



M/A-COM

1307066

Patent Pending



SMT|QuickGrip™

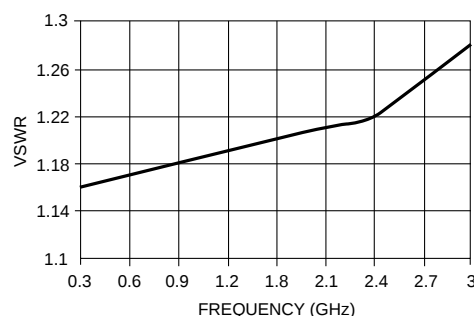
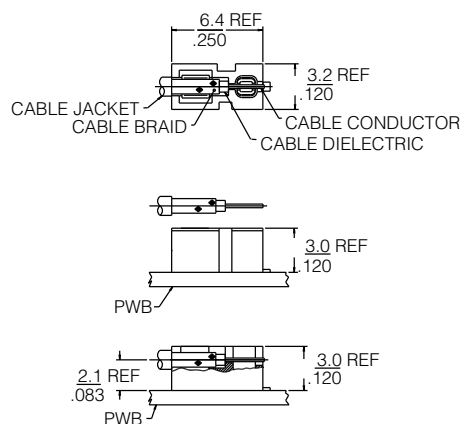
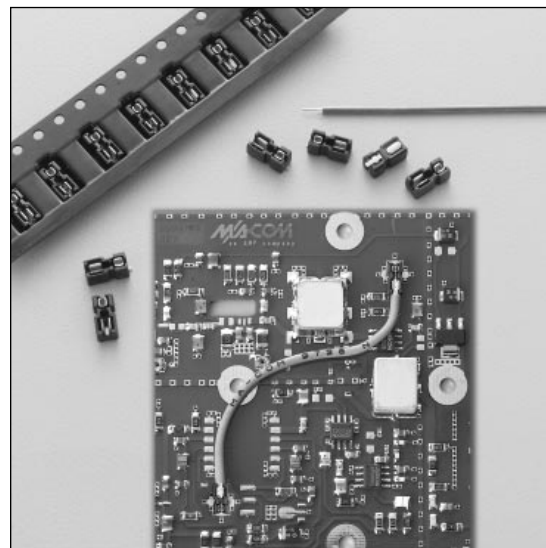
- Solderless Cable Termination
- 3mm Mated Height
- Excellent Cable Retention
- Usable With Flexible and Semi-Rigid Micro-Coaxial Cables
- Tape and Reel Packaging

M/A-COM's revolutionary SMT|QuickGrip™ product line is designed to meet the growing demand for a reliable, low cost system for direct termination of coax to a printed circuit board (PCB). SMT|QuickGrip™ technology eliminates the requirement to connectorize the coaxial cable, reducing assembly times and, therefore, cost. The SMT|QuickGrip™ surface mount device occupies less PCB area than conventional through hole coaxial connectors. An innovative microstrip mounting pattern and cable receptacle design ensures excellent grounding and PCB retention. The SMT|QuickGrip™ cable termination system stands a mere 3mm off the board when mated, allowing for closer pitch/spacing when designing a system. The SMT|QuickGrip™ provides optimal cable retention for applications where shock, vibration, and/or cable flexure may be encountered. This unique RF design accepts both flexible and semi-rigid micro-coaxial cables while delivering exceptional RF performance up to 3GHz.

These features make this system extremely versatile for design engineers and offer a reliable, cost effective alternative to direct soldering of cable to the PCB. The cable is inserted into the device by means of a simple self-aligning hand tool, eliminating the requirement for skilled personnel. This system removes the possibility of damaged PCBs and cables which are common quality issues associated with direct solder, while providing superior RF performance. The SMT|QuickGrip™ accommodates multiple cable insertions allowing easy replacement of cables for repairs. This receptacle is designed for high volume assembly using surface mount technology and is available in tape and reel packaging for pick and place board assembly. Pre-stripped cables and inter-series cable pigtails are available as turnkey solutions for your application needs (i.e.: for use in multi-board applications, for connecting antennas to the PCB, or point to point transmission on the same PCB).

The SMT|QuickGrip™ cable termination system is ideal for wireless surface mount applications in handsets, pagers and personal digital assistants (PDA). The SMT|QuickGrip™ mechanical and electrical performance, coupled with its ease of use, ensure it to be a high quality, reliable solution for current and future interconnect needs. M/A-COM is an ISO9001 certified manufacturer and maintains an SPC controlled manufacturing environment. Please call your local Sales or Distribution office for additional information and qualification samples today.

Note: Unless otherwise specified, all dimensions are mm/in.



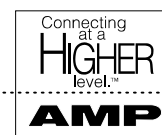
Typical VSWR using SMT|QuickGrip™ with Omni-Flex 200 Cable

V3.00

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Requirement		Detail	
General			
Materials			
Housing:		Polyphenylene Sulfide	
Contacts:		Copper Alloy	
Finishes			
Contacts:		Gold Plate over Nickel	
Electrical			
Frequency Range:		DC - 3GHz	
Impedance:		Usable with 50 & 75 Ohm systems	
Insertion Loss:		.08 $\sqrt{f}$ GHz	
DWV:		750 VRMs	
VSWR:		1.3:1@ 3GHz (Omni-Flex 100, 200 and .047 Semi-Rigid)	
		1.4:1 @ 3GHz (.034 Semi-Rigid)	
Mechanical			
Connector Durability:		5 mating cycles min. (receptacle only)	
Tape and Reel Packaging:		16mm per EIA-481	
Force to Disengage by Cam-Out (grams):		Omni-Flex 100 -	469 typical
		Omni-Flex 200 -	543 typical
		.034 Semi-Rigid -	852 typical
		.047 Semi-Rigid -	1066 typical
Environmental			
Temperature Rating:		-40°C(-40°F) to 105°C(221°F) when mated with PVC cable	
		-40°C(-40°F) to 125°C(257°F) when mated with Teflon cable	
Resistance to Solder Heat:		Infrared, convection, and vapor phase solderable (receptacle only). Maximum reflow time/temperature not to exceed 260°C for 3 minutes.	
Cable Information			
		Omni-Flex 100 (OSMT)	Omni-Flex 200 (SSMT)
Materials:		PVC Flexible Cable (105°C)	FEP Flexible Cable (200°C)
Jacket:		Polyvinyl Chloride	Fluorinated Ethylene Propylene
Shield:		Silver plated copper wire, 38 AWG, 90% min. coverage	Silver plated copper wire, 44 AWG, 90% min. coverage
Dielectric:		PFA or FEP	PTFE (Polytetrafluoroethylene)
Center Conductor:		Silver Plated Copper Clad Steel, 30 AWG	Silver Plated Copper Clad Steel, 30 AWG
Minimum Bend Radius:		9.5mm (.375 inch)	6.35mm (.250 inch)
Insertion Loss (PVC and FEP cable only):		0.4 dB/ft., 1.3dB/m @ 500 MHz 0.6 dB/ft., 2.0dB/m @ 1 GHz 0.9 dB/ft., 3.0dB/m @ 2 GHz	0.4 dB/ft., 1.3dB/m @ 500 MHz 0.5 dB/ft., 2.0dB/m @ 1 GHz 0.9 dB/ft., 3.0dB/m @ 2 GHz
Center Conductor Resistance:		.26 Ohms per foot average	.26 Ohms per foot average

V3.00

Inter-Series Cable Assemblies

Omni-Flex 100 (OSMT Cable)	Omni-Flex 200 (SSMT Cable)	Connector Type
9970-4XXX-01	9980-4XXX-01	SMA Straight Plug
9970-4XXX-02	9980-4XXX-02	SMA Bulkhead Jack
9970-4XXX-03	9980-4XXX-03	SMB Straight Plug
9970-4XXX-04	9980-4XXX-04	SMB Bulkhead Jack
9970-4XXX-05	9980-4XXX-05	SMB Right Angle Jack
9970-4XXX-06	9980-4XXX-06	OSX Straight Plug
9970-4XXX-07	9980-4XXX-07	OSX Bulkhead Jack
9970-4XXX-08	9980-4XXX-08	OSX Right Angle Plug
9970-4XXX-09	9980-4XXX-09	50 Ohm Coaxial Contact Receptacle (#8)



1. To order, replace XXX in part number with cable length in millimeters (ie: 9970-4100-05 would be an Inter-Series Pigtail with an SMB Right Angle Jack 100mm long). Cables should be ordered in 5mm increments.

2. Cable length tolerances:

Length 'A' mm (In)	Tolerance mm (In)
50 to 100mm (3.94)	±3 (± .12)
101 to 500mm (3.98 to 19.69)	±5 (± .20)
Over 500 (19.69)	±10 (± .39)

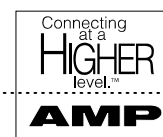
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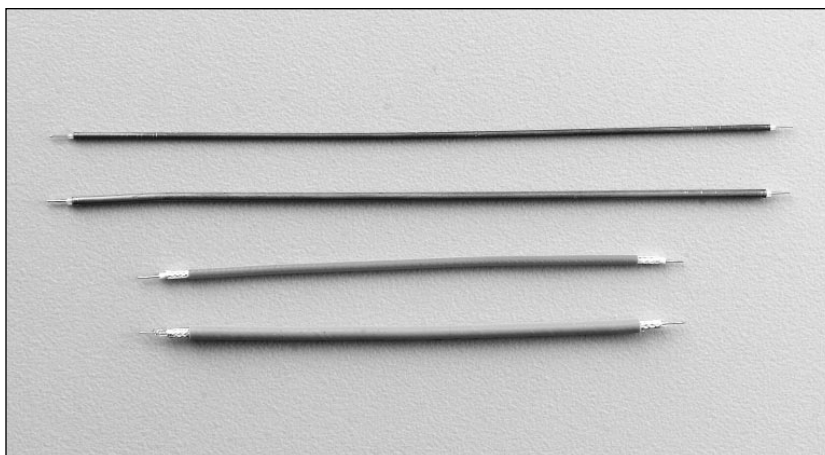
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Pre-Stripped Cables

Omni-Flex 100 (OSMT Cable)	Omni-Flex 200 (SSMT Cable)	Description
9970-1XXX-23	9980-1XXX-23	Pre-stripped Omni-Flex Cables for use with SMT QuickGrip™

.034 Semi-Rigid	.047 Semi-Rigid	Description
9921-1XXX-23	9922-1XXX-23	Pre-stripped Semi-Rigid Cables for use with SMT QuickGrip™



1. To order, replace XXX in part number with cable length in millimeters (ie: 9970-4100-05 would be an Inter-Series Pigtail with an SMB Right Angle Jack 100mm long). Cables should be ordered in 5mm increments.

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V3.00

Packaging

- Bulk packed or packaged in plastic carrier tape on a reel
- Available on 700 piece or 2000 piece plastic reel
- Sealed plastic carrier tape in accordance with EIA-481-1
- Conductive anti-static tape material to prevent static charge entry to electronic assembly or equipment
- Recommended max. storage temperature of plastic carrier tape: 40°C (140°F), 50% relative humidity max.

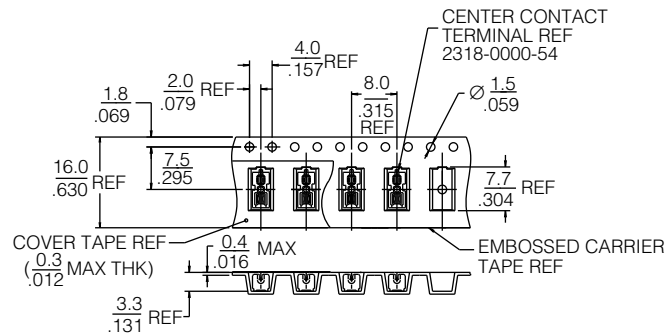


Figure 1

SMT|QuickGrip™ Surface Mount Plug Receptacle

Automatic Placement

The SMT|QuickGrip™ surface mount plug receptacle is compatible with industry standard automatic placement equipment utilizing pneumatic (vacuum) part pick-up. SMT|QuickGrip™ plug surface mount receptacles have been approved for use with Fuji pick and place equipment. Pneumatic nozzles with diameters ranging from 0.76mm - 1.07mm may be used for internal pick-up. Vacuum nozzle configuration may vary depending on equipment utilized. Typical configuration follows:

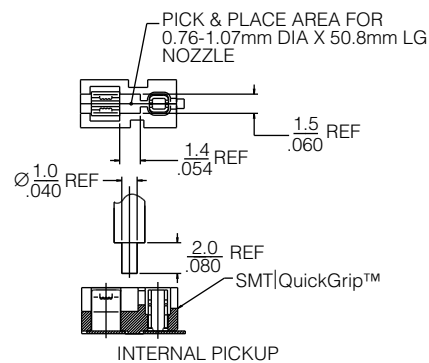


Figure 2

Typical Pneumatic Nozzle

Nozzle vacuum should be 15-30 inches hg.
Component placement pressure should not exceed 400g.

Note: Unless otherwise specified, all dimensions are mm/in.

Soldering

SMT|QuickGrip™ plug receptacles are designed for reflow soldering processes. Flow (wave) soldering is not appropriate for this device.

The type of solder paste selected for reflow soldering is generally a function of many factors relative to the overall system PCB design. Most applications will use common electronic grade solders such as: 63/37, 60/40 or 62/36/2 with mild rosin/resin fluxes. Metal content of the paste for screen and/or stencil applications is generally 85-90% by weight, slightly lower for nozzle dispensing applications.

When screening or stenciling, soldering paste thickness of .15mm (.006 inch) to .25mm (.010) is recommended.

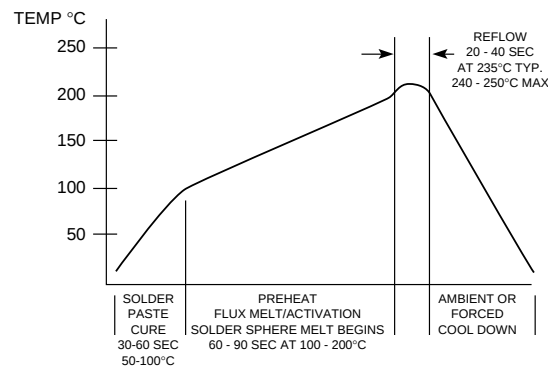


Figure 3

Typical Infrared and Convection Heating/Soldering Profile

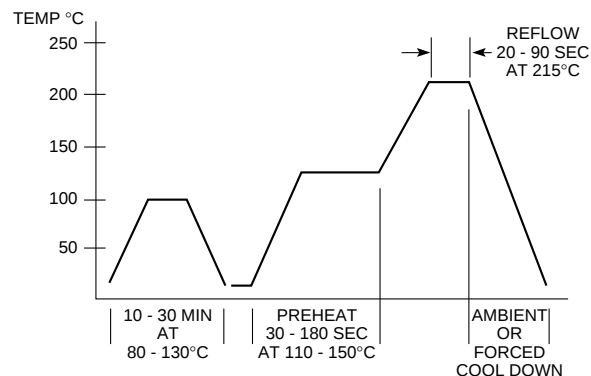


Figure 4

Typical Vapor Phase Heating/Soldering Profile

Post-Solder Cleaning

SMT|QuickGrip™ Plug receptacles can withstand most electronics grade cleaning agents including: high temperature water/aqueous cleaners, ethanol, methanol, MEK, acetone, 1,1,1-trichloroethane, trichloroethylene, perchloroethylene, chlorofluorocarbon (CFC) solvents, isopropanol, dichlorofluoroethane, and blends. The Omni-Flex cables can also withstand mild exposure to the above listed cleaning agents.

Note: Unless otherwise specified, all dimensions are mm/in.

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