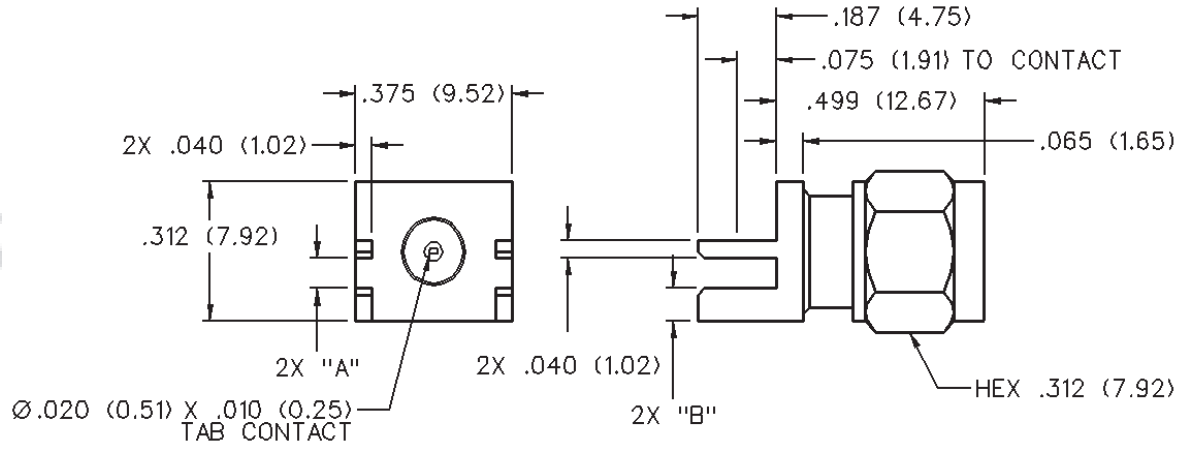
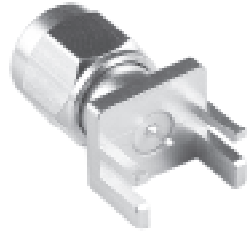


# SMA 50 Ohm End Launch Plug Receptacle - Tab Contact



INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST



VSWR & FREQ. RANGE	BOARD THICKNESS	GOLD PLATED	NICKEL PLATED	"A"	"B"
VSWR: N/A 0-18 GHz	.042 (1.07)	142-0801-831	142-0801-836	.048 (1.22)	.103 (2.62)

**Impedance:** 50 ohms

**Frequency Range:**

Dummy loads ..... 0-2 GHz  
Flexible cable connectors ..... 0-12.4 GHz  
Uncabled receptacles, RA semi-rigid and adapters ..... 0-18.0 GHz  
Straight semi-rigid cable connectors and  
field replaceable connectors ..... 0-26.5 GHz

**VSWR:** (f = GHz)

	Straight Cabled Connectors	Right Angle Cabled Connectors
RG-178 cable .....	1.20 + .025f	1.20 + .03f
RG-316, LMR-100 cable .....	1.15 + .02f	1.15 + .03f
RG-58, LMR-195 cable .....	1.15 + .01f	1.15 + .02f
RG-142 cable .....	1.15 + .01f	1.15 + .02f
LMR-200, LMR-240 cable .....	1.10 + .03f	1.10 + .06f
.086 semi-rigid .....	1.07 + .008f	1.18 + .015f
.141 semi-rigid (w/contact) .....	1.05 + .008f	1.15 + .015f
.141 semi-rigid (w/o contact) .....	1.035 + .005f	
Jack-bulkhead jack adapter and plug-plug adapter .....	1.05 + .01f	
Jack-jack adapter and plug-jack adapter .....	1.05 + .005f	
Uncabled receptacles, dummy loads .....	N/A	
Field replaceable (see page 59) .....	N/A	

**Working Voltage:** (Vrms maximum)

<b>Connectors for Cable Type</b>	<b>Sea Level</b>	<b>70K Feet</b>
RG-178 .....	170	45
RG-316; LMR-100, 195, 200 .....	250	65
RG-58, RG-142, LMR-240, .086 semi-rigid, uncabled receptacles, .141 semi-rigid w/o contact ...	335	85
.141 semi-rigid with contact and adapters .....	500	125
Dummy loads .....	N/A	

**Dielectric Withstanding Voltage:** (VRMS minimum at sea level)

Connectors for RG-178 .....	500
Connectors for RG-316; LMR-100, 195, 200 .....	750
Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, field replaceable, uncabled receptacles .....	1000
Connectors for .141 semi-rigid with contact and adapters .....	1500
Connectors for .141 semi-rigid w/o contact, dummy loads .....	N/A

**Corona Level:** (Volts minimum at 70,000 feet)

Connectors 9 46.5682 365.037 Tm=0.002 Tc(Conne)Tj8.j/F0 1 Tf8.1 0 0294.6712 375 Tm0..

# SMA - 50 Ohm Connectors

Specifications



INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

## MATERIAL SPECIFICATIONS

**Bodies:** Brass per QQ-B-626, gold plated\* per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

**Contacts:** Male - brass per QQ-B-626, gold plated per MIL-G-45204 .00003" min.

Female - beryllium copper per QQ-C-530, gold plated per MIL-G-45204 .00003" min.

**Nut Retention Spring:** Beryllium copper per QQ-C-533. Unplated

**Insulators:** PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 or Tefzel per ASTM D 3159 or PFA 340 per ASTM

**Expansion Caps:** Brass per QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

**Crimp Sleeves:** Copper per WW-T-799 or brass per QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

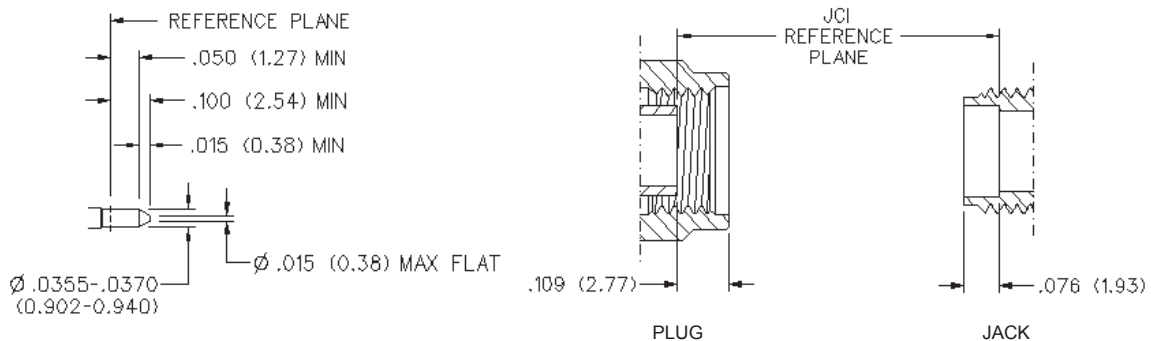
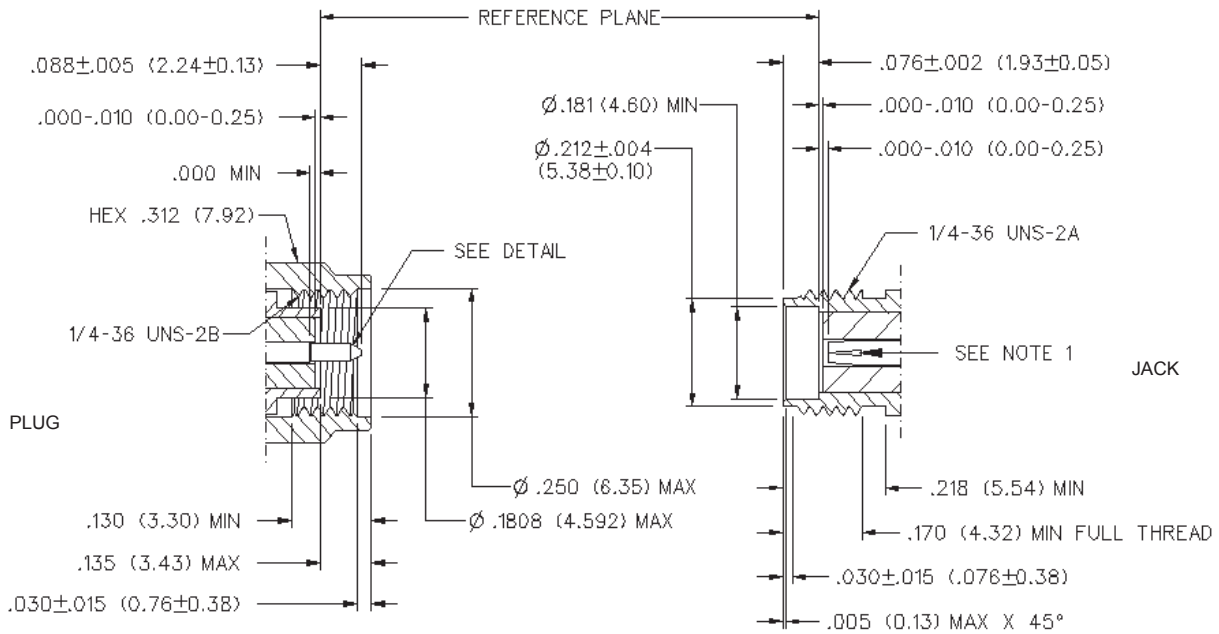
**Mounting Hardware:** Brass per QQ-B-626 or QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

**Seal Rings:** Silicone rubber per ZZ-R-765

**EMI Gaskets:** Conductive silicone rubber per MIL-G-83528, Type M

\* All gold plated parts include a .00005" min. nickel underplate barrier layer.

### Mating Engagement for SMA Series per MIL-C-39012



#### NOTES

1. ID OF CONTACT TO MEET VSWR, CONTACT RESISTANCE AND INSERTION WITHDRAWAL FORCES WHEN MATED WITH DIA .0355-.0370 MALE PIN.

Cinch Connectivity Solutions

2 0 3 00.2 . 2 +1 0 33 22

# SMA - 50 Ohm Connectors

End Launch Connectors - A Johnson Components™ Original

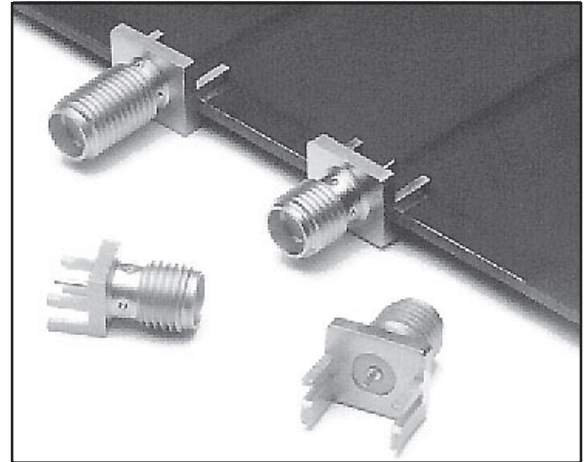


INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

The **End Launch** connector is attached to the circuit board by inserting the board edge between the legs and soldering the legs and center conductor to pads on the board. For optimum high frequency performance, the connector to circuit board transition must be adjusted for low VSWR. To compensate for the transition from coax to microstrip, trace widths "A" and "B" must be adjusted based on circuit board thickness. When properly adjusted, this technique yields a low VSWR over a wide bandwidth.

The tabulated dimensions "A", "B", "C", "D", and "E" were determined experimentally to achieve low VSWR (typically less than 1.5 up to 18 GHz). The circuit board used for these tests was double-sided FR 4 with 1 oz. copper on both sides. The copper was left on the bottom of the board to create a ground plane for the 50 Ohm microstrip structure. While not all inclusive, these dimensions are given as reference information for selected **SMA End Launch** connectors. Further adjustments may be necessary depending upon the application. All dimensions are in inches.

Tabulated Dimensions "A", "B", "C" and "D" are symmetrical about the center line



Part Number	Base Width	Board Thick	"A"	"B"	"C"	"D"	"E"
142-0701-801/806	.375	.062	.103	.090	.250	.440	.200
142-0701-851/861	.375	.062	.103	.090	.250	.440	.200
142-0711-871/876	.375	.062	.103	.090	.250	.440	.200
142-0711-821/826	.250	.062	.103	.070	.170	.380	.165
142-0711-871/876	.375	.047	.083	.075	.250	.440	.200
142-0711-881/886	.375	.047	.083	.075	.250	.440	.200
142-0701-881/886	.375	.031	.050	.045	.250	.440	.200

## Surface Mount Versions Available!

### SMA End Launch Specifications

#### ELECTRICAL RATINGS

**Impedance:** 50 Ohms  
**Frequency Range:** 0-18 GHz  
**VSWR:** Dependent upon application  
**Working Voltage (VRMS max.):** 335 @ Sea Level, 85 @ 70K Feet  
**Dielectric Withstanding Voltage (VRMS min. at sea level):** 1000  
**Corona Level (Volts min. at 70,000 feet):** 250  
**Insulation Resistance:** 5000 megohms min  
**Contact Resistance (milliohms max.):** 3.0 Initial, 4.0 after environmental  
**RF High Potential Withstanding Voltage (VRMS min. tested at 4 and 7 MHz):** 670

#### MECHANICAL RATINGS

**Engagement Design:** MIL-C-39012, Series SMA  
**Engagement/Disengagement Force:** 2 inch-pounds max.  
**Mating Torque:** 7 to 10 inch-pounds  
**Coupling Proof Torque:** 15 inch-pounds min.  
**Coupling Nut Retention:** 60 pounds min.  
**Contact Retention Force:** 6 lbs min. axial force, 4 inch-ounce min. torque  
**Durability:** 500 cycles min.

#### ENVIRONMENTAL RATINGS:

(Meets or exceeds the applicable paragraph of MIL-C-39012)  
**Temperature Range:** -65° to + 165° C  
**Thermal Shock:** MIL-STD-202, Method 107, Condition B  
**Corrosion:** MIL-STD-202, Method 101, Condition B  
**Shock:** MIL-STD-303, Method 213, Condition I  
**Vibration:** MIL-STD-202, Method 204, Condition D  
**Moisture Resistance:** MIL-STD-202, Method 106

#### MATERIAL SPECIFICATIONS

**Bodies:** Brass per QQ-B-626, gold plated\* per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290  
**Contacts:** Male - brass per QQ-B-626, gold plated per MIL-G-45204 .00003" min.  
 Female - beryllium copper per QQ-C-530, gold plated per MIL-G-45204 .00003" min.  
**Nut Retention Spring:** Beryllium copper per QQ-C-533. Unplated  
**Insulators:** PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457  
**Mounting Hardware:** Brass per QQ-B-626 or QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

\*All gold plated parts include a .00005" min. nickel underplate barrier layer.