to 26.5GHz: ≥ 17 26.5 to 40GHz: ≥ 15	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.41	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.5 VARIANTS 05 AND 10 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT AND SMOOTH BORE



Symbols	Dimensions mm	
	Min	Max
A	4.9	5.1
B	4	4.2
ØC	4.1	4.3
ØD	6.3	6.7
E	0.35	0.45
F	0.9	1.1
G	0 ± 0.1	

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 18 18 to 26.5GHz: ≥ 10	dB
Maximum insertion loss (Note 1)	0.05√f(GHz)	dB
Voltage proof	500	Vrms

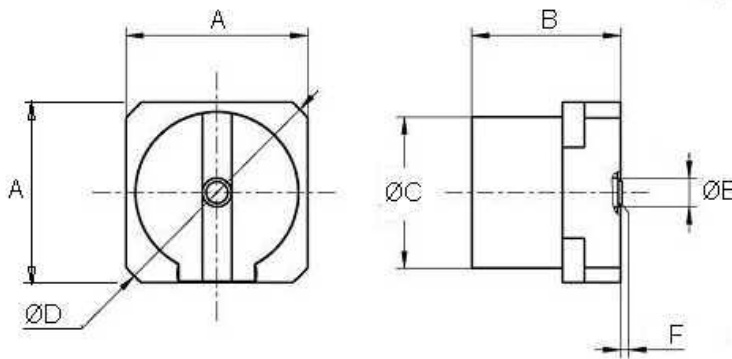
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.3	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. For smooth bore, only valid when fully mated with front contact.

3.6 VARIANT 07 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT



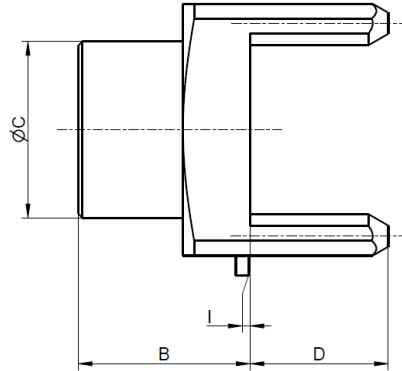
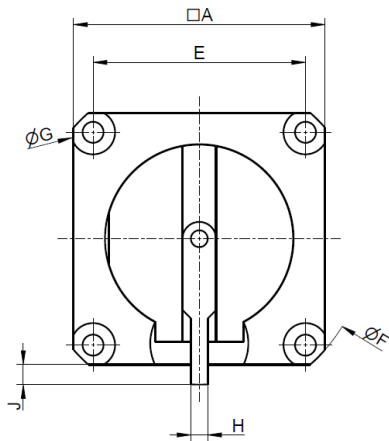
Symbols	Dimensions mm	
	Min	Max
A	4.9	5.1
B	4	4.2
ØC	4.1	4.3
ØD	6.3	6.7
ØE	0.7	0.9
F	0.05 (+0, -0.15)	

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 18	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 26 6 to 12GHz: ≥ 22 12 to 18GHz: ≥ 15	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.29	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.7 VARIANT 08 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT



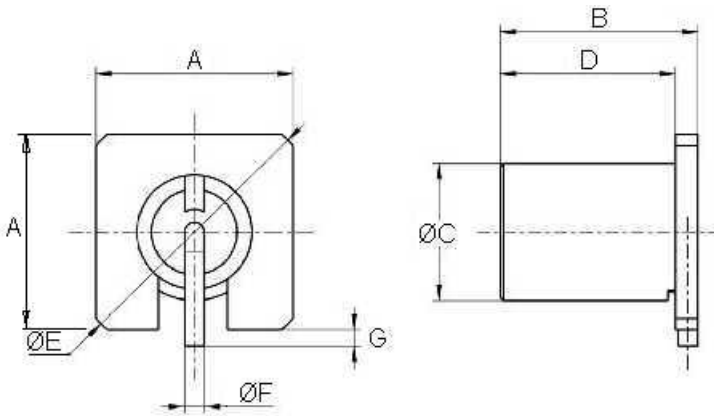
Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	4	4.2
ØC	4.1	4.3
D	3.2	3.4
E	4.98	5.18
ØF	7.8	8.2
ØG	0.9	1.1
H	0.35	0.45
I	0 ± 0.1	
J	0.4	0.6

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 18 18 to 26.5GHz: ≥ 10	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.52	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.8 VARIANT 09 – SMP STRAIGHT MALE RECEPTACLE, PCB, LIMITED DETENT



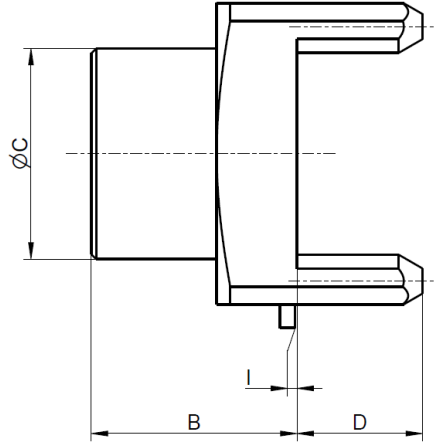
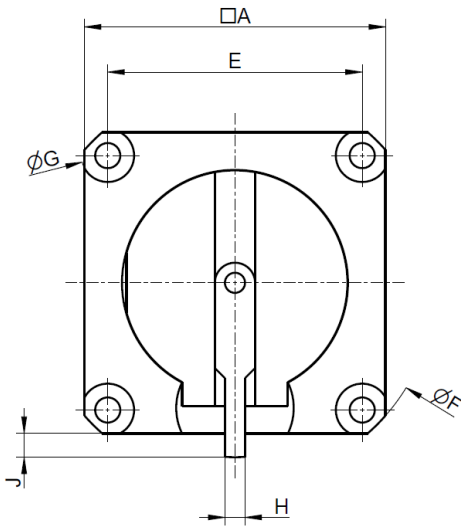
Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	5.9	6.1
ØC	4.1	4.3
D	5.2	5.4
ØE	7.8	8.2
ØF	0.5	0.7
G	0.4	0.6

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 12	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 2GHz: ≥ 26 2 to 12GHz: ≥ 18	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.51	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.9 VARIANT 12 – SMP STRAIGHT MALE RECEPTACLE, PCB, SMOOTH BORE



Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	4	4.2
ØC	5.9	6.1
D	2.4	2.6
E	4.98	5.18
ØF	7.8	8.2
ØG	0.9	1.1
H	0.35	0.45
I	0 ± 0.1	
J	0.4	0.6
K	2.76	2.84
L	1.14	1.4
ØM	5.4	5.6

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 18 18 to 26.5GHz: ≥ 10	dB
Maximum insertion loss (Note 1)	0.05√f(GHz)	dB
Voltage proof	500	Vrms

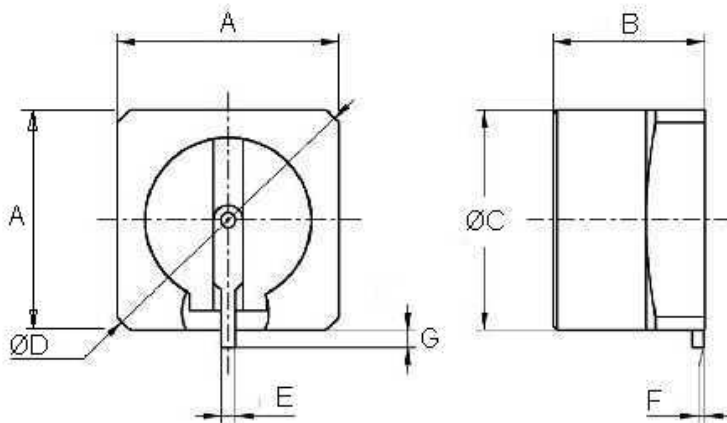
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.77	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. Only valid when fully mated with front contact.

3.10 VARIANT 13 – SMP STRAIGHT MALE RECEPTACLE, PCB, CATCHERS MITT



Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	4	4.2
ØC	5.9	6.1
ØD	7.8	8.2
E	0.3	0.5
F	0 ± 0.1	
G	0.4	
A	5.9	6.1

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 18 18 to 26.5GHz: ≥ 10	dB
Maximum insertion loss (Note 1)	0.05√f(GHz)	dB
Voltage proof	500	Vrms

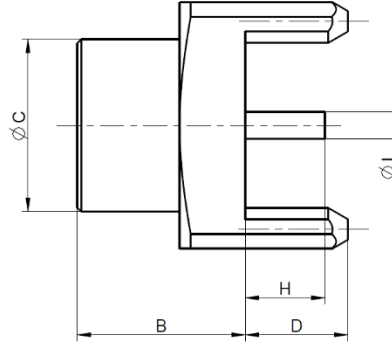
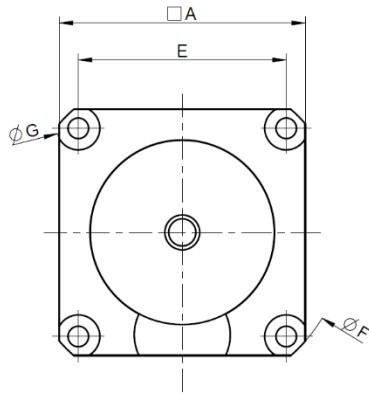
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.7	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. Only valid when fully mated with front contact.

3.11 VARIANT 14 – SMP STRAIGHT MALE RECEPTACLE, PCB, SMOOTH BORE



Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	4	4.2
ØC	5.9	6.1
D	2.4	2.6
E	4.98	5.18
ØF	7.8	8.2
ØG	0.9	1.1
H	1.9	2.1
ØI	0.6	0.8

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 10	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 5GHz: ≥ 26 5 to 10GHz: ≥ 20	dB
Maximum insertion loss (Note 1)	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

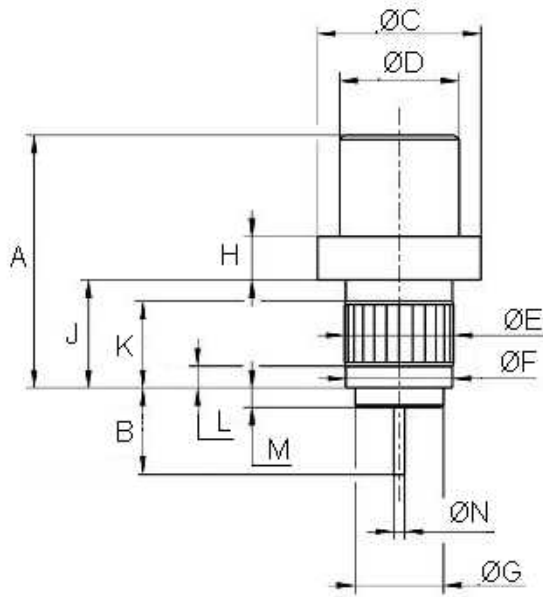
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.77	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. Only valid when fully mated with front contact.

3.12 VARIANT 16 – SMP STRAIGHT MALE RECEPTACLE, PRESS-IN, LIMITED DETENT



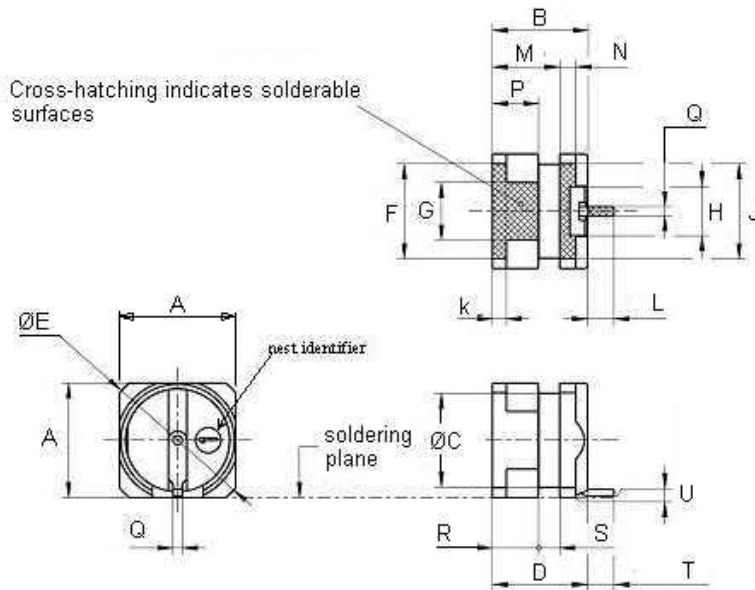
Symbols	Dimensions mm	
	Min	Max
A	11.5	11.9
B	3.7	4.3
ØC	7.3	7.7
ØD	5.4	5.6
ØE	5.03	5.11
ØF	4.8	5
ØG	3.96	4.16
H	1.9	2.1
J	4.9	5.1
K	3.9	4.1
L	0.9	1.1
M	0.8	1.2
ØN	0.4	0.6

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 18	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 2GHz: ≥ 29 2 to 6GHz: ≥ 20 6 to 18GHz: ≥ 15	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1.7	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.13 VARIANT 17 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, LIMITED DETENT



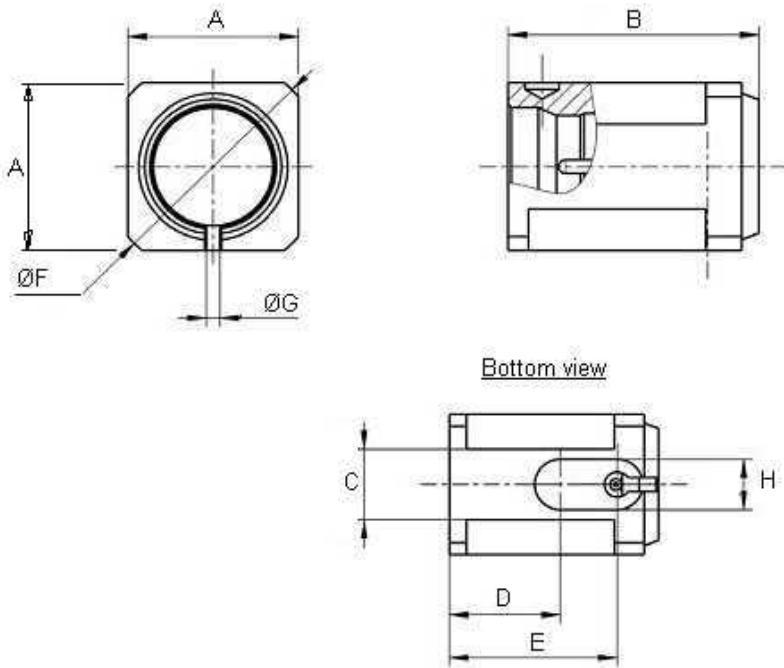
Symbols	Dimensions mm	
	Min	Max
A	4.9	5.1
B	4.1	4.3
ØC	4	4.2
D	4	4.2
ØE	6.3	6.7
F	4.05	4.25
G	2.4	2.6
H	2.05	2.25
J	4.05	4.25
k	0.5	0.7
L	1.05	1.25
M	2.8	3
N	0.6	0.8
P	1.9	2.1
Q	0.35	0.45
R	1.8	2.2
S	0.8	1
T	1	1.4
U	0.05 (+0, -0.1)	

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 18	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 15	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.14 VARIANT 18 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, LIMITED DETENT



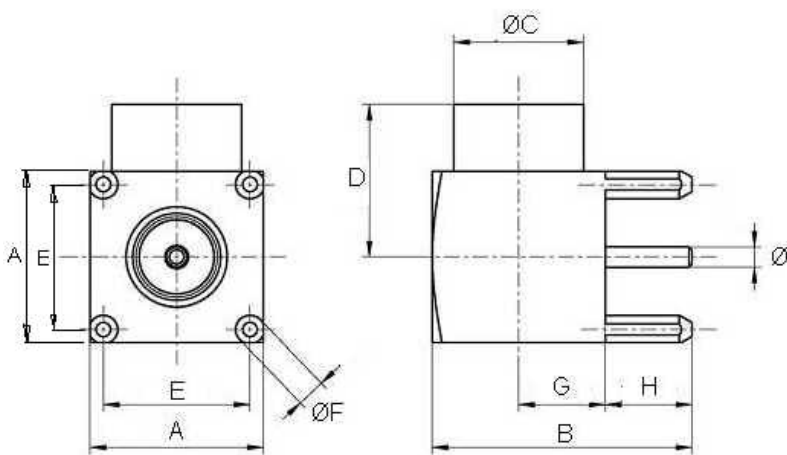
Symbols	Dimensions mm	
	Min	Max
A	4.9	5.1
B	7.15	7.55
C	2.29	2.67
D	3.9	4.1
E	5.9	6.1
ØF	6.3	6.7
ØG	0.35	0.45
H	1.7	1.9

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 6	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 2GHz: ≥ 26 2 to 6GHz: ≥ 17	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.15 VARIANT 19 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, LIMITED DETENT



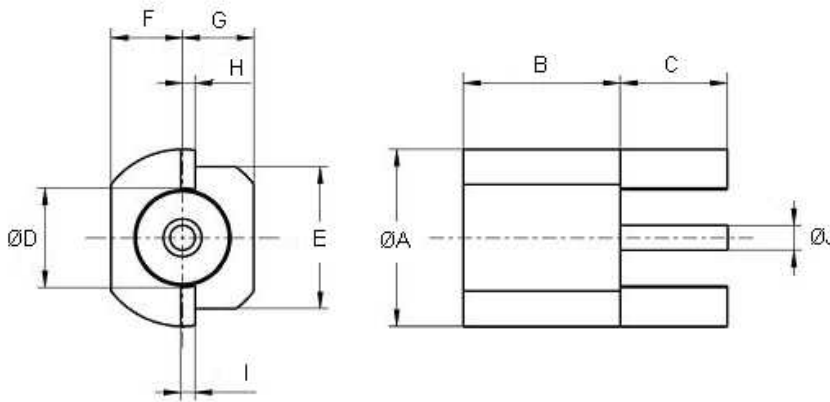
Symbols	Dimensions mm	
	Min	Max
A	5.9	6.1
B	8.8	9.2
ØC	4.4	4.6
D	5.25	5.45
E	4.98	5.18
ØF	0.9	1.1
G	2.8	3.2
H	2.8	3.2
ØI	0.6	0.8

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 6	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss, DC to 6GHz: ≥ 21	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1.85	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.16 VARIANTS 20, 23 AND 25 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, LIMITED DETENT, SMOOTH BORE AND FULL DETENT



Symbols	Dimensions mm	
	Min	Max
ØA	4.9	5.1
B	4.3	4.5
C	2.9	3.1
ØD	2.7	2.9
E	3.9	4.1
F	1.9	2.1
G	1.9	2.1
H	0.3	0.4
I	0.35	0.45
ØJ	0.6	0.8

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 30 6 to 18GHz: ≥ 22 18 to 26.5GHz: ≥ 17	dB
Maximum insertion loss (Note 1)	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

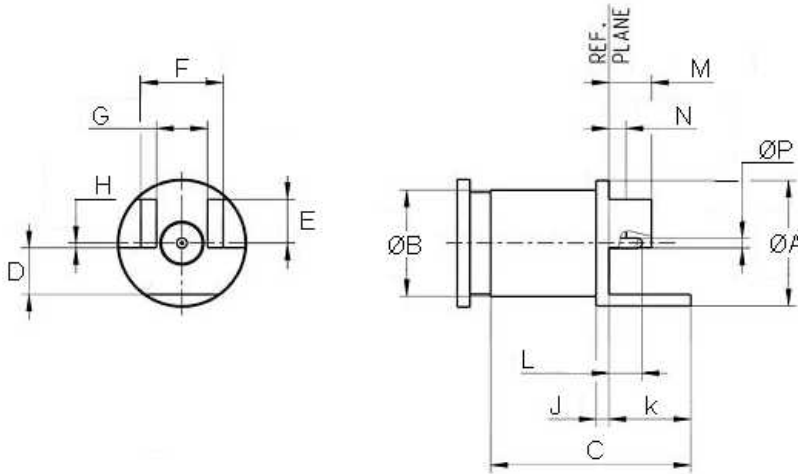
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. For smooth bore, only valid when fully mated with front contact.

3.17 VARIANT 21 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, LIMITED DETENT



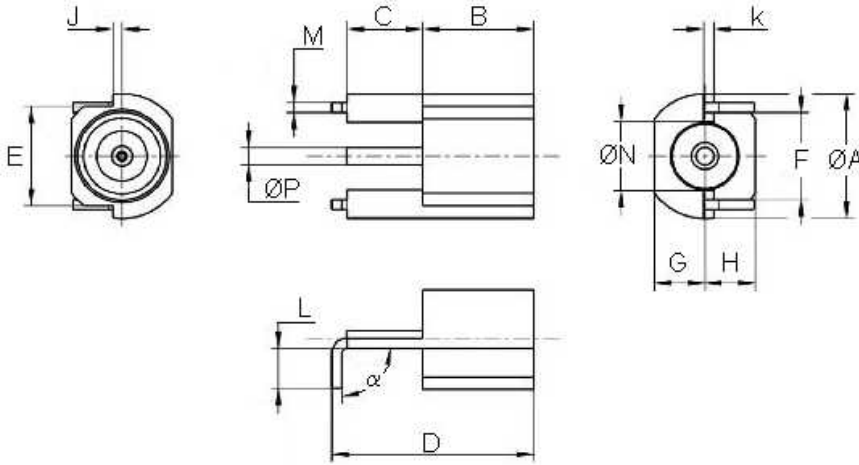
Symbols	Dimensions mm	
	Min	Max
ØA	4.82	5.02
ØB	4.07	4.27
C	7.6	8
D	1.73	1.93
E	1.62	1.82
F	3.13	3.27
G	1.88	2.08
H	0.08	0.28
J	0.4	0.6
k	3.13	3.23
L	1.25	1.29
M	1.61	1.71
N	0.62	0.72
ØP	0.33	0.43

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 40	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 26.5GHz: ≥ 18 26.5 to 40GHz: ≥ 15	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.18 VARIANT 22 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, LIMITED DETENT



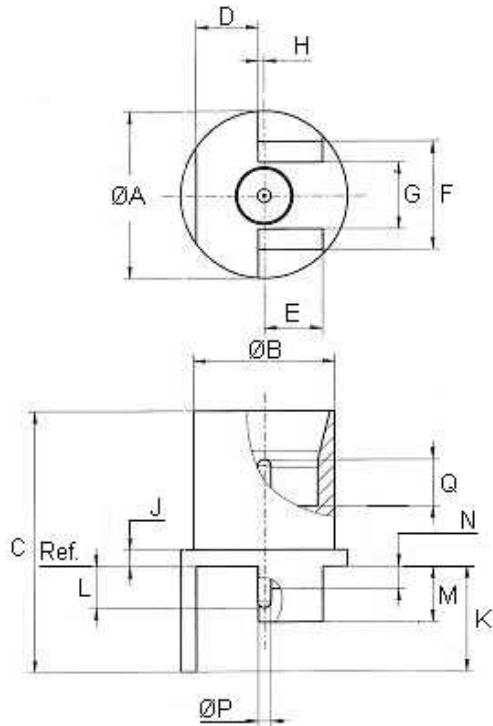
Symbols	Dimensions mm	
	Min	Max
ØA	4.9	5.1
B	4.3	4.5
C	2.9	3.1
D	7.8	8.2
E	3.9	4.1
F	3.4	3.6
G	1.9	2.1
H	1.9	2.1
J	0.3	0.4
k	0.35	0.45
L	1.45	1.75
M	0.35	0.45
ØN	2.7	2.9
ØP	0.6	0.8
α	89°	91°

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 30 6 to 18GHz: ≥ 22 18 to 26.5GHz: ≥ 17	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.19 VARIANT 24 – SMP RIGHT ANGLE MALE RECEPTACLE, PCB, SMOOTH BORE



Symbols	Dimensions mm	
	Min	Max
ØA	4.82	5.02
ØB	4.07	4.27
C	7.6	8
D	1.73	1.93
E	1.68	1.78
F	3.13	3.27
G	1.93	2.03
H	0.13	0.23
J	0.4	0.6
K	3.13	3.23
L	1.07	1.47
M	1.61	1.71
N	0.62	0.72
ØP	0.33	0.43
Q	1.14	1.4

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 40	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 26.5GHz: ≥ 18 26.5 to 40GHz: ≥ 15	dB
Maximum insertion loss (Note 1)	0.05√f(GHz)	dB
Voltage proof	500	Vrms

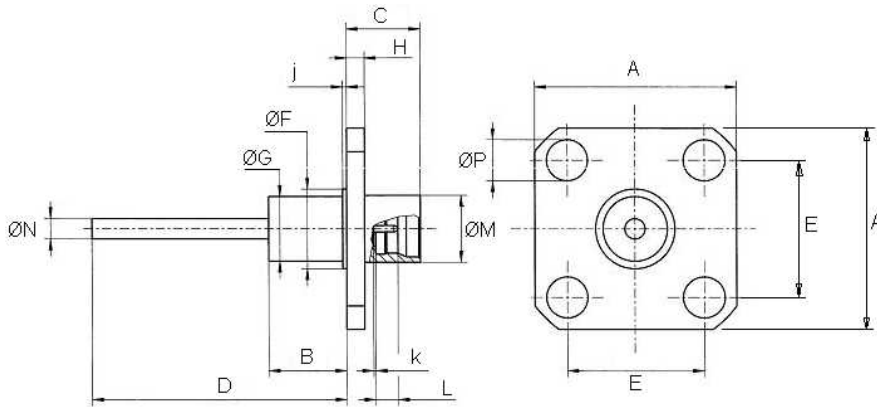
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. For smooth bore, only valid when fully mated with front contact.

3.20 VARIANT 26 – SMP PANEL MALE RECEPTACLE, LIMITED DETENT



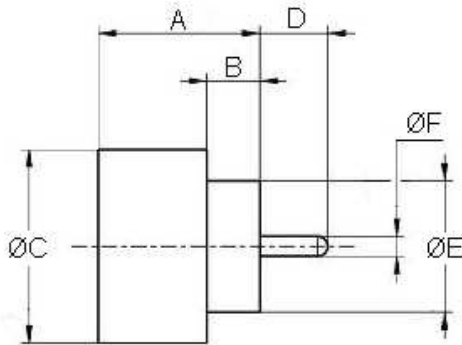
Symbols	Dimensions mm	
	Min	Max
A	12.5	12.9
B	4.8	5.2
C	4.55	4.69
D	16.1	16.3
E	8.44	8.84
ØF	4.95	5
ØG	4.05	4.15
H	1.04	1.24
j	0.15	0.35
k	0	-
L	1.14	1.4
ØM	4.1	4.3
ØN	1.24	1.3
ØP	2.5	2.7

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 18	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 26 6 to 12GHz: ≥ 23 12 to 18GHz: ≥ 18	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1.8	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.21 VARIANT 27 – SMP BULKHEAD MALE RECEPTACLE, HERMETIC, FULL DETENT



Symbols	Dimensions mm	
	Min	Max
A	2.95	3.15
B	0.9	1.1
ØC	3.63	3.73
D	1.12	1.42
ØE	2.44	2.54
ØF	0.33	0.43

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 40	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 30 6 to 18GHz: ≥ 23 18 to 40GHz: ≥ 17	dB
Maximum insertion loss (Note 1)	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

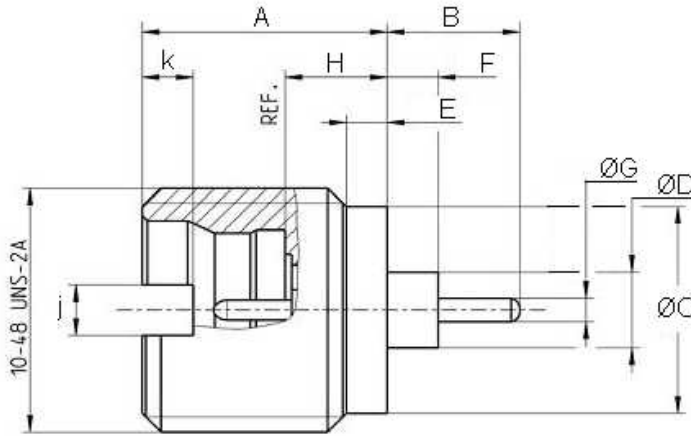
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.09	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	1×10^{-8}	atm.cm ³ /s
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. For information only.

3.22 VARIANT 28 – SMP BULKHEAD MALE RECEPTACLE, LIMITED DETENT



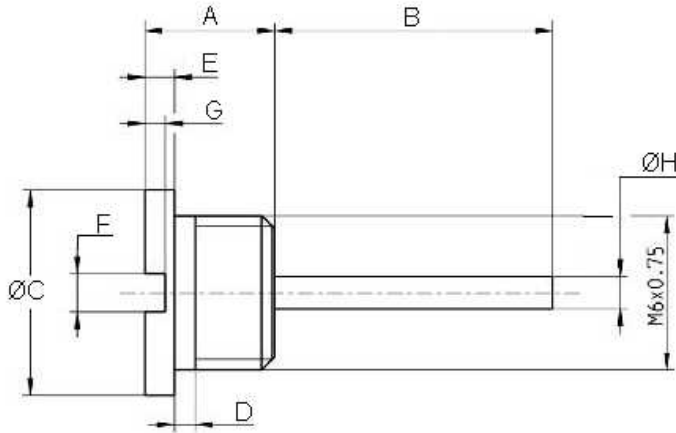
Symbols	Dimensions mm	
	Min	Max
A	4.7	4.9
B	2.5	2.7
ØC	4	4.2
ØD	1.4	1.5
E	0.6	1
F	0.8	1.2
ØG	0.44	0.47
H	2	2.1
j	0.9	1.1
k	0.9	1.1

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 40	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 26.5GHz: ≥ 18 26.5 to 40GHz: ≥ 15	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.23 VARIANT 29 – SMP BULKHEAD MALE RECEPTACLE, LIMITED DETENT



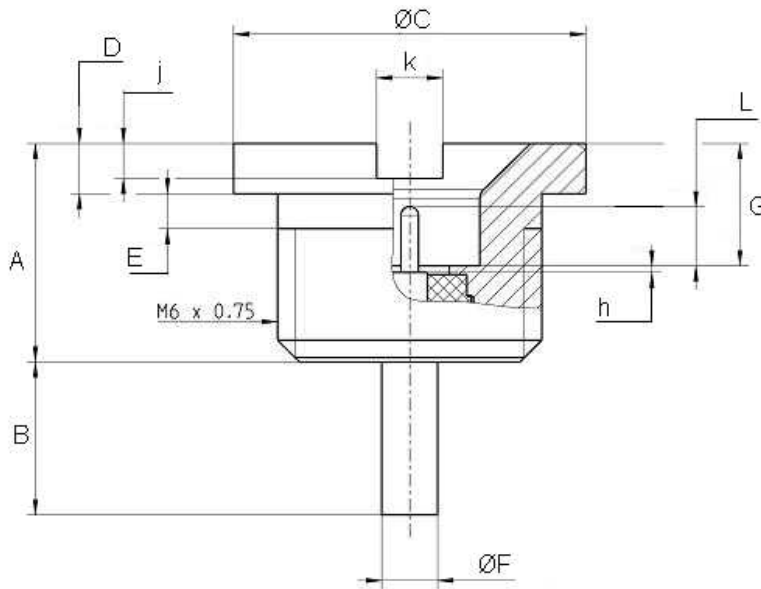
Symbols	Dimensions mm	
	Min	Max
A	4.9	5.1
B	10.5	10.9
ØC	7.8	8.2
D	0.7	0.9
E	1	1.2
F	1.4	1.6
G	0.7	0.9
ØH	1.24	1.27

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 26.5GHz: ≥ 18	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.55	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.24 VARIANT 30 – SMP BULKHEAD MALE RECEPTACLE, CATCHERS MITT



Symbols	Dimensions mm	
	Min	Max
A	4.9	5.1
B	3.4	3.6
ØC	7.8	8.2
D	1	1.2
E	0.7	0.9
ØF	1.24	1.27
G	2.76	2.84
h	0	-
j	0.7	0.9
k	1.4	1.6
L	1.14	1.4

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 6GHz: ≥ 29 6 to 12GHz: ≥ 23 12 to 26.5GHz: ≥ 18	dB
Maximum insertion loss (Note 1)	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

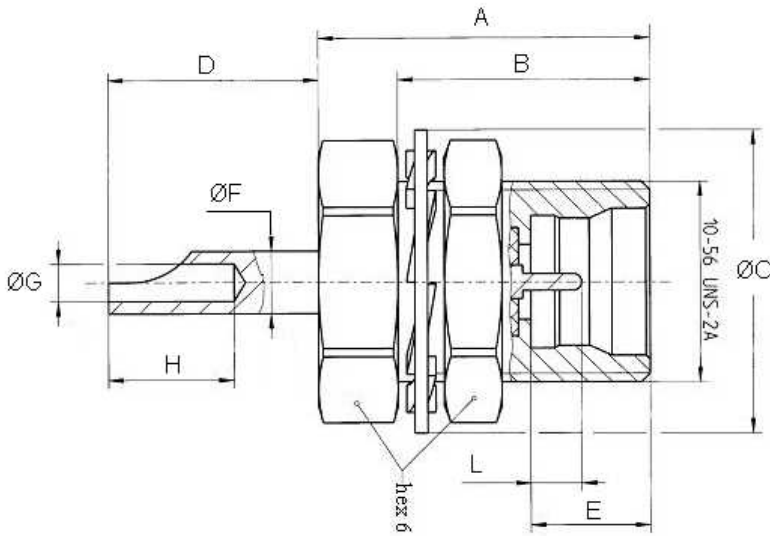
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	0.5	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

NOTES:

1. Only valid when fully mated with front contact.

3.25 VARIANT 31 – SMP BULKHEAD MALE RECEPTACLE, LIMITED DETENT



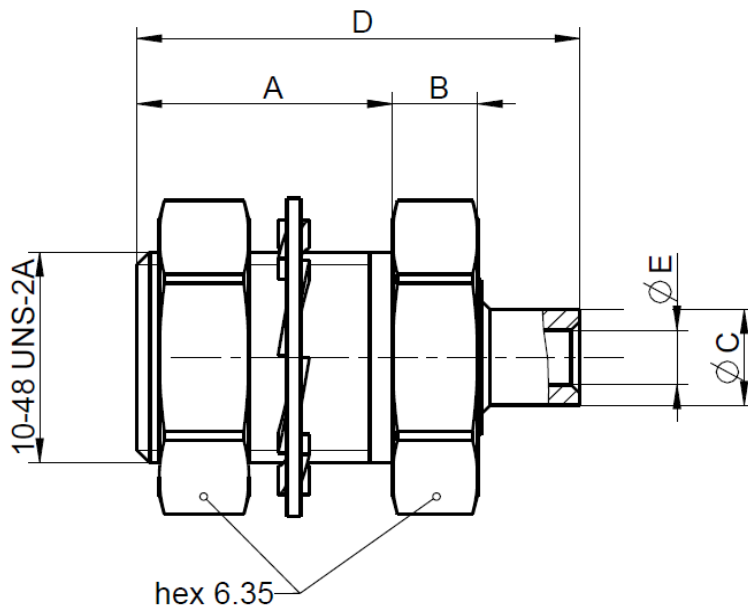
Symbols	Dimensions mm	
	Min	Max
A	7.85	8
B	6	6.05
ØC	7.1	7.5
D	4.8	5.2
E	2.76	2.84
ØF	1.4	1.6
ØG	0.8	1
H	2.9	3.1
L	1.14	1.4

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 18	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 26 6 to 12GHz: ≥ 20 12 to 18GHz: ≥ 15	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1.4	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.26 VARIANTS 32 AND 35 – SMP BULKHEAD MALE RECEPTACLE, LIMITED DETENT AND SMOOTH BORE, FOR SEMI-RIGID CABLES Ø2.16MM



Symbols	Dimensions mm	
	Min	Max
A	5.6	5.8
B	1.6	2.2
ØC	3.6	3.8
D	9.7	10.1
ØE	2.2	2.4

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 40	GHz
Maximum voltage standing wave ratio (VSWR) (Note 1)	Return Loss: DC to 8GHz: ≥ 30 8 to 16GHz: ≥ 22 16 to 40GHz: ≥ 18	dB
Maximum insertion loss (Note 1)	0.05√f(GHz)	dB
Voltage proof	500	Vrms

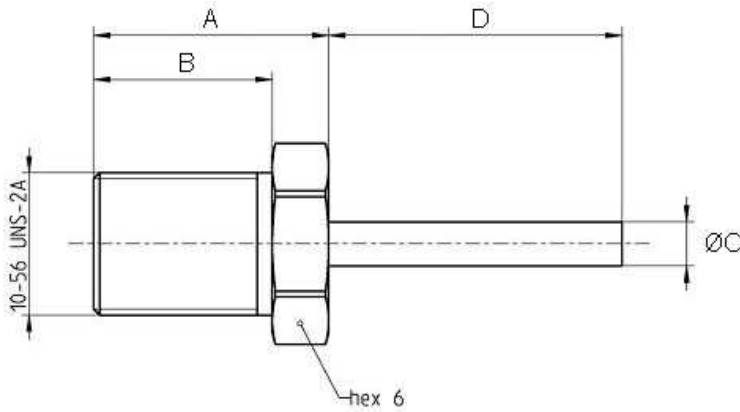
MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	Not applicable	
Minimum centre contact retention torque	Not applicable	
Maximum weight	Variant 32: 1.41 Variant 35: 1.6	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	RG 405/U UT 85-M17	

NOTES:

1. For smooth bore, only valid when fully mated with front contact.

3.27 VARIANT 33 – SMP BULKHEAD MALE RECEPTACLE, LIMITED DETENT



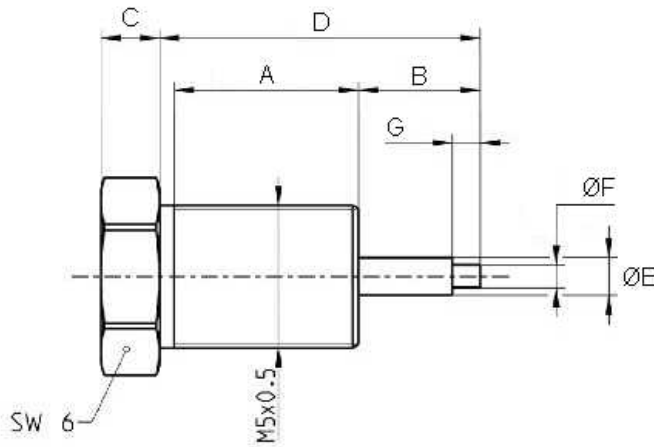
Symbols	Dimensions mm	
	Min	Max
A	7.85	8
B	6	6.05
ØC	1.45	1.5
D	9.8	9.95

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 18	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 26 6 to 12GHz: ≥ 20 12 to 18GHz: ≥ 15	dB
Maximum insertion loss	$0.05\sqrt{f(\text{GHz})}$	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1.1	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

3.28 VARIANT 34 – SMP BULKHEAD MALE RECEPTACLE, LIMITED DETENT



Symbols	Dimensions mm	
	Min	Max
A	6.3	-
B	4	4.2
C	1.9	2.1
D	10.7	11.1
ØE	1.2	1.4
ØF	0.7	0.9
G	0.85	1.05

ELECTRICAL CHARACTERISTICS	VALUES	UNITS
Frequency range	DC to 26.5	GHz
Maximum voltage standing wave ratio (VSWR)	Return Loss: DC to 6GHz: ≥ 26 6 to 12GHz: ≥ 20 12 to 26.5GHz: ≥ 15	dB
Maximum insertion loss	0.05√f(GHz)	dB
Voltage proof	500	Vrms

MECHANICAL CHARACTERISTICS	VALUES	UNITS
Minimum centre contact retention force (axial)	7	N
Minimum centre contact retention torque	Not applicable	
Maximum weight	1.2	g

OTHER CHARACTERISTICS	VALUES	UNITS
Seal: Maximum leakage	Not applicable	
Solderability	Applicable	
Cables used	Not applicable	

APPENDIX A
AGREED DEVIATIONS FOR ROSENBERGER (D)

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS
Para. 1.4.1, The ESCC Component Number	The ESCC Component Number may include the additional Manufacturer's code 'B' as indicated in the following example: Example: 340202401 B
Para. 2.1.1.1 Deviations from Screening Tests – Chart F3	Temperature Cycling: For Variants 01 to 15, 17 to 25, and 36 (i.e., PCB and Thru-hole connectors), the following alternative temperature extremes may be applied during Temperature Cycling: <ul style="list-style-type: none">• Minimum temperature: -20 ±5°C• Maximum temperature: +70 ±5°C