

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 4 GHz with a snap-on connector design and utilizes die cast components on non-critical areas to provide a low-cost solution.

The SMC name derives from SubMiniature C (the third subminiature design). The SMC design was developed in the 1960's. SMC has threaded coupling with 10-32 threads. Available in 50 Ω impedance, the SMC Series utilizes die cast components on non-critical areas to provide a low cost solution.

Features/Benefits

SMB

- 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.

SMC

- Broadband performance with low reflection DC to 10 GHz
- Conforms to the interface dimensions of MIL-STD-348
- 10-32 screw-on (threaded) coupling mechanism allows performance to 10GHz with low reflection.
- Right Angle connectors available in one piece construction

Applications

SMB

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

SMC

- Antennas
- Automotive (GPS)
- Base Stations
- Cable Assemblies
- Instrumentation
- Video Systems
- Process Controls
- Radio Boards
- Telecom
- Test and Measurement

50 Ω SMB Specifications

Electrical

Impedance	50 Ω
Frequency Range	0-4 GHz with low reflection; usable to 10.0 GHz
Voltage Rating for RG-188/U Cable	335 volts at sea level and 85 volts at 70,000 feet
Dielectric Withstanding Voltage	RG-196: 750 VRMS; RG-188: 1,000 VRMS
VSWR	Straight connector, RG-196/U: 1.30 + .04 f (GHz) Right angle connector, RG-196/U: 1.45 + .06 f (GHz) Straight connector, RG-188/U: 1.25 + .04 f (GHz) Right angle connector, RG-188/U: 1.35 + .04 f (GHz)
Contact Resistance	Center contact: 6.0 mΩ initial, 8.0 after environmental; Outer contact: 1.0 mΩ initial, 1.5 after environmental; Braid to body: 1.0 mΩ initial, after environmental N/A
Insulation Resistance	1,000 MΩ minimum
Insertion Loss	Straight connector: 0.30 dB @ 1.5 GHz Right angle connector: 0.60 dB @ 1.5 GHz
RF Leakage	-55 dB minimum @ 2-3 GHz

Mechanical

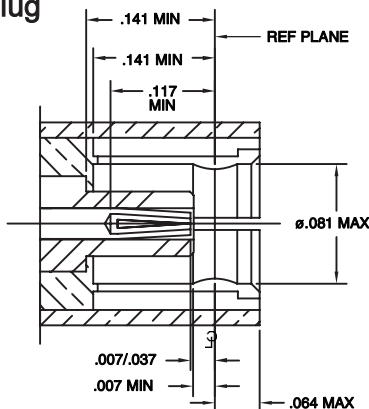
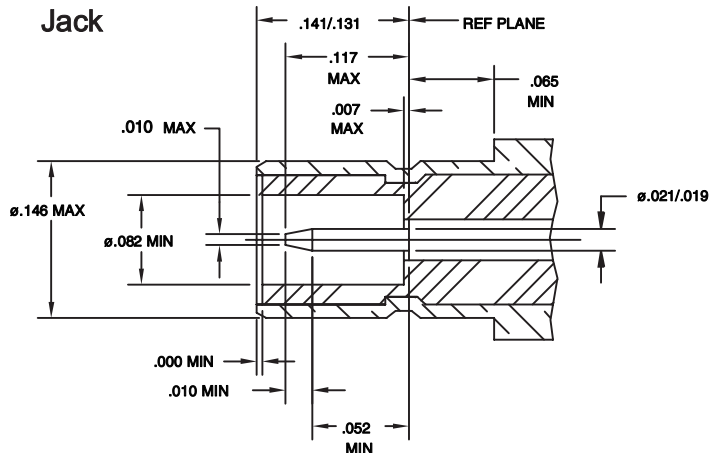
Mating	Snap-on coupling per MIL-STD-348
Braid/Jacket Cable Affixment	Hex crimp
Center Conductor Cable Affixment	Solder
Contact Captivation	All types unless noted otherwise
Cable Retention	Equal to breaking strength of cable employed
Engagement Forces	Engagement: 14 lbs maximum Disengagement: 2 lbs minimum After 500 matings, 14 lbs maximum engagement and disengagement
Connector Durability	500 mating cycles minimum

Material

Center Contact	Female: beryllium copper, gold-plated Male: brass or beryllium copper, gold-plated
Outer Contact Plating	Nickel or gold plating as indicated
Body	Brass per QQB-626, or zinc per ASTM B86-71
Body Plating	Nickel or gold plating as indicated
Insulator	TFE
Crimp Ferrule	Annealed copper alloy

Environmental

Temperature Range	-65°C to + 165°C
Thermal Shock	MIL-STD-202 method 107, test condition B (except high temperatures @ 200°C)
Shock	MIL-STD-202 method 202, method 13, snap-on, test condition B; 75 G's @ 6 milliseconds ½ sine
Vibration	MIL-STD-202 method 204, snap-on, test condition B; (15 G's)
Corrosion	MIL-STD-202 method 101, test condition B. 5% salt solution

Plug**Jack**

SMB Specifications

Electrical

Impedance	50 Ω
Frequency Range	0-4 GHz with low reflection; usable to 10.0 GHz
Voltage Rating	Sea level: 335 volts 70,000 feet: 85 volts
Dielectric Withstanding Voltage (max).	750 VRMS RG-196 1000 VRMS for RG-188 type
VSWR	RG-196/U series: Straight connector, 1.30 + .04 f (GHz) Right angle connector, 1.45 + .06 f (GHz) RG-188/U series: Straight connector, 1.25 + .04 f (GHz) Right angle connector, 1.35 + .06 f (GHz)
Contact Resistance	Center contact: Initial, 6.0 m Ω After environmental, 8.0 m Ω Outer contact: Initial, 1.0 m Ω After environmental, 1.5 Ω Braid to body: Initial, 1.0 m Ω After environmental, N/A
Insulation Resistance	1,000 M Ω minimum
Insertion Loss	Straight connectors: 0.30 dB @ 1.5 GHz Right angle connectors: 0.60 dB @ 1.5 GHz
RF Leakage	-55 dB minimum @ 2-3 GHz

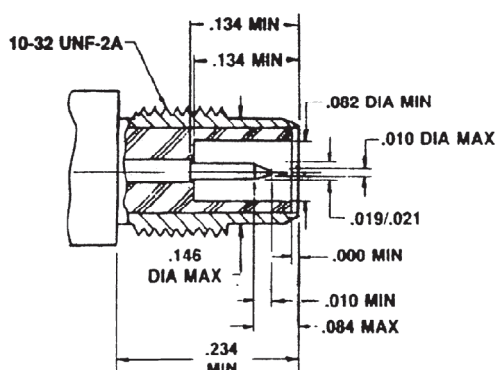
Mechanical

Bodies	Brass per QQB-626 or zinc per ASTM B86-71, as specified, nickel or gold plated as listed
Center Contacts	Female: beryllium copper, gold plated. Male: brass or beryllium copper, gold plated
Outer Contact	Nickel or gold plated as listed
Crimp Ferrules	Annealed copper alloys
Insulator	TFE

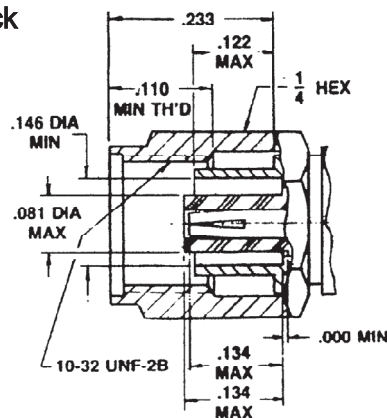
Environmental

Temperature Range	-65°C to + 165°C
Thermal Shock	MIL-STD-202 method 107 condition C
Vibration	MIL-STD-202 method 204 condition D
Shock	MIL-STD-202 method 213 condition C
Corrosion	MIL-STD-202 method 101 condition B

Plug



Jack

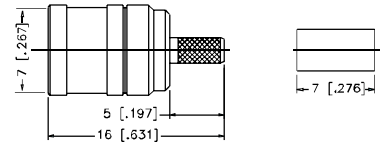


SMB/SMC Coaxial Connectors

Straight Crimp Plug - Standard and Miniature Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB6121A2-NT30G-1-50	01	Nickel	Teflon	50	3 or 4
SMB6121A2-3GT30G-1-50	01	Gold	Teflon	50	3 or 4
SMB6121A2-NT30G-1A-50	01A	Nickel	Teflon	50	3 or 4
SMB6121A2-3GT30G-1A-50	01A	Gold	Teflon	50	3 or 4
SMB6121A1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB6121A1-3GT30G-5-50	05A	Gold	Teflon	50	1 or 2
SMB6121A1-NT30G-5A-50	05A	Nickel	Teflon	50	2
SMB6121A1-3GT30G-5A-50	05A	Gold	Teflon	50	2
SMB6121A1-NT30G-14-50	14	Nickel	Teflon	50	1 or 2
SMB6121A1-3GT30G-14-50	14	Gold	Teflon	50	1 or 2
SMB6121AA-3GT30G-19-75 Mini 75 Ohm	19	Gold	Teflon	75	3
SMC Connectors					
SMC6121A2-3GT30G-1-50	01	Gold	Teflon	50	3 or 4
SMC6121A1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMC6121A1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2
SMC6121A1-3GT30G-5A-50	05A	Gold	Teflon	50	2

Note: Female center contact

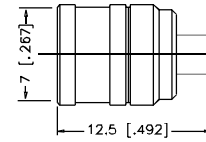


Assembly Instruction J - page 236

Straight Solder Plug - Semi-Rigid Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB6181A1-3GT30G-11-50	11	Gold	Teflon	50	N/A
SMB6181A1-3GT30G-13-50	13	Gold	Teflon	50	N/A

Note: Female center contact

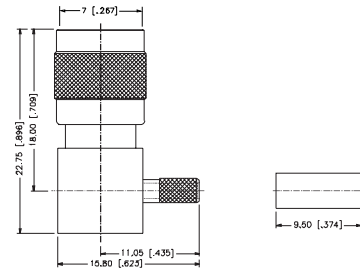


SMB6181A1-3GT30G-13-50

Assembly Instruction C - page 229
Assembly Instruction E - page 231

Right Angle Crimp Plug - Snap Lock - Flexible Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB6112L1-N/3GT30G-16-50	16	Nickel	Teflon	50	3
SMB6112L1-N/3GT30G-16A-50	16A	Nickel	Teflon	50	3

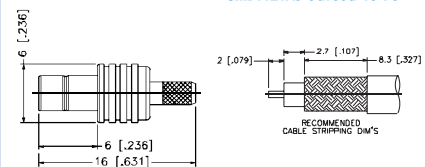
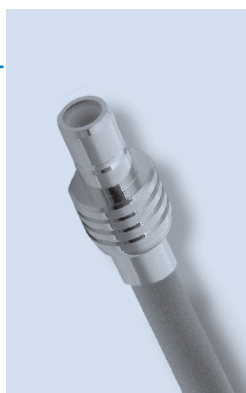


Assembly Instruction I - page 235

Straight Crimp Jack - Standard and Miniature Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1121A1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB1121A1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2
SMB1121A1-NT30G-5A-50	05A	Nickel	Teflon	50	2
SMB1121A1-3GT30G-5A-50	05A	Gold	Teflon	50	2
SMB1121A1-NT30G-14-50	14	Nickel	Teflon	50	1 or 2
SMB1121A1-3GT30G-14-50	14	Gold	Teflon	50	1 or 2
SMC Connectors					
SMC1121G1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMC1121G1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2

Note: Male center contact

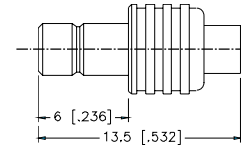


SMB1121A6-3GT30G-19-75

Assembly Instruction J - page 236

Straight Solder Jack - Semi-Rigid Cable

P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB1181A1-3GT30G-11-50	11	Gold	Teflon	50	N/A
SMB1181A1-3GT30G-13-50	13	Gold	Teflon	50	N/A

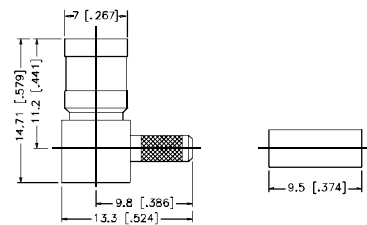


Note: Male center contact

Assembly Instruction E - page 231
Assembly Instruction C - page 229

Right Angle Crimp Plug - Standard and Miniature Cable

P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB6112A1-NT30G-1-50	01	Nickel	Teflon	50	3 or 4
SMB6112A1-3GT30G-1-50	01	Gold	Teflon	50	3 or 4
SMB6112D1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB6112D1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2
SMB6112A1-NT30G-5A-50	05A	Nickel	Teflon	50	2
SMB6112A1-3GT30G-5A-50	05A	Gold	Teflon	50	2
SMB6112A1-NT30G-14-50	14	Nickel	Teflon	50	1 or 2
SMB6112A1-3GT30G-14-50	14	Gold	Teflon	50	1 or 2
SMB6112AG-3GT30G-19-75	19	Gold	Teflon	75	3
Mini 75 Ohm					
SMC Connectors					
SMC6112A1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMC6112A1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2

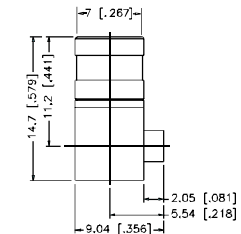
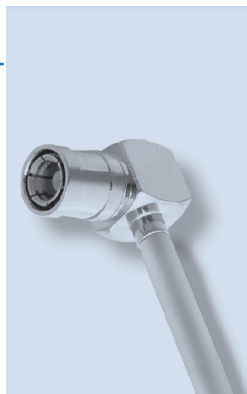


Note: Female center contact

Assembly Instruction I - page 235

Right Angle Solder Plug - Semi-Rigid Cable

P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB6182A1-3GT30G-11-50	11	Gold	Teflon	50	N/A
SMB6182A1-3GT30G-13-50	13	Gold	Teflon	50	N/A

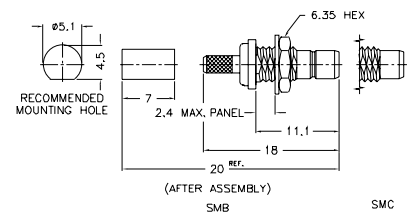


Note: Female center contact

Assembly Instruction F - page 232

Bulkhead Feedthrough Crimp Jack - Standard and Miniature cable

P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB1421A1-002-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB1421A1-NT30G-3-50	03	Nickel	Teflon	50	1 or 2
SMB1421A1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2
SMB1421A1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB1421A1-3GT30G-5A-50	05A	Gold	Teflon	50	2
SMB1421A1-NT30G-14-50	14	Nickel	Teflon	50	1 or 2
SMB1421A1-3GT30G-14-50	14	Gold	Teflon	50	1 or 2
SMC Connectors					
SMC1421G1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMC1421A1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2

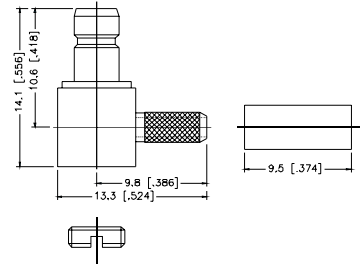


Note: Male center contact

Assembly Instruction J - page 236

Right Angle Crimp Jack - Miniature Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1112A1-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB1112A1-3GT30G-5-50	05	Gold	Teflon	50	1 or 2

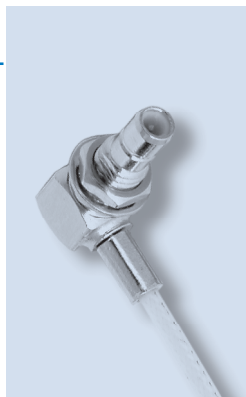


Note: Male center contact

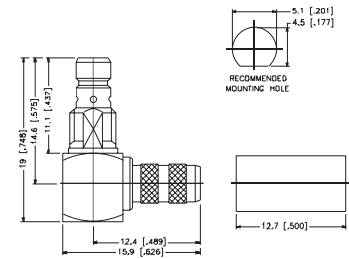
Assembly Instruction I - page 235

Right Angle Bulkhead Crimp Jack - Standard and Miniature Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1412A1-NT30G-1-50	01	Nickel	Teflon	50	3 or 4
SMB1412A1-3GT30G-1-50	01	Gold	Teflon	50	3 or 4
SMB1412A2-3GT30G-1A-50	01A	Gold	Teflon	50	3 or 4
SMB1412A1-001-NT30G-5-50	05	Nickel	Teflon	50	1 or 2
SMB1412A1-001-3GT30G-5-50	05	Gold	Teflon	50	1 or 2
SMB1412A1-NT30G-5A-50	05A	Nickel	Teflon	50	2
SMB1412A1-3GT30G-5A-50	05A	Gold	Teflon	50	2
SMB1412A1-3GT30G-14-50	14	Gold	Teflon	50	1 or 2



SMB1412A1-NT30G-1-50, SMB1412A1-3GT30G-1-50,
SMB1412A2-NT30G-1A-50, SMB1412A2-NT30G-1A-50

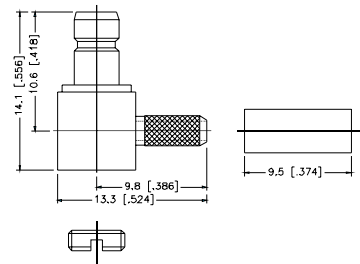


Note: Male center contact

Assembly Instruction I - page 235

Right Angle Solder Jack - Miniature Semi-Rigid Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1112A1-3GT30G-13-50	13	Gold	Teflon	50	N/A

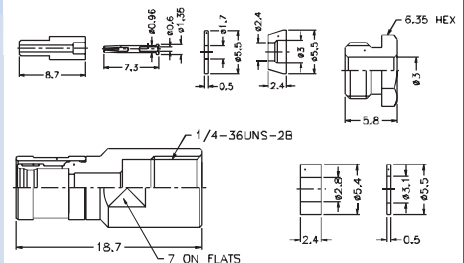


Note: Male center contact

Assembly Instruction F - page 232

Straight Clamp plug - Miniature Cable

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB6141C1-NT30G-5-50	05	Nickel	Teflon	50	
SMB6141C1-3GT30G-5-50	05	Gold	Teflon	50	

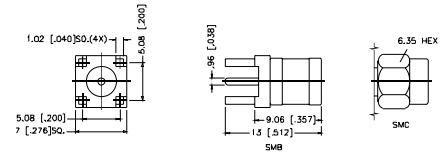
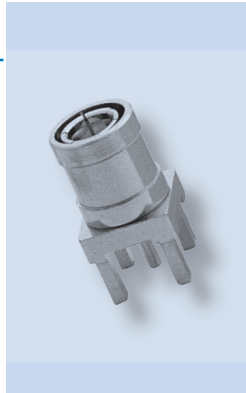


Note: Female center contact

Assembly Instruction M - page 239

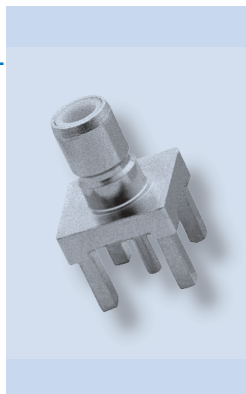
Straight Plug for P.C. Board

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB6251B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB6251B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMB6251B4-001-NT30G-50	N/A	Gold	Teflon	50	N/A
Surface Mount					
SMC Connectors					
SMC6251B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC6251B1-3GT30G-50	N/A	Gold	Teflon	50	N/A

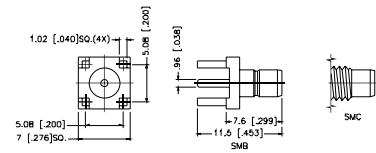


Straight Jack for P.C. Board

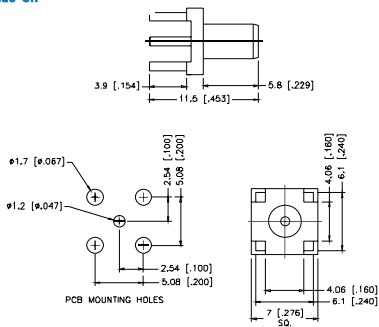
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1251B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1251B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMB1251A1-3GT30G-50	N/A	Gold	Teflon	50	N/A
Low cost version					
SMB1251B4-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMB1251B4-001-3GT30G-50	N/A	Gold	Teflon	50	N/A
Surface Mount					
SMB1251A4-3GT30G-50	N/A	Gold	Teflon	50	N/A
Surface Mount					
Low cost version					
SMS1251B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
Slide-On					
SMC connectors					
SMC1251B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC1251B1-3GT30G-50	N/A	Gold	Teflon	50	N/A



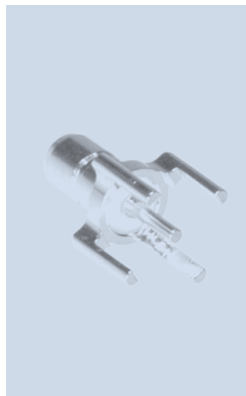
Snap-On



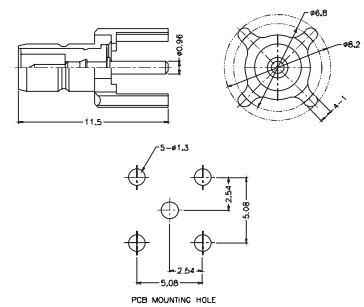
Note: Male center contact Slide-On



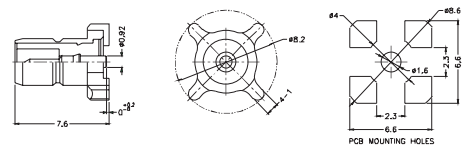
Low cost version



Low cost version



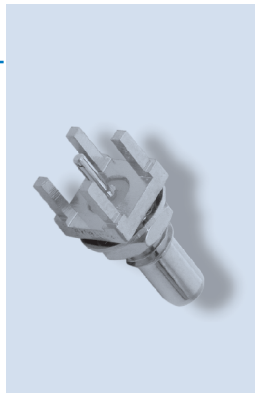
SMB1251A4-3GT30G-50



Low cost version

Straight Bulkhead Jack for P.C. Board

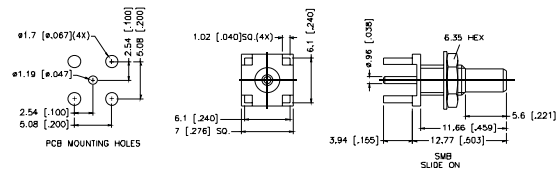
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1451B1-004-NT30G-50 Slide-On	N/A	Nickel	Teflon	50	N/A
SMB1451B1-003-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1451B1-003-3GT30G-50	N/A	Gold	Teflon	50	N/A



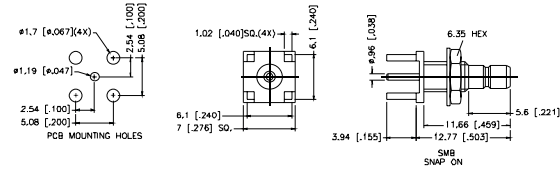
Assembly Instruction B - page 228

Note: Male center contact

Snap-On

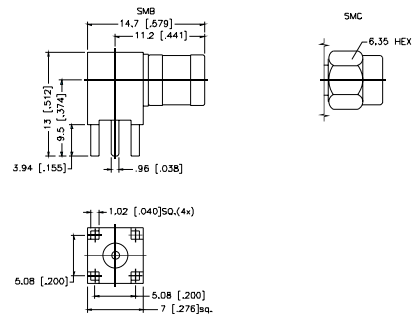
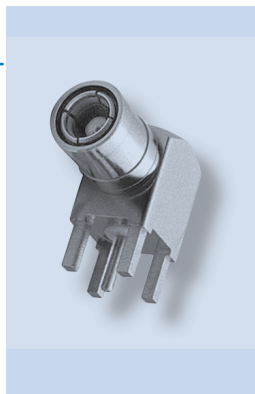


Slide-On



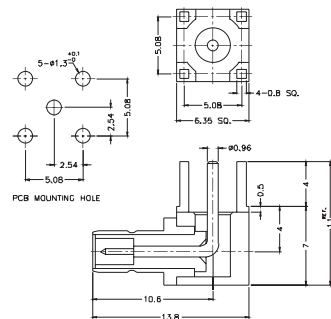
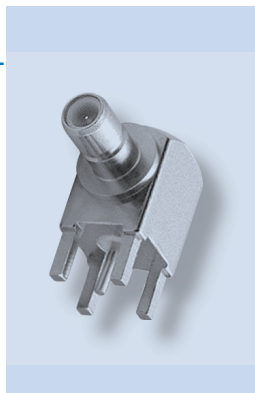
Right Angle Plug for P.C. Board

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB6252B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB6252B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMC Connectors					
SMC6252B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC6252B1-3GT30G-50	N/A	Gold	Teflon	50	N/A



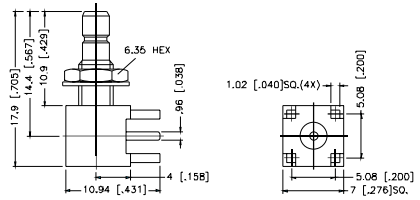
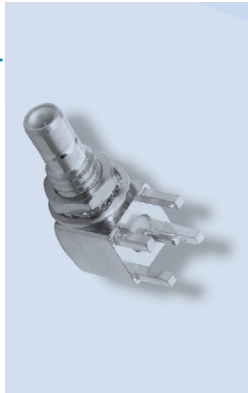
Right Angle Jack for P.C. Board

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1252B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1252B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMB1252B1-TT30G-50	N/A		Teflon	50	N/A
SMC Connectors					
SMC1252B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC1252B1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Right Angle Bulkhead Jack for PC. Board

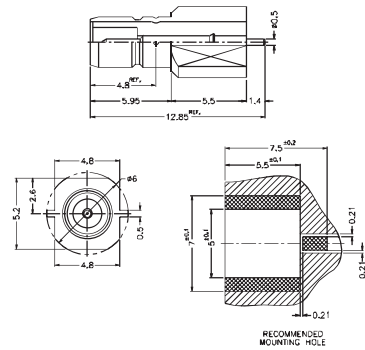
P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB74971-001-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

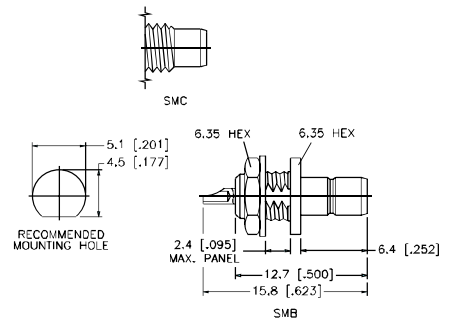
SMT Jack Edge-Card

P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB1251S1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Bulkhead Jack Receptacle - Front Mount

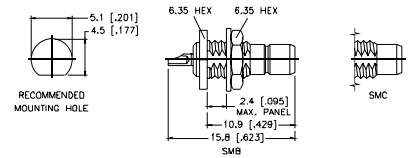
P.N.	Cable Group	Plt.	Ins.	Imp.	Crimp Tool
SMB1351B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1351B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMC Connectors					
SMC1351B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC1351B1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

Bulkhead Jack Receptacle - Rear Mount

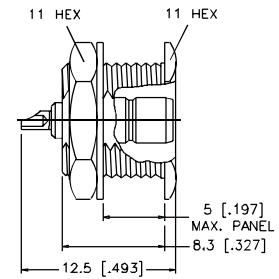
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1451B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1451B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMC Connectors					
SMC1451B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC1451B1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

Bulkhead Recessed Jack Receptacle

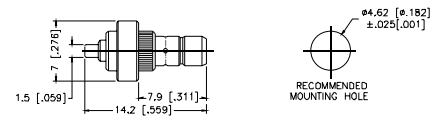
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1351B9-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1351B9-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

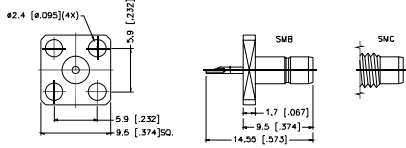
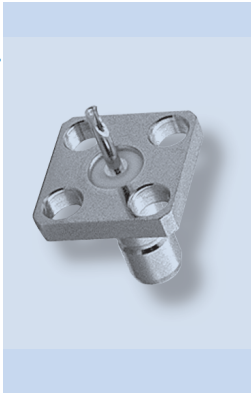
Push Fit Jack Receptacle

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1051A2-003-3GT30G-50	N/A	Gold	Teflon	50	N/A



Panel Mount Jack Receptacle - 4 Hole Square Flange

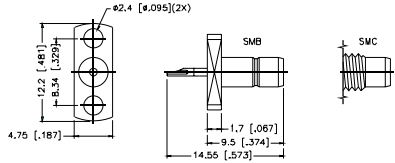
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1551A1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1551A1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMC Connectors					
SMC1551A1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC1551A1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

Panel Mount Jack Receptacle - 2 Hole Flange

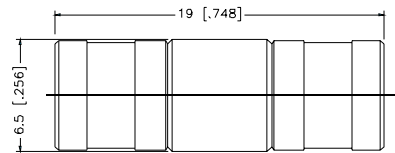
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB1551B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB1551B1-3GT30G-50	N/A	Gold	Teflon	50	N/A
SMC Connectors					
SMC1551B1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMC1551B1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

Plug-to-Plug Adapter

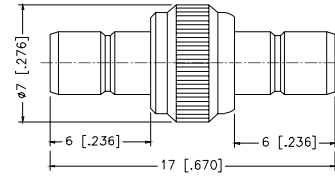
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB7071A1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB7071A1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Female center contact

Jack-to-Jack Adapter

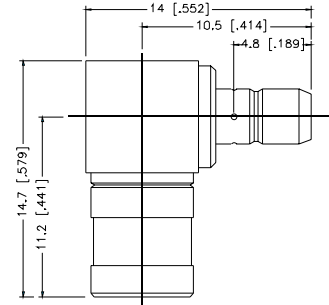
P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB2071A1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB2071A1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact

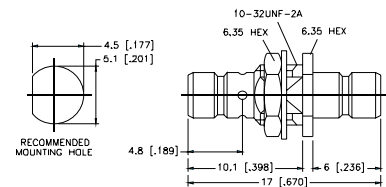
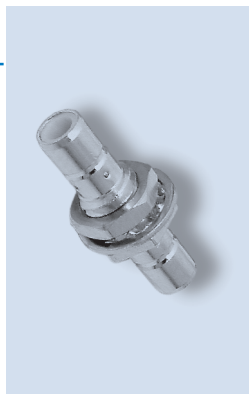
Plug-to-Jack Adapter - Right Angle

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB5072A1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB5072A1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Jack-to-Jack Adapter - Bulkhead

P.N.	Cable Group	Pit.	Ins.	Imp.	Crimp Tool
SMB2471A1-NT30G-50	N/A	Nickel	Teflon	50	N/A
SMB2471A1-3GT30G-50	N/A	Gold	Teflon	50	N/A



Note: Male center contact