



## RF Coax Connectors

SMT | QuickGrip<sup>®</sup> Connectors

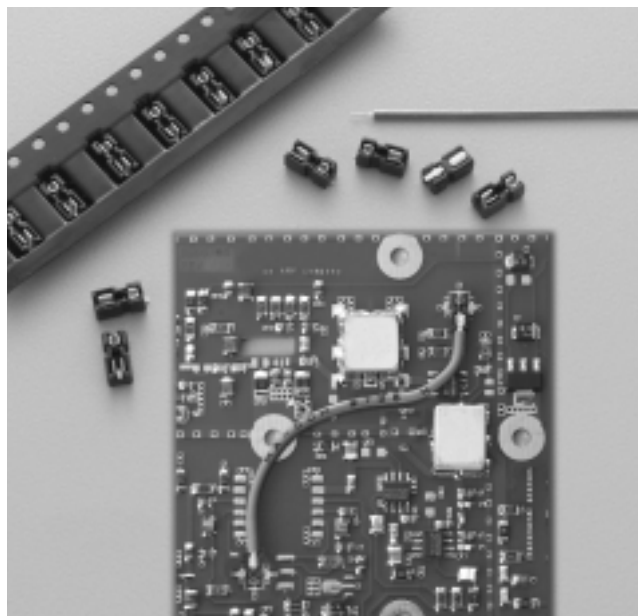
## Features

- Solderless Cable Termination
- 3.0 [.118] Mated Height
- Excellent Cable Retention
- Usable With Flexible and Semi-Rigid Micro-Coaxial Cables
- Tape and Reel Packaging

AMP 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 3.0 [.118] 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.

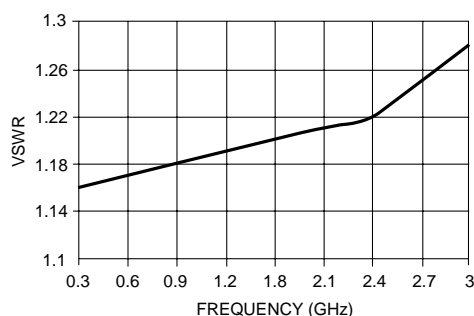
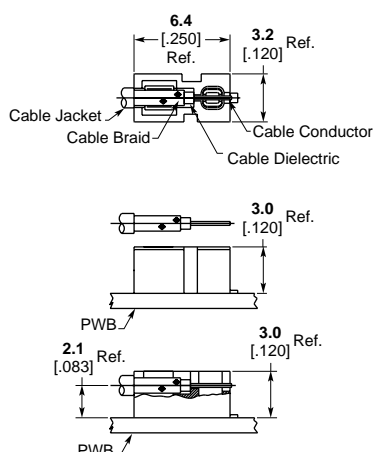
These features make this system extremely versatile for design engineers and offer a reliable, cost effective alternative to direct soldering of cable to the PCB. The cable is inserted into the device by means of a simple self-aligning hand tool, eliminating the requirement for skilled personnel. This 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. AMP 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.



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



## RF Coax Connectors

SMT | QuickGrip  Connectors (Continued)

## Specifications

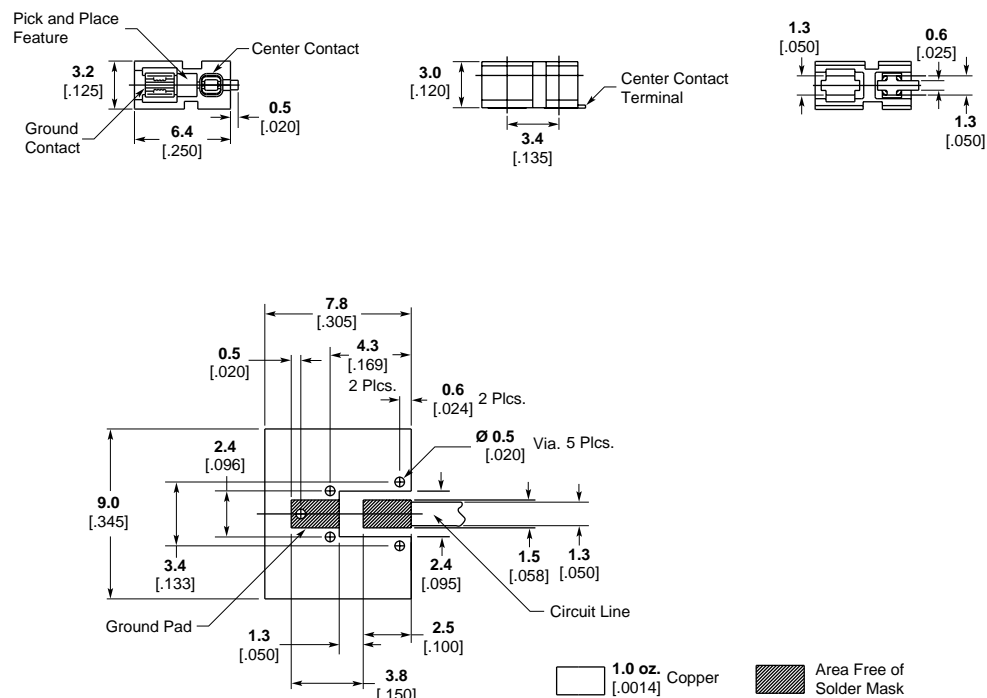
General		
Materials		
Housing:	Polyphenylene Sulfide (PPS)	
Contacts:	Copper Alloy	
Finishes		
Contacts:	Gold Plate over Nickel	
Electrical		
Frequency Range:	DC - 3GHz	
Impedance:	Usable with 50 & 75 Ohm systems	
Insertion Loss:	.08 $\sqrt{f}$ GHz	
DWV:	750 VRMs	
VSWR:	1.3:1 @ 3GHz (Omni-Flex 100, 200 and .047 [.002] Semi-Rigid) 1.4:1 @ 3GHz (.034 [.001] Semi-Rigid)	
Mechanical		
Connector Durability:	5 mating cycles min. (receptacle only)	
Tape and Reel Packaging:	16 [.629] per EIA-481	
Force to Disengage by Cam-Out (grams):	Omni-Flex 100 -	469 typical
	Omni-Flex 200 -	543 typical
	.034 [.001] Semi-Rigid -	852 typical
	.047 [.002] Semi-Rigid -	1066 typical
Environmental		
Temperature Rating:	-40°C(-40°F) to 105°C(221°F) when mated with Omni-Flex 100 -40°C(-40°F) to 125°C(257°F) when mated with Omni-Flex 200	
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:	9.5 [.375]	6.35 [.250]
Insertion Loss (PVC and FEP cable only):	1.3dB/m, 0.4 dB/ft. @ 500 MHz 2.0dB/m, 0.6 dB/ft. @ 1 GHz 3.0dB/m, 0.9 dB/ft. @ 2 GHz	1.3dB/m, 0.4 dB/ft. @ 500 MHz 2.0dB/m, 0.5 dB/ft. @ 1 GHz 3.0dB/m, 0.9 dB/ft. @ 2 GHz
Center Conductor Resistance:	.26 Ohms per foot average	.26 Ohms per foot average



## RF Coax Connectors

### SMT | QuickGrip Connectors (Continued)

#### PC Board Mount Receptacle

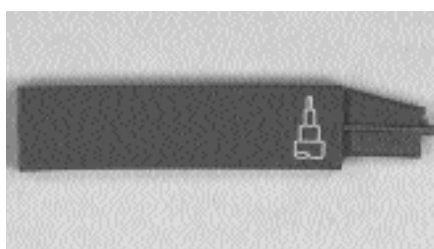


Recommended Mounting Pattern for Microstrip Line

Description	M/A-COM Model No.	Part No.
Bulk Packaged 100/bag	2318-0000-54	1085456-1
700 Piece Reel	2399-5011-54	1086008-1
2000 Piece Reel	2399-5012-54	1086009-1

1. Printed wiring board material: glass epoxy FR-4 or similar, relative permittivity: 4.8, 1 oz. copper clad both sides.
2. These dimensions valid for 1.6 [0.062] board thickness.

#### Cable Insertion Tool



M/A-COM Model No.	Part No.
2598-5438-54	1088313-1



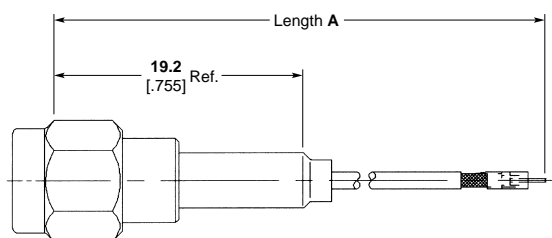
## RF Coax Connectors

### SMT | QuickGrip Connectors (Continued)

#### Inter-Series Cable Assemblies



#### SMA Straight Plug

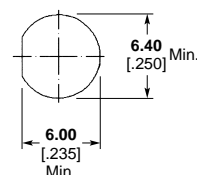
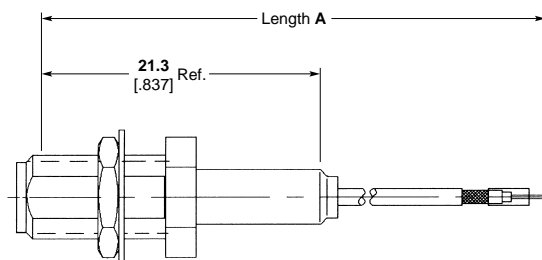


Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-01	1329187-1
	200 [8]	9970-4200-01	1329187-2
	305 [12]	9970-4305-01	1329187-3
Omni-Flex 200	100 [4]	9980-4100-01	1329174-1
	200 [8]	9980-4200-01	1329174-2
	305 [12]	9980-4305-01	1310432-1

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

#### SMA Bulkhead Jack



**Recommended  
Mounting Hole**

Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-02	1329173-1
	200 [8]	9970-4200-02	1329173-2
	305 [12]	9970-4305-02	1329173-3
Omni-Flex 200	100 [4]	9980-4100-02	1329175-1
	200 [8]	9980-4200-02	1329175-2
	305 [12]	9980-4305-02	1329175-3

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

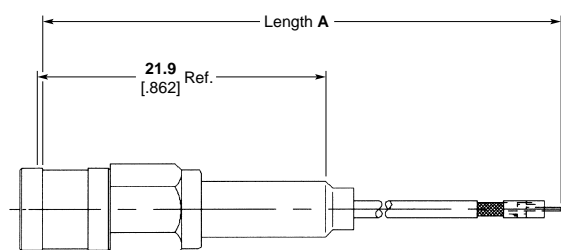


## RF Coax Connectors

## SMT | QuickGrip Connectors (Continued)

Inter-Series Cable  
Assemblies (Continued)

## SMB Straight Plug

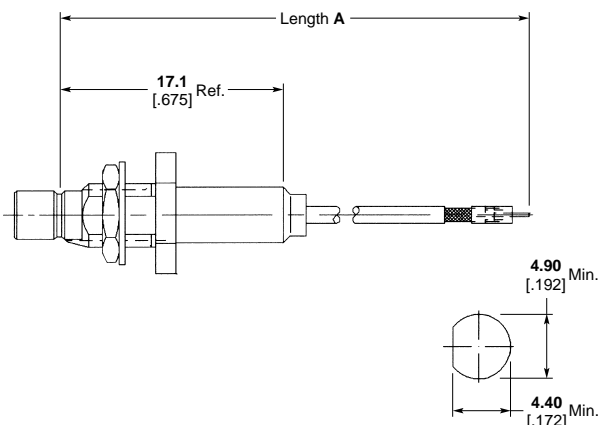


Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-03	1313275-2
	200 [8]	9970-4200-03	1313275-3
	305 [12]	9970-4305-03	1313275-1
Omni-Flex 200	100 [4]	9980-4100-03	1408049-1
	200 [8]	9980-4200-03	1408049-2
	305 [12]	9980-4305-03	1408049-3

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

## SMB Bulkhead Jack

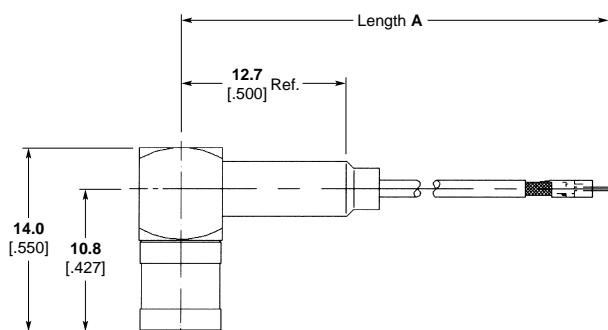
Recommended  
Mounting Hole

Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-04	1408050-1
	200 [8]	9970-4200-04	1408050-2
	305 [12]	9970-4305-04	1408050-3
Omni-Flex 200	100 [4]	9980-4100-04	1408050-4
	200 [8]	9980-4200-04	1408050-5
	305 [12]	9980-4305-04	1408050-6

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

## SMB Right Angle Plug



Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-05	1255378-1
	200 [8]	9970-4200-05	1255378-2
	305 [12]	9970-4305-05	1255378-3
Omni-Flex 200	100 [4]	9980-4100-05	1255378-4
	200 [8]	9980-4200-05	1255378-5
	305 [12]	9980-4305-05	1255378-6

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

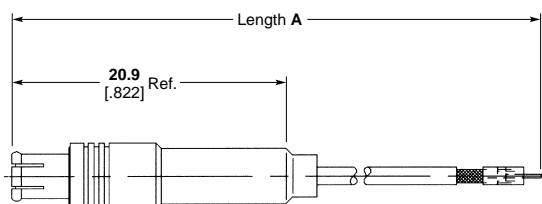


## RF Coax Connectors

## SMT | QuickGrip Connectors (Continued)

Inter-Series Cable  
Assemblies (Continued)

## MCX Straight Plug

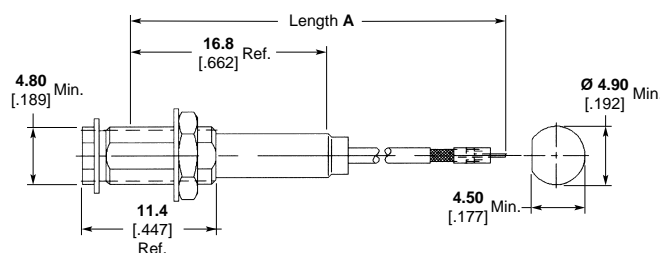


Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-06	1330400-1
	200 [8]	9970-4200-06	1330400-2
	305 [12]	9970-4305-06	1330400-3
Omni-Flex 200	100 [4]	9980-4100-06	1330400-4
	200 [8]	9980-4200-06	1330400-5
	305 [12]	9980-4305-06	1330400-6

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

## MCX Bulkhead Jack



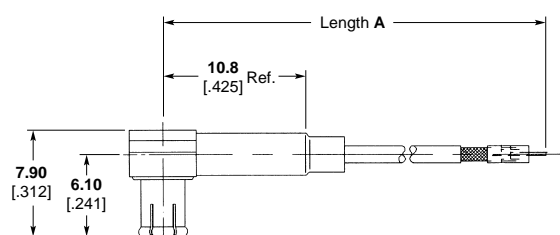
**Recommended  
Mounting Hole**

Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-07	1408051-1
	200 [8]	9970-4200-07	1408051-2
	305 [12]	9970-4305-07	1408051-3
Omni-Flex 200	100 [4]	9980-4100-07	1408051-4
	200 [8]	9980-4200-07	1408051-5
	305 [12]	9980-4305-07	1408051-6

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

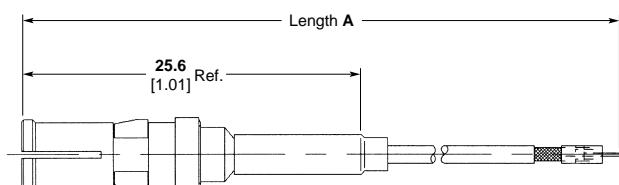
## MCX Right Angle Plug



Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-08	1330401-1
	200 [8]	9970-4200-08	1330401-2
	305 [12]	9970-4305-08	1330401-3
Omni-Flex 200	100 [4]	9980-4100-08	1330401-4
	200 [8]	9980-4200-08	1330401-5
	305 [12]	9980-4305-08	1330401-6

**Note:**

1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]

50 Ohm D-sub Coaxial  
Receptacle

Cable	Assembly Length (A)	M/A-COM Model No.	Part No.
Omni-Flex 100	100 [4]	9970-4100-09	1408052-1
	200 [8]	9970-4200-09	1408052-2
	305 [12]	9970-4305-09	1408052-3
Omni-Flex 200	100 [4]	9980-4100-09	1408052-4
	200 [8]	9980-4200-09	1408052-5
	305 [12]	9980-4305-09	1408052-6

**Note:**

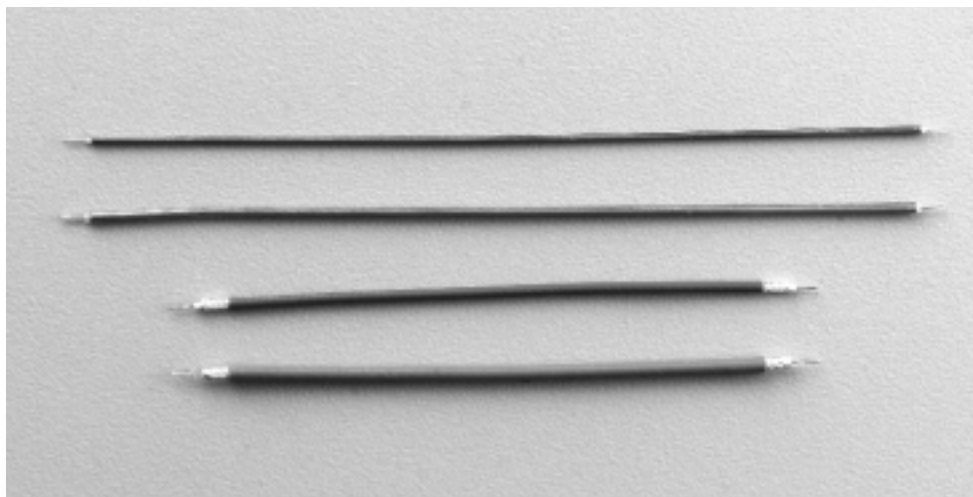
1. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In],  
50 to 100 [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500 [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ],  
Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]



## RF Coax Connectors

SMT | QuickGrip  Connectors (Continued)

## Pre-Stripped Cables



Cable Type	Description	Cable Length	M/A-COM Model No.	Part No.
Omni-Flex 100 (OSMT Cable)	Pre-Stripped	100 [4]	9970-1100-23	<b>1255379-1</b>
	Omni-Flex	200 [8]	9970-1200-23	<b>1310520-1</b>
	Cables for use with SMT   QuickGrip	305 [12]	9970-1305-23	<b>1313265-1</b>
Omni-Flex 200 (SSMT Cable)	Pre-Stripped	100 [4]	9980-1100-23	<b>1313334-1</b>
	Omni-Flex	200 [8]	9980-1200-23	<b>1310521-1</b>
	Cables for use with SMT   QuickGrip	305 [12]	9980-1305-23	<b>1408074-1</b>
.034 [.001] Semi-Rigid	Pre-Stripped	100 [4]	9921-1100-23	<b>1408075-1</b>
	Omni-Flex	200 [8]	9921-1200-23	<b>1408075-2</b>
	Cables for use with SMT   QuickGrip	305 [12]	9921-1305-23	<b>1408075-3</b>
.047 [.002] Semi-Rigid	Pre-Stripped	100 [4]	9922-1100-23	<b>1408075-4</b>
	Omni-Flex	200 [8]	9922-1200-23	<b>1408075-5</b>
	Cables for use with SMT   QuickGrip	305 [12]	9922-1305-23	<b>1408075-6</b>

**Notes:**

1. Cables should be ordered in 5mm increments.
2. Will Accept: RG 178, RG 196 When Stripped and Pre-Tinned.
3. Cable length tolerances: Length 'A' mm [In], Tolerance mm [In], 50 to 100mm [3.94],  $\pm 3$  [ $\pm .12$ ], 101 to 500mm [3.98 to 19.69],  $\pm 5$  [ $\pm .20$ ], Over 500 [19.69],  $\pm 10$  [ $\pm .39$ ]



Engineering Notes (Continued)