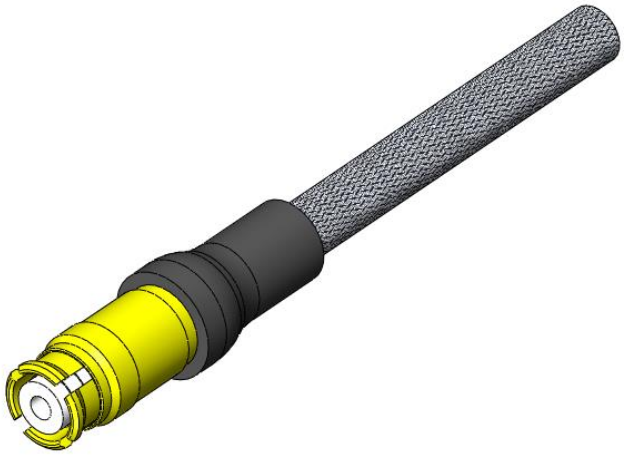
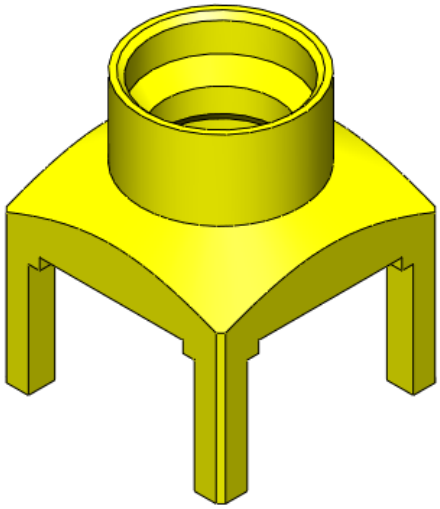
Series: SMP 50Ω SMP Jacks / Plugs Adaptor

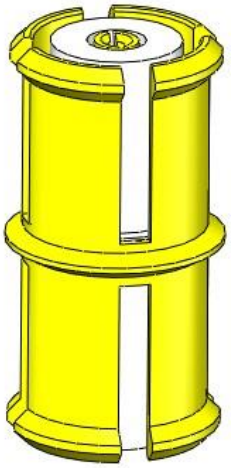
SMP – Jack, Straight Orientation, Cable Terminated



SMP – Full detent Plug, Straight Orientation, PCB Terminated



Bullet Adaptor



Other configurations available for:

Plug Interface: Limited detent, Smooth bore, Catcher's mitt

Bullets, Through-hole, surface mount, edge mount, panel mount and mixed technology

Termination to various cable types

See www.samtec.com for more information.

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1.0 SCOPE

1.1 This specification covers performance, testing and quality requirements for Samtec SMP Series. These connectors are available in vertical, edge mount and right angle. All information contained in this specification is for a straight jack cable assembly to a straight full detent plug cable connector unless otherwise noted.

2.0 DETAILED INFORMATION

2.1 Product prints, footprints, catalog pages, test reports and other specific, detailed information can be found at http://www.samtec.com/rf/50-ohm/smp.aspx.

3.0 TESTING

3.1

ITEM	RF405	RF25M	RF25S	BE25M	BE25S
Withstanding voltage	500	500	500	500	500
Operating temperature	-40 to 125	-65 to 165	-65 to 165	-65 to 165	-65 to 165
IP66-IP68 testing	N/A	N/A	N/A	N/A	N/A

Note: IP66-IP68 testing at the panel interface only.

3.2 Electrical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Withstanding Voltage	EIA-364-20 (No Flashover, Sparkover, or Breakdown)	See Section 3.1	Pass
Insulation Resistance	EIA-364-21 (5000 MΩ minimum)	15,000 MΩ	Pass
Contact Resistance (LLCR)	EIA-364-23	Δ 15 mΩ maximum (Samtec defined)/ No damage	Pass

3.3 Mechanical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Durability	EIA-364-09C	100 cycles (w/Env.) 1000 cycles (w/o Env)	Pass
Random Vibration	EIA-364-28 Condition V, Letter B 7.56 G 'RMS', 50 to 2000 Hz, 2 hours per axis, 3 axis total , PSD 0.04	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum Event Detection: No interruption > 1.0 microsecond	Pass
Mechanical Shock	EIA-364-27 100 G, 6 milliseconds, half sine, 12.3 ft/s, 3 shocks/direction, 3 axis (18 total shocks)	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum Event Detection: No interruption > 1.0 microsecond	Pass
Normal Force	EIA-364-04	30 grams minimum for gold interface	Pass

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3.4 Environmental:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Thermal Shock	EIA-364-32 Thermal Cycles: 100 (30 minute dwell) Hot Temp: 85°C Cold Temp: -55°C Hot/Cold Transition: Immediate	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 825 VAC IR: >15,000 MΩ	Pass
Thermal Aging (Temp Life)	EIA-364-17 Test Condition 4 @ 105°C Condition B for 250 hours	Visual Inspection: No Damage LLCR: Δ 15 mΩ	Pass
Cyclic Humidity	EIA-364-31 Test Temp: 25°C to 65°C Relative Humidity: 90 to 95% Test Duration: 240 hours	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 825 VAC IR: >15,000 MΩ	Pass
Gas Tight	EIA-364-36 Gas Exposure: Nitric Acid Vapor Duration: 60 min. Drying Temp.: 50°C +/- 3°C Measurements: Within 1 hour of Exposure	LLCR: Δ 15 mΩ	Pass

4.0 HIGH SPEED PERFORMANCE

4.1 Frequency Range:

Cable type	RF405		RF25M		RF25S		BE25M		BE25S	
SMP Orientation	RA	ST	RA	ST	RA	ST	RA	ST	RA	ST
Frequency Range	0-20GHz	0-20GHz	0-20GHz	0-20GHz	0-20GHz	0-20GHz	0-20GHz	0-20GHz	0-20GHz	0-20GHz

4.2 Impedance: 50 ohm

4.3 Rating: up to 40 GHz

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5.0 PROCESSING RECOMMENDATIONS FOR REFLOW SOLDERED PARTS

5.1 Due to variances in equipment, solder pastes and applications (board design, component density, etc.), Samtec does not specify a recommended reflow profile for our connectors. The processing parameters provided by the solder paste manufacturer should be employed and can usually be found on their website.

All of Samtec's surface mount components are lead free reflow compatible and compliant with the profile parameters detailed in IPC/JEDEC J-STD-020 which requires that components be capable of withstanding a peak temperature of 260°C as well as 30 seconds above 255°C.

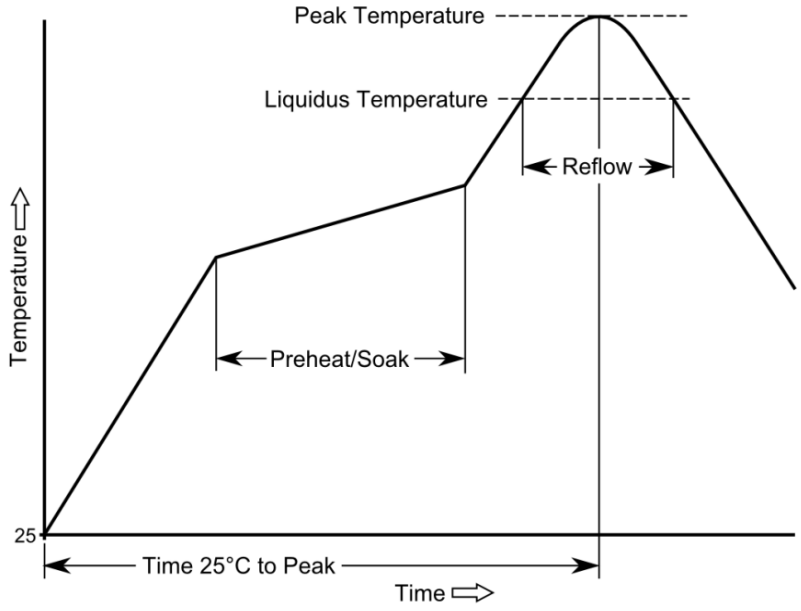
Samtec Recommended Temperature Profile Ranges (SMT)

Sn-Pb Eutectic Assembly

Preheat/Soak (100°C-150°C)	Max Ramp Up Rate	Reflow Time (above 183°C)	Peak Temp	Time within 5°C of 235°C	Max Ramp Down Rate	Time 25°C to Peak Temp
60-120 sec.	3°C/s max.	40-150 sec.	235°C	20 sec. max.	6°C/s max.	6 min. max.

Pb-Free Assembly

Preheat/Soak (150°C-200°C)	Max Ramp Up Rate	Reflow Time (above 217°C)	Peak Temp	Time within 5°C of 260°C	Max Ramp Down Rate	Time 25°C to Peak Temp
60-120 sec.	3°C/s max.	40-150 sec.	260°C	30 sec. max.	6°C/s max.	8 min. max.



5.1.1 These guidelines should not be considered design requirements for all applications. Samtec recommends testing interconnects on your boards in your process to guarantee optimum results.

5.2 Maximum Reflow Passes: The parts can withstand three reflow passes at a maximum component temperature of 260°C.

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5.3 Stencil Thickness: The stencil thickness is .006" (0,15mm).

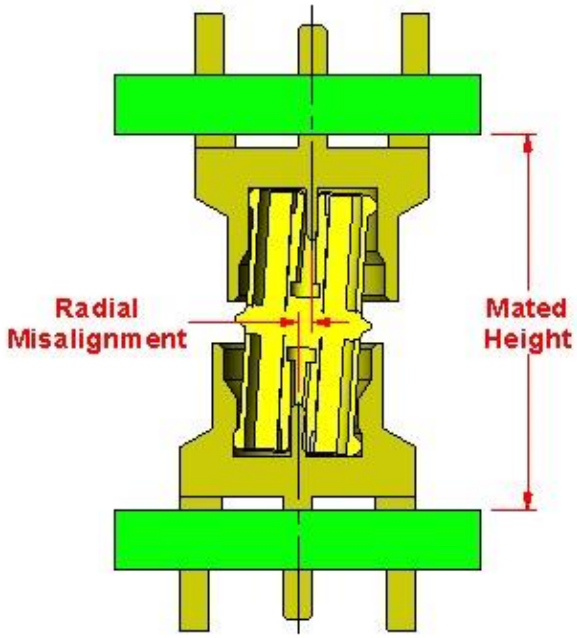
5.4 Placement: Machine placement of the parts is recommended.

5.5 Reflow Environment: Samtec recommends the use of a low level oxygen environment (typically achieved through Nitrogen gas infusion) in the reflow process to improve solderability.

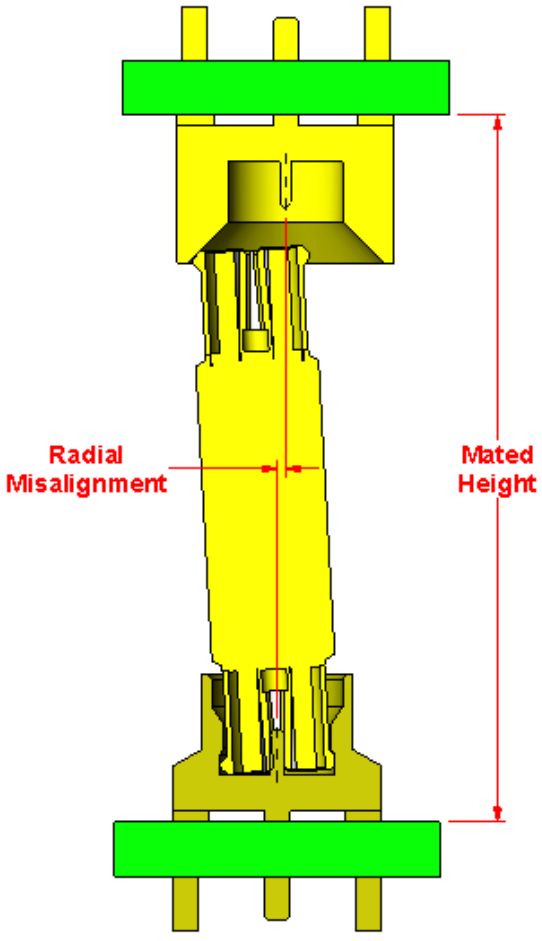
5.6 Cleaning: Samtec, Inc. has verified that our connectors may be cleaned in accordance with the solvents and conditions designated in the EIA-364-11 standard.

5.7 Misalignment information:

Bullet Length	Radial Misalignment	Axial Misalignment	Mated Height
-0645	+/-0.50mm	+/-0.25mm	9.55mm
-1450	+/-0.50mm	+/-0.25mm	17.60mm



SMP-PS-P-XX-ST-TH2 MATED WITH
SMP-J-B-XX-ST-0645 AND
SMP-PF-P-XX-ST-TH2



SMP-PC-P-XX-ST-TH2 MATED WITH
SMP-J-B-XX-ST-1450 AND
SMP-PF-P-XX-ST-TH2

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6.0 APPLICATION INFORMATION

6.1 Min Cable Bend Radius: .125 in

6.2 Cable Retention: 15 LBS (Typical)

6.3 Engagement Force: -PF: 15 lbs. max; -PL: 10 lbs. max; -PS & -PC: 2 lbs. max
Disengagement Force: -PF: 2 lbs. max; -PL: 2 lbs. max; -PS & -PC: 0.5 lbs. max

7.0 ADDITIONAL RESOURCES

7.1 For additional mechanical testing or product information, contact our Customer Engineering Support Group at **CES@samtec.com**

7.2 For additional information on high speed performance testing, contact our Signal Integrity Group at **SIG@samtec.com**

7.3 For additional processing information, contact our Interconnect Processing Group at **IPG@samtec.com**

7.4 For RoHS, REACH or other environmental compliance information, contact our Product Environmental Compliance Group at **PEC@samtec.com**