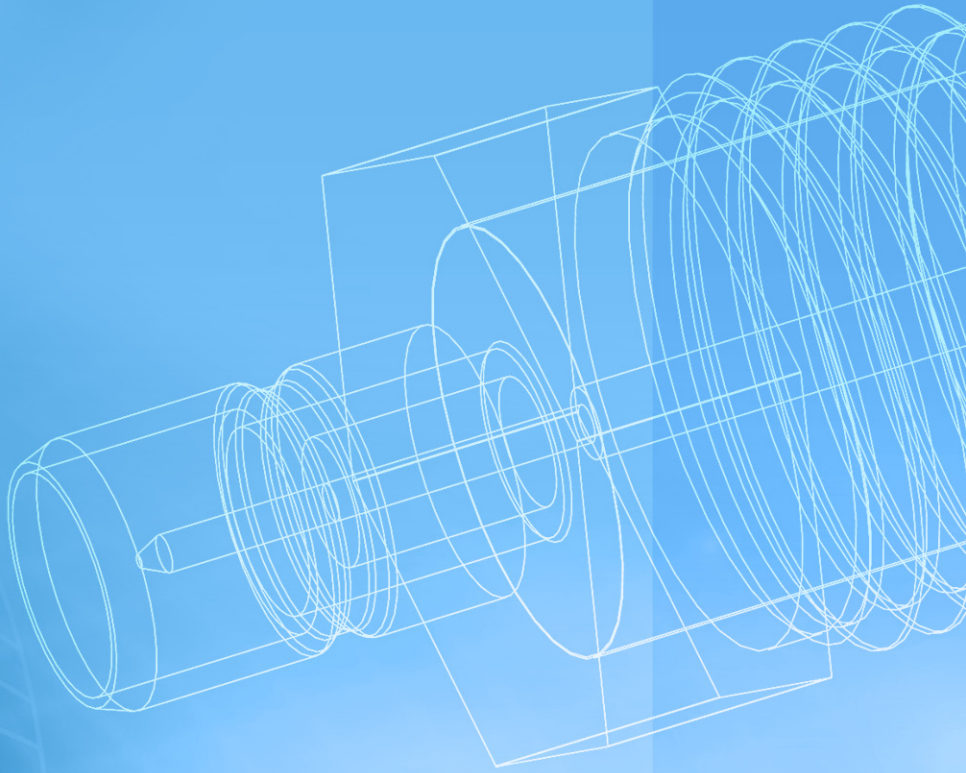


SMB



SMB Connectors

SMB Connectors

Description

The SMB name derives from SubMiniature B (the second subminiature design). Developed in the 1960's, this sub miniature interface has snap-on coupling. Amphenol's SMB connectors conform to the requirements of MIL-C-39012, and the interface is in compliance with MIL-STD-348. Available in 50 Ω and 75 Ω , the SMB provides broadband capability through 10 GHz with a snap-on connector design and utilizes die cast components on non-critical areas to provide a low-cost solution.

Features/Benefits

- Broadband performance with low reflection DC to 4 GHz provides low cost connector combined with high quality.
- Quick connect/disconnect snap-on mating reduces installation time.
- Various plating options in nickel, gold, and tin. Selective plating provides corrosion resistance finish as well as good solderability characteristics.
- SMB PCB slide-on plug and jack allows board-to-board mounting with a low insertion force. This is ideal for mating a high number of connectors on a pair of PCB's.

Applications

- Automotive
- Base Stations
- Cable Assemblies
- Components
- Instrumentation
- PC/LAN
- Process Controls
- Radio Boards
- Surge Protection
- Telecom
- Test and Measurement
- Video Systems

50 Ω SMB Specifications

Electrical

Impedance	50 Ω
Frequency range	DC - 4 GHz (usable to 10 GHz)
VSWR	1.2 max. @ DC - 4 GHz 1.5 max. @ 4 - 10 GHz
RF-leakage	55 dB minimum @ 1 GHz (flexible cable)
Voltage rating (at sea level)	≥ 250 Vrms (depending on cable)
Contact resistance	center contact: ≤ 6 mΩ outer contact: ≤ 2.5 mΩ braid to body: ≤ 1 mΩ
Insulation resistance	5,000 MΩ minimum
Insertion loss maximum	0.3 dB @ 1.5 GHz
Dielectric withstanding voltage	1,000 Vrms (at sea level)

Mechanical

Mating	Snap-on coupling (MIL-STD-348)
Braid/Jacket cable affixment	Hex crimp
Center conductor cable affixment	Solder
Captivated contacts	All, unless noted otherwise
Engagement force	≤ 14.2 lbs (63N)
Disengagement force	≥ 1.8 lbs (8N)
Durability (matings)	500 cycles minimum

Environmental

Temperature range	-65°C to +165°C
Thermal shock	MIL-STD-202, method 107, cond. B
Moisture resistance	MIL-STD-202, method 106
Corrosion	MIL-STD-202, method 101, cond. B
Vibration	MIL-STD-202, method 204, cond. D
Mechanical shock	MIL-STD-202, method 213, cond. B

50 Ω SMB Specifications (continued)

Material

Body and outer contacts
 Male contact
 Female contact
 Crimp ferrule
 Insulator

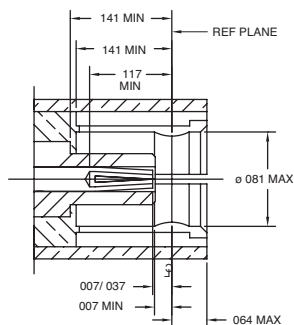
Body: brass or zinc alloy (ASTM-B86-71), gold or nickel plated
 Brass, gold plated
 Beryllium copper or phosphor bronze, gold plated
 Copper or brass, nickel or gold plated
 PTFE

Military

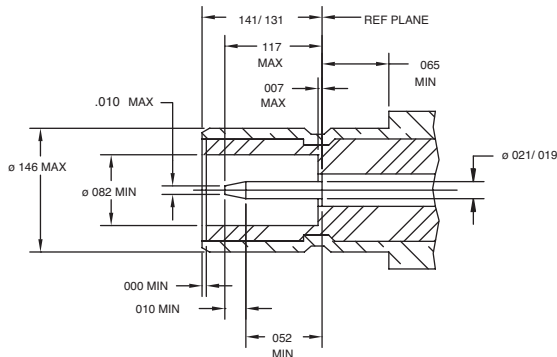
MIL-C-22557A

where applicable

Plug



Jack



75 Ω SMB Specifications**Electrical**

Impedance	75 Ω
Frequency range	DC - 4 GHz
VSWR	1.4 max. @ DC - 4 GHz
RF-leakage	55 dB minimum @ 1 GHz (flexible cable)
Voltage rating (at sea level)	\geq 250 Vrms (depending on cable)
Contact resistance	center contact: \leq 6 m Ω outer contact: \leq 1 m Ω braid to body: \leq 1 m Ω
Insulation resistance	5,000 M Ω minimum
Insertion loss maximum	0.3 dB @ 1.5 GHz
Dielectric withstanding voltage	1,000 Vrms (at sea level)

Mechanical

Mating	Snap-on coupling (MIL-STD-348)
Braid/Jacket cable affixment	Hex crimp
Center conductor cable affixment	Solder
Captivated contacts	All, unless noted otherwise
Engagement force	\leq 14.2 lbs (63N)
Disengagement force	\geq 1.8 lbs (8N)
Durability (matings)	500 cycles minimum

Environmental

Temperature range	-65°C to +165°C
Thermal shock	MIL-STD-202, method 107, cond. B
Moisture resistance	MIL-STD-202, method 106
Corrosion	MIL-STD-202, method 101, cond. B
Vibration	MIL-STD-202, method 204, cond. D
Mechanical shock	MIL-STD-202, method 213, cond. B

75 Ω SMB Specifications (continued)

Material

Body and outer contacts
 Male contact
 Female contact
 Crimp ferrule
 Insulator

Body: brass or zinc alloy (ASTM-B86-71), gold or nickel plated
 Brass, gold plated
 Beryllium copper or phosphor bronze, gold plated
 Copper or brass, nickel or gold plated
 PTFE

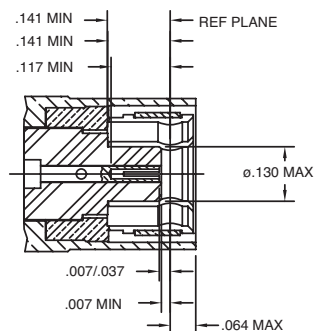
Military

MIL-C-22557A

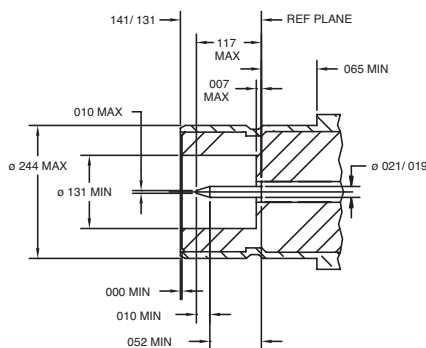
where applicable

Note: These characteristics are typical but may not apply to all connectors.

Plug



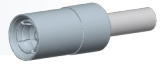
Jack



50 Ω Cable Connectors

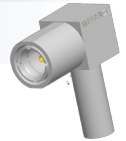
Straight Plugs

Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
A	903-287P-51S	Gold	Gold	Crimp	Solder
A	903-509P-51S	Gold	Gold	Crimp	Solder
A	903-371P-51S	Nickel	Gold	Crimp	Solder
A	903-578P-51S	Gold	Gold	Crimp	Crimp
A	903-578P-51S1	Nickel	Gold	Crimp	Crimp
B	903-285P-51S	Gold	Gold	Crimp	Solder
B	903-370P-51S	Nickel	Gold	Crimp	Solder
B	903-577P-51S1	Nickel	Gold	Crimp	Crimp
B	903-577P-51S	Gold	Gold	Crimp	Crimp
B2	903-401P-51S	Gold	Gold	Crimp	Solder
B2	903-579P-51S	Gold	Gold	Crimp	Crimp
B2	903-579P-51S1	Nickel	Gold	Crimp	Crimp



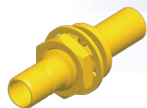
Angle Plugs

Cable Group	Part Number	Plating		Termination		Description
		Body	Contact	Body	Contact	
A	903-291P-51A	Gold	Gold	Crimp	Solder	Zinc Diecast Body
A	903-291P-51A1	Gold	Gold	Crimp	Solder	
A	903-368P-51A1	Nickel	Gold	Crimp	Solder	
B	903-289P-51A	Gold	Gold	Crimp	Solder	
B	903-367P-51A	Nickel	Gold	Crimp	Solder	
B	903-367P-51A2	Nickel	Gold	Crimp	Solder	
B2	903-369P-51A2	Nickel	Gold	Crimp	Solder	



50 Ω Cable Connectors (continued)

Straight Bulkhead Jacks



Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
B2	903-505J-51S1	Gold	Gold	Crimp	Solder
B2	903-505J-51S	Gold	Gold	Crimp	Solder
L2	903-659J-51S	Gold	Gold	Solder	Solder

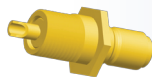
Angle Bulkhead Jacks



Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
B	903-422J-51A	Gold	Gold	Crimp	Solder
B2	903-683J-51A	Gold	Gold	Solder	Solder
B2	903-422J-51A2	Gold	Gold	Crimp	Solder

50Ω Receptacles

Straight Front Mount Bulkhead Jacks



Part Number	Body	Plating		Terminal Type
		Contact		
903-406J-51R	Gold	Gold		Solder Cup
903-402J-51R	Gold	Gold		Blunt Post

Angle Front Mount Bulkhead Jacks



Part Number	Body	Plating		Terminal Type
		Contact		
903-416J-51R	Gold	Gold		Solder Cup

Straight Rear Mount Bulkhead Jacks



Part Number	Body	Plating		Terminal Type
		Contact		
903-305J-51R	Gold	Gold		Solder Cup

Straight Recessed Mount Bulkhead Jacks

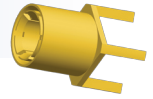


Part Number	Body	Plating		Terminal Type
		Contact		
903-407J-51R	Gold	Gold		Solder Cup

50Ω Printed Circuit Board Connectors

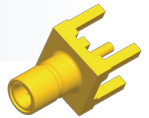
Straight Plugs

Part Number	Plating		Terminal Type	Description
	Body	Contact		
903-410P-53P	Gold	Gold	Blunt Post	For .360" (9mm) Bd. Spacing/Four Legs
903-409J-53P	Gold	Gold	Blunt Post	For .360" (9mm) Bd. Spacing/Four Legs



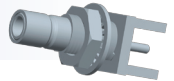
Straight Jacks

Part Number	Plating		Terminal Type	Description
	Body	Contact		
903-415J-51P	Gold	Gold	Blunt Post	Four Legs
903-499J-51P2	Gold	Gold	Blunt Post	Four Legs



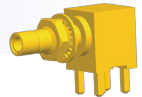
Straight Bulkhead Jacks

Part Number	Plating		Terminal Type	Description
	Body	Contact		
903-375J-53P	Nickel	Gold	Blunt Post	Four Legs
903-518J-51P	Gold	Gold	Blunt Post	Four Legs
903-515J-51P	Matte Tin	Gold	Blunt Post	Four Legs



Angle Bulkhead Jacks

Part Number	Plating		Terminal Type	Description
	Body	Contact		
903-413J-51A	Gold	Gold	Blunt Post	Four Legs/Leak Tight
903-373J-51A	Gold	Gold	Blunt Post	Four Legs/Leak Tight



Accessories

SMB/SMC Accessories: Jam Nuts

Part Number	Description
903-10408-1	SMB/SMC Gold Plated Nut Hex, Bulk pack version



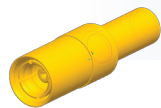
SMB/SMC Accessories: Lockwashers

Part Number	Description
903-10409-1	SMB/SMC Gold Plated Lockwasher, Bulk pack version



75 Ω Cable Connectors

Straight Plugs



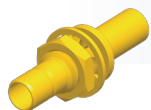
Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
B	903-502P-71S	Nickel	Gold	Crimp	Solder
B1	903-152P-71S3	Gold	Gold	Crimp	Solder
B1	903-575P-71S	Nickel	Gold	Crimp	Solder
B1	903-660P-71S	Gold	Gold	Crimp	Solder
B3	903-574P-71S	Nickel	Gold	Crimp	Solder
I2	903-152P-71S7	Gold	Gold	Crimp	Solder
I2	903-663P-71S	Gold	Gold	Crimp	Solder
K3	903-152P-71S	Gold	Gold	Crimp	Solder

Angle Plugs



Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
B1	903-661P-71A	Gold	Gold	Crimp	Solder
B1	903-662P-71A	Nickel	Gold	Crimp	Crimp

Straight Bulkhead Jacks



Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
B1	903-108J-71S	Gold	Gold	Crimp	Solder

75Ω Receptacles

Straight Bulkhead Jacks

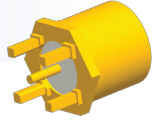


Part Number	Plating		Termination Type	Description
	Body	Contact		
903-382J-71R	Gold	Gold	Solder Cup	Rear Mount
903-675J-71S	Gold	Gold	Solder Cup	Panel Threaded

75Ω Printed Circuit Board Connectors

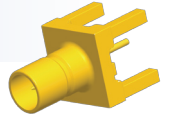
Straight Plugs

Part Number	Plating		Termination Type	Description
	Body	Contact		
903-522P-71P	Gold	Gold	Blunt Post	Four Legs, Slide-On



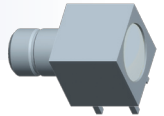
Straight Jacks

Part Number	Plating		Termination Type	Description
	Body	Contact		
903-523J-71P	Nickel	Gold	Blunt Post	Four Legs



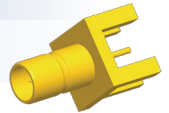
Angle Jacks

Part Number	Plating		Termination Type	Description
	Body	Contact		
903-585J-71A	Nickel	Gold	Blunt Post	Four Legs
903-519J-71P	Gold	Gold	Blunt Post	Four Legs



Edge Mount Jacks

Part Number	Plating		Termination Type	Description
	Body	Contact		
903-518J-71P	Gold	Gold	Blunt Post	Four Legs



Cable Group	Cable Type
A	RG-178, 196
B	RG-174, 188A, 316, Belden 7805
B1	RG-179, 187, Belden 9221
B2	RD-188/U, RD-316/U
B3	RD-179/U, AT&T 19224L2
C	RG-58, 58A, 58C, 141, 303, LMR195, Belden 7806A, 9907
C1	RG-55, 142, 223, 400
C2	LMR200, Belden 7807A
D	RG-58/U Plenum, Thinnet, RG-122/U, Belden 88240, 89907
E	RG-59, 62, 140, 210, Belden 8241, 8263, 8279, 9209
E1	RG-59/U 20 AWG center conductor, Belden 1426A, 1505A, 9100, 9278
E2	RD-59/U, Belden 8281, 9141, 9231
E3	RG-59/U Quad Shield, Belden 1152A
F	RG-59/U Plenum, Belden 1560A, 9259, 82259, 89259, 88241
F1	RG-59/U Plenum 20 AWG center conductor, Belden 82108
G1	RG-6, 143, 212
G2	8X, LMR240, Belden 7808A, 9258
G3	LMR400, Belden 7810A, 8214, 9913
G4	RG-8, 8A, 9, 87A, 213, 214, 225, 393
G5	RD-6/U
H	RG-11
H1	Belden 1694A, 9248
H2	Belden 1859A, 7731, 8213, 9292
H3	RG-54A/U
I	AT&T 734A, Belden 1505A
I2	AT&T 735A, Belden 735A1
J	Quad 59 headend cable
K	LMR600
K2	Belden 1695A
K3	RG-122, 180, 195, Belden 1855, 1865A, 8218
L	.141 semi-rigid, RG-402/U
L2	.085, .086, .087 semi-rigid, RG-405/U
L3	.250 semi-rigid
L4	.047 semi-rigid, Belden 1674
M	1/2 inch annular corrugated
M1	1 1/4 inch annular corrugated
M2	1 5/8 inch annular corrugated
M3	7/8 inch annular corrugated
N	1/4 Helical
N1	3/8 Helical
N2	1/2 Helical
N3	7/8 inch SFC
P1	.81 mm OD micro-cable
P2	1.13 mm OD micro-cable, TCB-068
P3	1.32 mm OD micro-cable
P4	1.37 mm OD micro-cable