

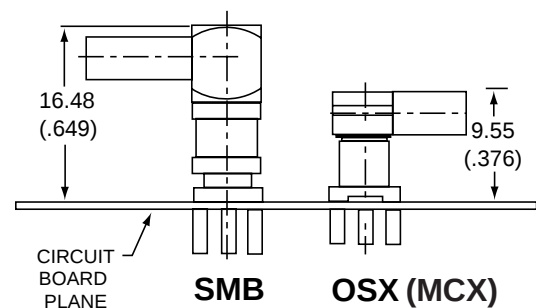
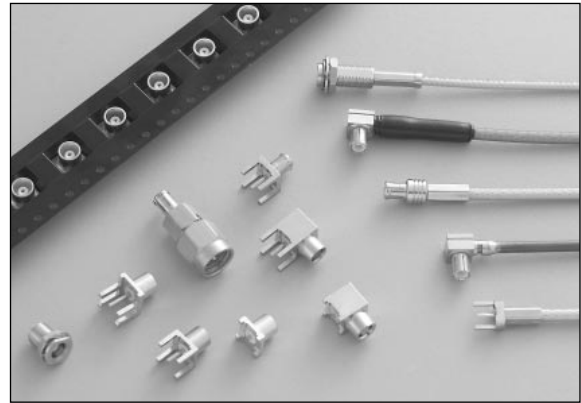
OSX(MCX) Microminiature Snap-On Connectors Series

- Snap-on interface facilitates assembly
- Conforms to CECC interface specifications for MCX
- 30% smaller than SMB connectors
- Surface mount tape and reel for high volume

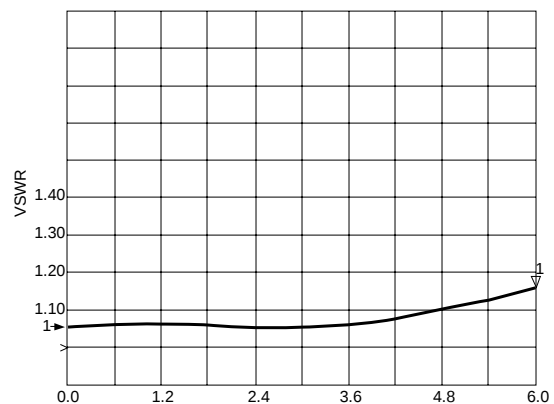
M/A-COM OSX microminiature snap-on connectors offer an excellent blend of size, durability and performance for emerging applications in GPS, automotive and wireless communications. OSX connectors are 30% smaller than traditional snap-on SMB connectors, offering greater packaging density and weight reduction. OSX connectors are mechanically robust with beryllium copper spring fingers rated at a minimum of 500 mating cycles. The snap-on interface facilitates assembly, eliminating the need for a threaded connection, and ensuring full engagement. The forces to engage and disengage have been optimized to ensure ease of mating as well as to prevent damage to PCB solder connections. OSX connectors are designed for broad band performance, DC-6 GHz, and can be utilized for future system upgrades without concerns for performance degradation. M/A-COM OSX connectors are fully mateable with standard MCX connectors and conform to the CECC interface specifications.

OSX connectors are available in a broad range of standard configurations for commercial applications. Tape and reel packaging for OSX surface mount straight and right angle PCB receptacles is available to facilitate high volume pick and place manufacturing. OSX surface mount connectors are designed to withstand infrared reflow, convection and vapor phase soldering and provide a .254 mm (.010 in.) standoff for optimal board cleaning. OSX plug and jack PCB receptacles also offer a direct board to board solution providing a nominal 7.11mm (0.28in) separation.

The OSX connector series is a cost effective solution for the challenging demands of today's commercial marketplace. M/A-COM maintains an SPC controlled and ISO 9001 certified manufacturing environment to ensure uncompromising quality. Call your local M/A-COM sales office or authorized distributor for more information or samples of the OSX connector series.



Typical Mated Height Comparison



Typical VSWR for OSX Right Angle Cable Plug

Part Number	5837-5003-10
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M/A-COM, Inc.

North America: Tel. (800) 366-2266
Fax (800) 618-8883

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OSX (MCX) Specifications

Requirement	Detail
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General

Materials	Brass alloys UNS C36000 (ASTM-B16) or C38500 per QQ-B626, Beryllium copper per ASTM B-196, PTFE fluorocarbon per ASTM-D-1457
Finish	Center Contacts: Gold plated (MIL-G-45204) over nickel plate (QQ-N-290) Outer Contacts: Gold plated (MIL-G-45204) over nickel plate (OO-N-290) Housings: Nickel plated (QQ-N-290), tin lead (MIL-P-81728) or Gold plated (MIL-G-45204) All other metal parts shall be furnished so as to provide a connector which meets corrosion requirements. For additional plating finishes, contact the factory.
Design	The design shall be such that the outline and interface dimensions shown in this catalog are met.

Electrical

Frequency	dc - 6 GHz
Nominal Impedance	50 ohms
Voltage Rating	335 Volts (VRMS Maximum) @ Sea Level
VSWR	1.25:1 Maximum @ 4 GHz 1.35:1 Maximum @ 6 GHz
Insulation Resistance	10,000 Megaohms Minimum
Insertion Loss	.1dB Maximum/1000 MHz
Dielectric Withstanding Voltage	1000 Volts (VRMS Minimum) @ Sea Level
Contact Resistance	5.0 Milliohms Maximum
Center Contact	1.0 Milliohms Maximum
Outer Contact	
Corona 70,000 ft.	250 Volts (VRMS Minimum) @ MHz
RF High Potential @ Sea Level	670 Volts (VRMS Minimum) @ MHz
Contact Current	1.5 ADC Max

Mechanical

Force to Engage	3.4 lbs. Maximum
Force to Disengage	1.77 lbs. Minimum, 4.5 lbs. Maximum
Contact Captivation	Designed to maintain OSX interface when mating
Connector Durability	500 insertion and withdrawal cycles

Environmental

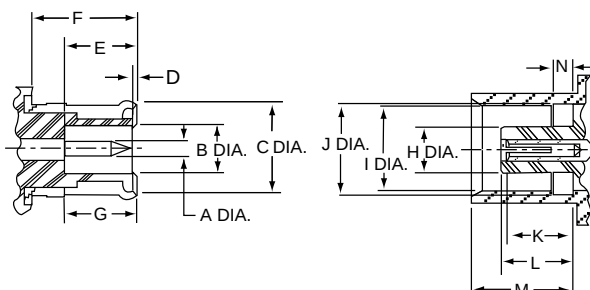
Temperature Rating	-65°C + 165°C
Vibration	MIL-STD-202, Method 204, Condition B
Shock	MIL-STD-202, Method 213, Condition A
Moisture Resistance	MIL-STD-202, Method 106
Corrosion	MIL-STD-202, Method 101, Condition B, 48 Hours
Thermal Shock	MIL-STD-202, Method 107, Condition B

Performance data typical of 5837-5003-10. Performance for other connectors will vary.

M/A-COM has design control and all data contained herein is subject to change without notice. Contact the factory for specifications on other connector types.

PLUG

Letter	Millimeters (Inches)	
	Minimum	Maximum
A	0.48 (.0189)	0.53 (.0208)
B	2.00 (.0788)	2.07 (.0815)
C	3.66 (.144)	3.76 (.148)
D	0.00 (.000)	0.30 (.0118)
E	2.80 (.111)	3.20 (.125)
F	4.15 (.164)	—
G	2.80 (.111)	3.20 (.125)



JACK

Letter	Millimeters (Inches)	
	Minimum	Maximum
H	1.85 (.073)	1.98 (.077)
I	3.42 (.135)	3.48 (.137)
J	3.60 (.142)	3.75 (.147)
K	2.30 (.091)	2.80 (.110)
L	2.60 (.103)	2.80 (.110)
M	4.00 (.158)	4.12 (.162)
N	0.75 (.0296)	0.85 (.0334)

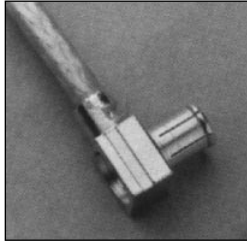
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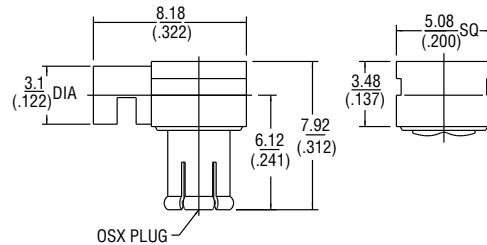
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Solder Attachment



Right Angle Cable Plug



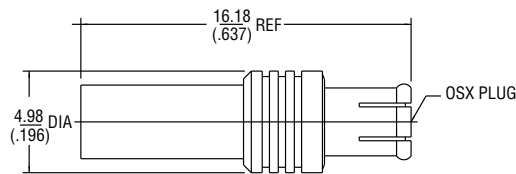
Part Number	Cable
5807-5001-09	RG-174/U,188/U,316/U

Finish: Gold plated

Crimp Attachment



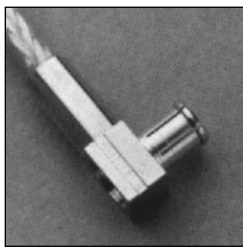
Straight Cable Plug



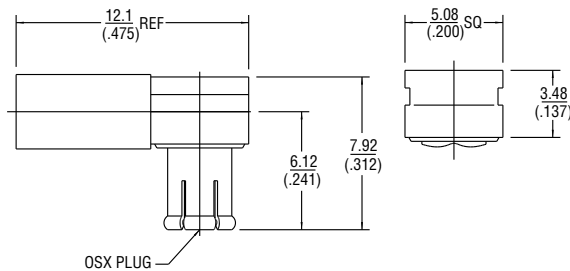
Captured Center Contact	
Part Number	Cable
5831-5001-10	RG-174/U,188/U, 316/U
Non - Captured Center Contact	
Part Number	Cable
5831-5002-10	RG-178/U, 196/U
5831-5003-10	RG-174/U,188/U, 316/U
5831-7316-10	RD-316

Finish: Nickel plated., for optional gold plate, change suffix to -09

Note: For full crimp attachment consult factory

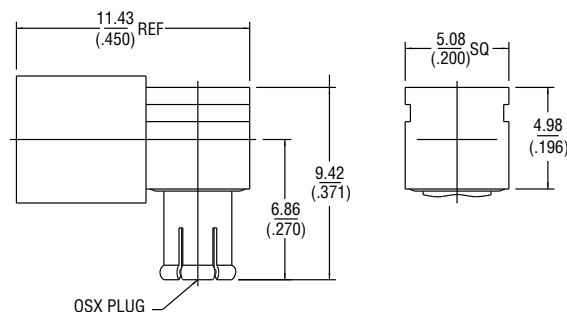


Right Angle Cable Plug



Part Number	Cable
5837-5002-10	RG-178/U, 196/U
5837-5003-10	RG-188/U, 316/U, RG-179/U, RG-187/U
5837-5010-10	RD-316

Finish: Nickel plated, for optional gold plate, change suffix to -09



Part Number	Cable
5837-5006-10	RG-58/U

Finish: Nickel plated, for optional gold plate, change suffix to -09.

Decimal inch equivalents are shown in parentheses for general information only.

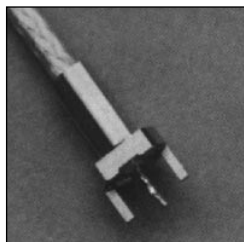
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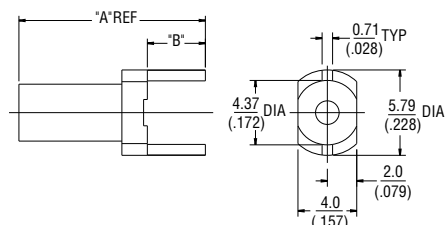
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Printed Circuit Board



Straight Cable Terminal Without Center Contact

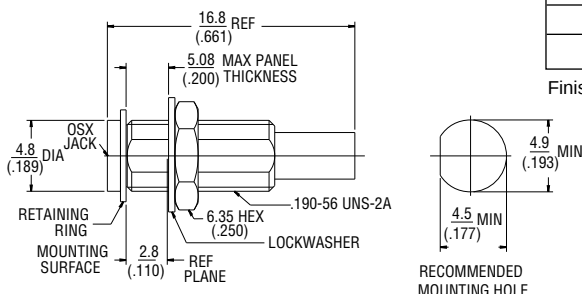


Cable	RG-174/U, 188/U, 316/U		RG-178, 196/U	
Part Number	5818-5002-10	5818-5003-10	5818-5004-10	5818-5005-10
Dim. A	mm (Inches) 11.76 (.463)	mm (Inches) 10.74 (.423)	mm (Inches) 12.01 (4.73)	mm (Inches) 11.00 (4.33)
Dim. B	3.94 (.155)	2.92 (.115)	3.94 (.155)	2.92 (.115)

Finish: Nickel plated, for optional gold plate change suffix to -09.



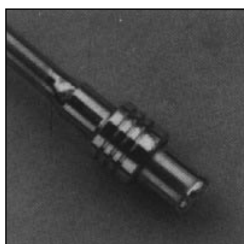
Bulkhead Cable Jack



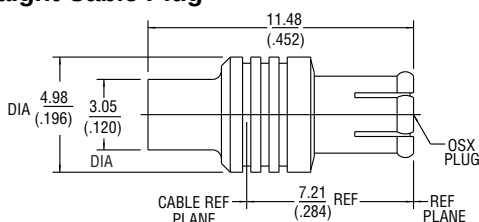
Part Number	Cable
5834-7396-10	RG-178/U, RG-196/U
5834-7388-10	RG-188/U, RG-316/U
5834-7316-10	RD-316

Finish: Nickel plated, for optional gold plate change suffix to -09.

For Semi-Rigid Cable .085 Dia • Direct Solder Attachment



Straight Cable Plug

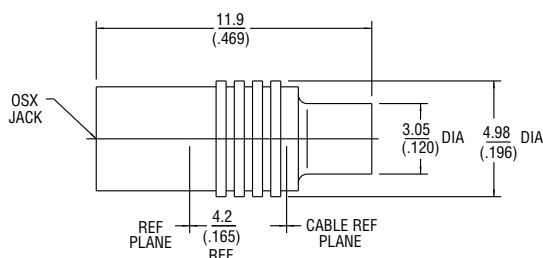


Part Number	Cable
5801-7985-09	RG-405/U (.085)

Finish: Gold plated



Straight Cable Jack



Part Number	Cable
5802-7985-09	RG-405/U (.085)

Finish: Gold plated

Decimal inch equivalents are shown in parentheses for general information only.

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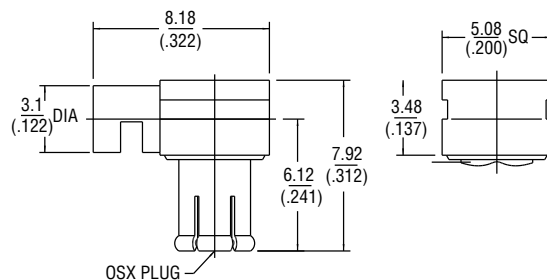
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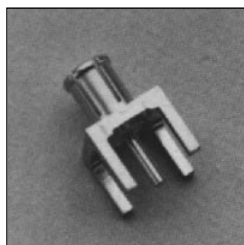
Right Angle Plug Receptacle



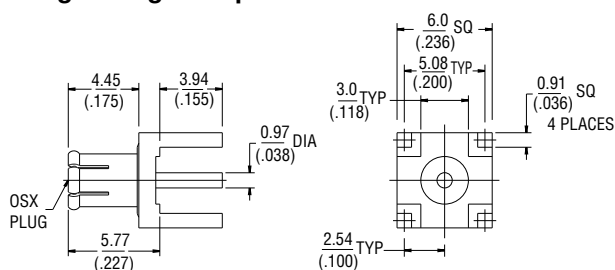
Part Number	Cable
5807-7985-09	RG405/U

Finish: Gold plated

Printed Circuit Board

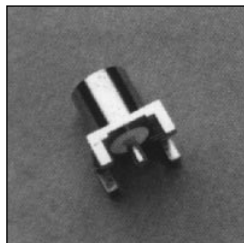


Straight Plug Receptacle

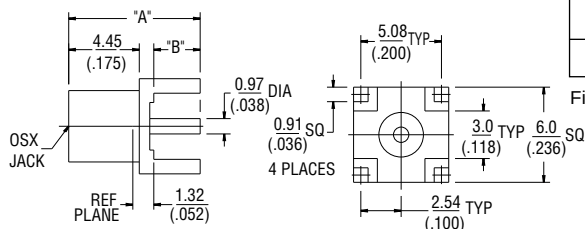


Part Number	5863-0000-10
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Finish: Nickel plated, for optional gold plate change suffix to -09.



Straight Jack Receptacle

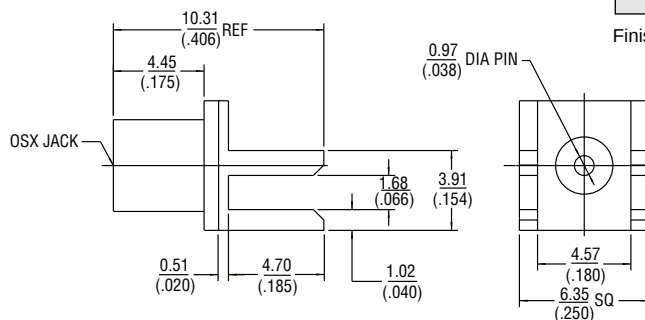


Part Number	5862-5002-10	5862-5003-10	5862-5004-10
	mm (Inches)	mm (Inches)	mm (Inches)
Dim. A	8.28 (.326)	9.30 (.366)	7.09 (.279)
Dim. B	2.92 (.115)	3.94 (.155)	1.73 (.068)

Finish: Nickel plated, for optional gold plate change suffix to -09.



Straight End Launch



Part Number	5862-5018-13
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Finish: Tin lead plated.

Decimal inch equivalents are shown in parentheses for general information only.

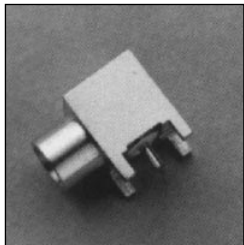
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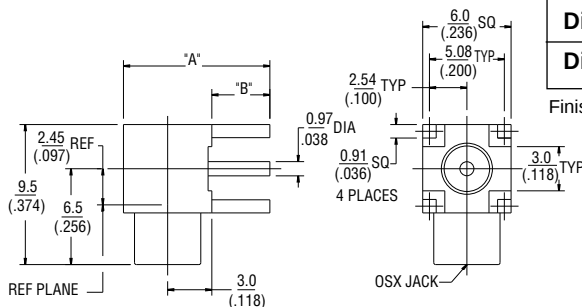
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OSX (MCX)



Right Angle Jack Receptacle



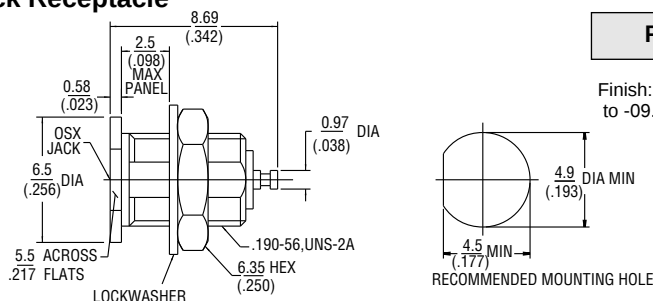
Part Number	5864-5001-10	5864-5002-10	5864-5003-10
Dim. A	mm (Inches)	mm (Inches)	mm (Inches)
Dim. B	9.93 (.391)	7.72 (.304)	8.92 (.351)
	3.94 (.155)	1.73 (.068)	2.92 (.115)

Finish: Nickel plated, for optional gold plate change suffix to -09.

Bulkhead Feedthrough



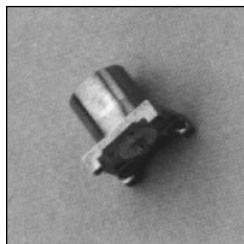
Jack Receptacle



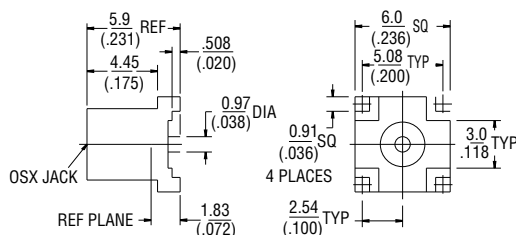
Part Number	5858-0000-10
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Finish: Nickel plated, for optional gold plate change suffix to -09.

Surface Mount



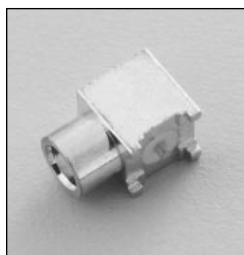
Straight Jack Receptacle



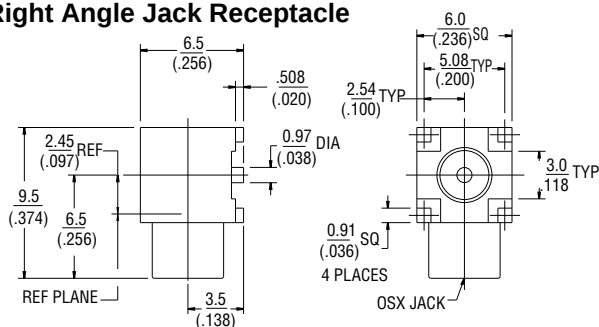
Part Number	5862-5007-13
Part Number	5899-5004-54 ¹

Finish: Tin lead plated

¹Tape and Reel packaging 900 connectors per reel (carrier width 16mm, carrier pitch 12mm).



Right Angle Jack Receptacle



Part Number	5864-5008-13
Part Number	5899-5009-54 ¹

Finish: Tin lead plate

¹Tape and reel packaging

750 connectors per reel (carrier width 24mm carrier pitch 12mm)

Decimal inch equivalents are shown in parentheses for general information only.

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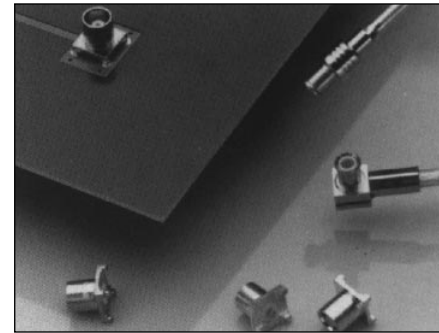
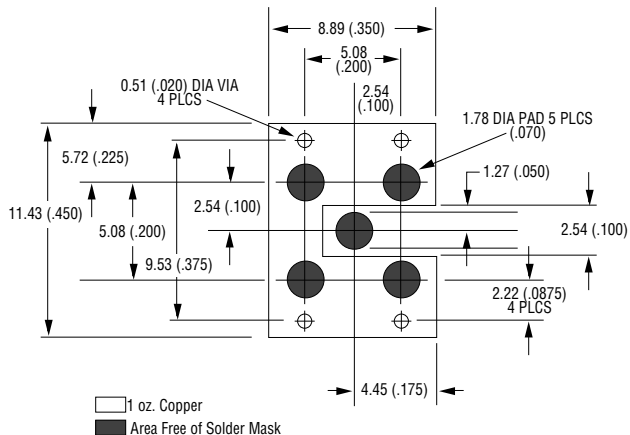
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OSX (MCX) Printed Circuit Board Receptacles

Recommended Mounting Pattern for Microstrip Line



Notes:

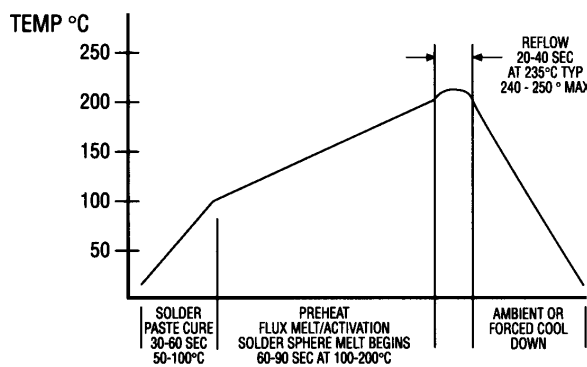
1. Printed wiring board material: glass epoxy FR-4 or similar; relative permittivity: 4.8, 1 oz. copper clad both sides.
2. These dimensions valid for 1.58 (.062) board thickness.
3. Decimal inch equivalents are shown in parentheses for general information only.

Part numbers 5862-5007-13 and 5864-5008-13 are designed for surface mounting using infrared and vapor phase solder techniques. Connector materials used include brass housings and teflon dielectric support bushings which are compatible with infrared and vapor phase soldering limits of 215° C.

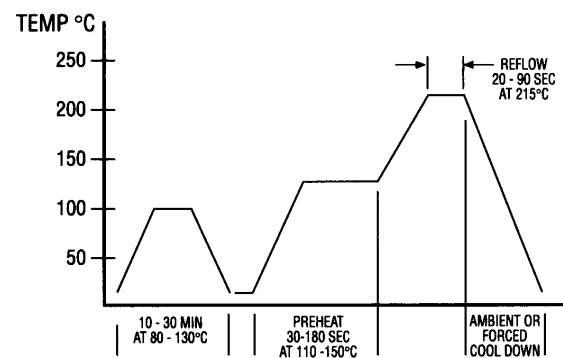
The infrared soldering method should employ a convection heating feature because of the shrouded center contact which is inherent to the OSX straight coaxial connector design. (Manual soldering techniques are not recommended because of the physical connector housing-to-board spacing of 1.29mm (.051 inches).

The solder paste selection for reflow soldering techniques is generally a function of components used on printed wire board assembly. The metal content of the paste, for screening stencil applications, is generally 85-90% by weight. Nozzle dispensing techniques will have a slightly lower content. Solder paste thickness of 0.15mm (.006 inches) to 0.25mm (.010 inches) is recommended. Standard electrical grade solders such as 63/37 (183°C), 60/40 (190°C) and 62/36/2 (189°C) are used for most applications. These types of solder employ a mild rosin/resin flux.

Typical reflow temperature profiles



Typical Infrared and Convection Heating/Soldering Profile



Typical Vapor Phase Heating/Soldering Profile

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OSX (MCX) Between-Series Adapters and Tools

Between-Series Adapters



Part Number	Description
5880-2240-00	OSX Jack to SMA Jack
5881-2241-00	OSX Plug to SMA Plug
5882-2240-00	OSX Plug to SMA Jack
5882-2241-00	OSX Jack to SMA Plug

Consult factory for complete specifications.

Econo-Crimp Assembly Kit

Part Number 2598-5005-54

The kit contains:

Description	Part Number
Crimp Tool	2598-5006-54
Crimp Die	2598-5007-54

All tools may be purchased separately.

Crimp Die Part Number	Die	Size	For Use With RG/U Cable
2598-5007-54	A	2.67± .08 Hex	178B & 196A
	C	3.25 ± .08 Hex	188A & 316

MIL-C-22520/5-01 Type Hex Crimp Kit

Part Number 2098-0105-54

The kit contains:

Description	Part Number
Crimp Tool	5698-5014-54
Die Change Tool	5698-5017-54
Crimp Die	5698-5015-54

All tools may be purchased separately.

Crimp Die Part Number	Die	Hex Size ±.08	For Use With RG/U Cable
5698-5015-54	A	2.67	178B & 196A
	C	3.25	174,188A & 316
2098-0323-54	—	3.84	RD-316

Decimal inch equivalents are shown in parentheses for general information only.

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