

142-4303-401	4
142-4303-406	4
142-4304-401	4
142-4304-406	4
142-4307-401	4
142-4307-406	4
142-4308-401	4
142-4308-406	4
142-4403-001	3
142-4403-006	3
142-4403-101	3, 4
142-4403-106	3, 4
142-4404-001	3
142-4404-006	3
142-4404-101	3
142-4404-106	3
142-4407-001	3
142-4407-006	3
142-4407-101	3, 4
142-4407-106	3, 4
142-4408-001	3
142-4408-006	3
142-4408-101	3
142-4408-106	3
142-4435-001	3
142-4435-006	3
142-4435-101	4
142-4435-106	4
142-4439-001	3
142-4439-006	3
142-4439-101	4
142-4439-106	4
142-4701-201	5
142-4701-206	5
142-4701-501	5
142-4701-506	5
142-4701-801	5
142-4701-806	5
End Launch Bulkhead Jack Receptacle	5
Right Angle Bulkhead Jack Receptacle	5
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Straight Crimp Type Plug - Captivated Contact	3
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Straight Jack Receptacle	5

**SMA Reverse Polarity connectors for FCC Rule 15** FCC regulation (Part 15.203) stipulates that wireless devices with removable antennas require a non-standard antenna connection to the hand-held device. To meet this requirement, Johnson Components® designs and manufactures non-standard mating SMA connectors.

Reverse polarity connectors employ female contacts in the plug connector and male contacts in the jack connector. Johnson Components® manufactures straight and right angle cabled plugs and bulkhead jacks; along with straight and right angle bulkhead jack receptacles and an end launch jack receptacle in the reverse polarity style.

# SMA Reverse Polarity - 50 Ohm

## Specifications

### ELECTRICAL RATINGS

**Impedance:** 50 ohms

**Frequency Range:**

Flexible cable connectors ..... 0-12.4 GHz  
Uncabled receptacles ..... 0-18.0 GHz

**VSWR:** (f = GHz)

	Straight	Right Angle
	<u>Cabled Connectors</u>	<u>Cabled Connectors</u>
RG-316, LMR-100 cable .....	1.15 + .02f	1.15 + .03f
RG-58, LMR-195 cable .....	1.17 + .025f	1.17 + .06f
RG-142 cable .....	1.17 + .02f	1.15 + .03f
LMR-200, LMR-240 cable .....	1.10 + .03f	1.10 + .06f
Uncabled receptacles .....	N/A	

**Working Voltage:** (Vrms maximum)<sup>†</sup>

**Connectors for Cable Type**

	Sea Level	70K Feet
RG-316; LMR-100, 195, 200 .....	250	65
RG-58, RG-142, LMR-240, uncabled receptacles ..	335	85

**Dielectric Withstanding Voltage:** (VRMS minimum at sea level)<sup>†</sup>

Connectors for RG-316; LMR-100, 195, 200 ..... 750  
Connectors for RG-58, RG-142, LMR-240, uncabled receptacles . 1000

**Corona Level:** (Volts minimum at 70,000 feet)<sup>†</sup>

Connectors for RG-316, LMR-100, 195, 200 ..... 190  
Connectors for RG-58, RG-142, LMR-240, uncabled receptacles ... 250

**Insertion Loss:** (dB maximum)

Straight flexible cable connectors .....  $.06 \sqrt{f}$  (GHz), tested at 6 GHz  
Right angle flexible cable connectors .....  $0.15 \sqrt{f}$  (GHz), tested at 6 GHz  
Low loss flexible straight cable connectors .....  $0.06 \sqrt{f}$  (GHz), tested at 1 GHz  
Low loss flexible right angle cable connectors .....  $0.15 \sqrt{f}$  (GHz), tested at 1 GHz  
Uncabled receptacles, field replaceable ..... N/A

**Insulation Resistance:** 5000 megohms minimum

**Contact Resistance:** (milliohms maximum)

	Initial	After Environmental
Center contact (straight cabled connectors and uncabled receptacles) .....	3.0*	4.0*
Center contact (right angle cabled connectors) .....	4.0	6.0
Outer contact (all connectors) .....	2.0	N/A
Braid to body (gold plated connectors) .....	0.5	N/A
Braid to body (nickel plated connectors) .....	5.0	N/A

**RF Leakage:** (dB minimum, tested at 2.5 GHz)

Flexible cable connectors ..... -60 dB  
Uncabled receptacles and adapters ..... N/A

**RF High Potential Withstanding Voltage:** (Vrms minimum, tested at 4 and 7 MHz)<sup>†</sup>

Connectors for RG-316; LMR-100, 195, 200 ..... 500  
Connectors for RG-58, RG-142, LMR-240, uncabled receptacles ... 670

### MECHANICAL RATINGS

**Engagement Design:** MIL-C-39012, Series SMA

**Engagement/Disengagement Force:** 2 inch-pounds maximum

**Mating Torque:** 7 to 10 inch-pounds

**Bulkhead Mounting Nut Torque:** 15 inch-pounds

**Coupling Proof Torque:** 15 inch-pounds minimum

**Coupling Nut Retention:** 60 pounds minimum

**Contact Retention:**

6 lbs. minimum axial force (captivated contacts)  
4 inch-ounce minimum torque (uncabled receptacles)

**Cable Retention:**

	Axial Force* (pounds)	Torque (in-oz)
Connectors for RG-316, LMR-100 .....	20	N/A
Connectors for LMR195, 200 .....	30	N/A
Connectors for RG-58, LMR-240 .....	40	N/A
Connectors for RG-142 .....	45	N/A

\*Or cable breaking strength whichever is less.

**Durability:** 500 cycles minimum

**ENVIRONMENTAL RATINGS** (Meets or exceed the applicable paragraph of MIL-C-39012)

**Temperature Range:** - 65°C to + 165°C

**Thermal Shock:** MIL-STD-202, Method 107, Condition B

**Corrosion:** MIL-STD-202, Method 101, Condition B

**Shock:** MIL-STD-202, 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

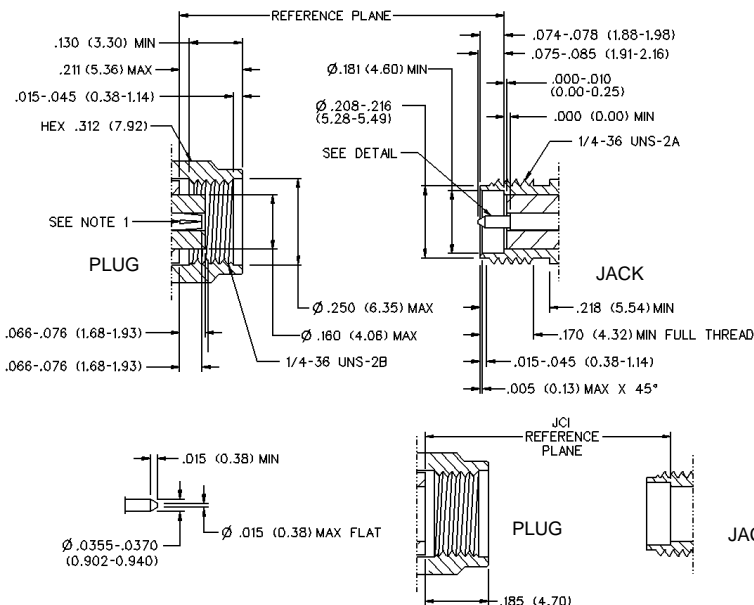
**Insulators:** PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 or Tefzel per ASTM D 3159

**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

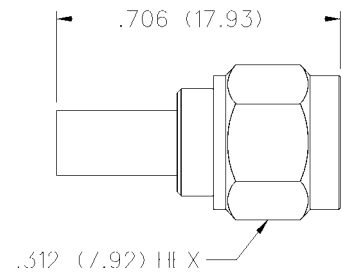
### MATING ENGAGEMENT FOR SMA REVERSE POLARITY SERIES PER FCC RULE 15 NON-STANDARD INTERFACE



### NOTES

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

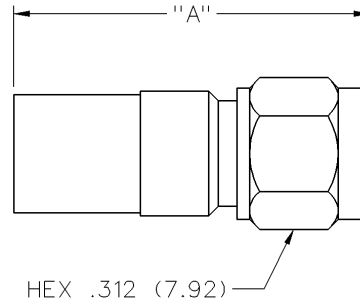
### Straight Crimp Type Plug - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG 316/U, 188, 174, 161	142-4403-001	142-4403-006
RG 316 DS, 188DS	142-4404-001	142-4404-006
RG 58/U, 141, 303	142-4407-001	142-4407-006
RG 142/U, 55, 223, 400	142-4408-001	142-4408-006

Assembly instructions page 158.  
See page 132 for Cable Assembly Tools.

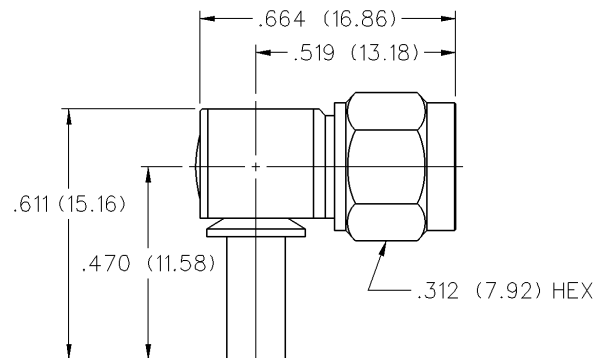
### Straight Crimp Type Plug - Captivated Contact Low Loss Cable



CABLE TYPE	VSWR & FREQ. RANGE	GOLD PLATED	NICKEL PLATED	"A"
LMR-100, HPF-100, RF-100	1.15 + .02 f (GHz) 0-12.4 GHz	142-4403-001	142-4403-006	.706 (17.93)
LMR-195, HPF-195, RF-195	1.17 + .025 f (GHz) 0-12.4 GHz	142-4407-001	142-4407-006	.706 (17.93)
LMR-200, HPF-200, RF-200	1.10 + .07 f (GHz) 0-12.4 GHz	142-4439-001	142-4439-006	.844 (21.44)
LMR-240, HPF-240, RF-240	1.10 + .07 f (GHz) 0-12.4 GHz	142-4435-001	142-4435-006	.844 (21.44)

Assembly instructions pages 158 and 159. See page 132 for Cable Assembly Tools.

### Right Angle Crimp Type Plug - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG 316/U, 188, 174, 161	142-4403-101	142-4403-106
RG 316 DS, 188DS	142-4404-101	142-4404-106
RG 58/U, 141, 303	142-4407-101	142-4407-106
RG 142/U, 55, 223, 400	142-4408-101	142-4408-106

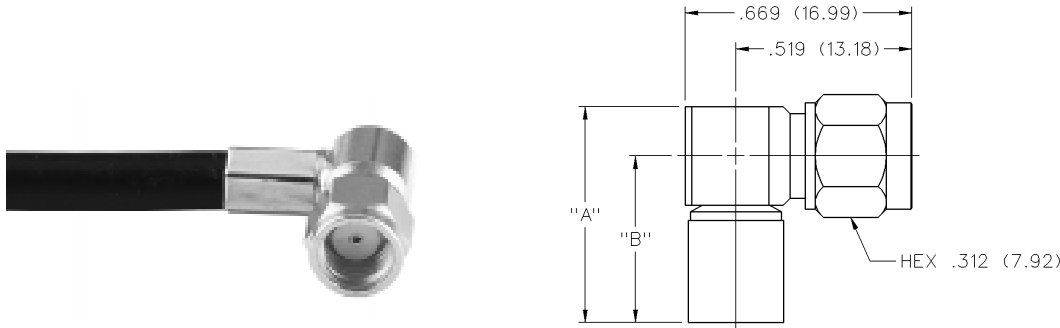
Assembly instructions page 161.  
See page 132 for Cable Assembly Tools.

# SMA Reverse Polarity - 50 Ohm

For Flexible Cable

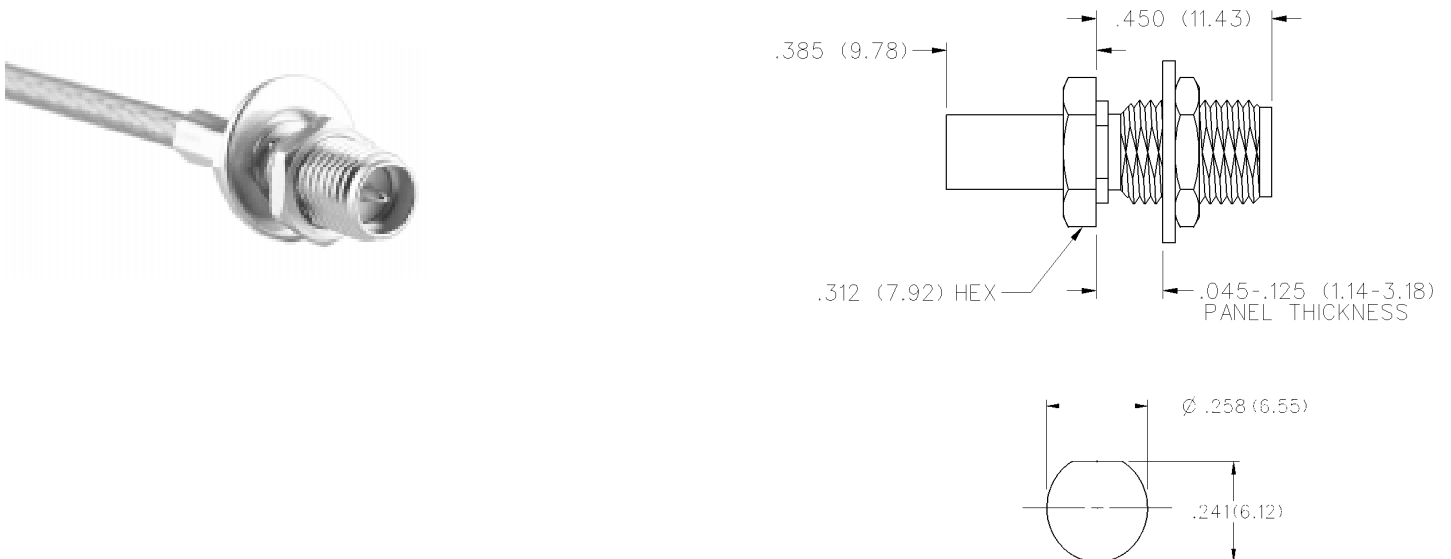
INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

## Right Angle Crimp Type Plug - Captivated Contact Low Loss Cable



CABLE TYPE	VSWR & FREQ. RANGE	GOLD PLATED	NICKEL PLATED	"A"	"B"
LMR-100, HPF-100, RF-100	1.15 + .03 f (GHz) 0-12.4 GHz	142-4403-101	142-4403-106	.611 (15.52)	.470 (11.94)
LMR-195, HPF-195, RF-195	1.17 + .06f (GHz) 0-12.4 GHz	142-4407-101	142-4407-106	.611 (15.52)	.470 (11.94)
LMR-200, HPF-200, RF-200	1.10 + .09f (GHz) 0-12.4 GHz	142-4439-101	142-4439-106	.611 (15.52)	.470 (11.94)
LMR-240, HPF-240, RF-240	1.10 + .09f (GHz) 0-12.4 GHz	142-4435-101	142-4435-106	.635 (16.13)	.490 (12.45)

## Straight Crimp Type Bulkhead Jack - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG 316/U, 188, 174, 161	142-4303-401	142-4303-406
RG 316 DS, 188DS	142-4304-401	142-4304-406
RG 58/U, 141, 303	142-4307-401	142-4307-406
RG 142/U, 55, 223, 400	142-4308-401	142-4308-406

