



Connectivity Solutions

Complete or Partial Part #,
Competitor Part # or
Keywords.

Wireless

CATV

Audio & Video

Networking &
Structured Wiring

Military & Aerospace

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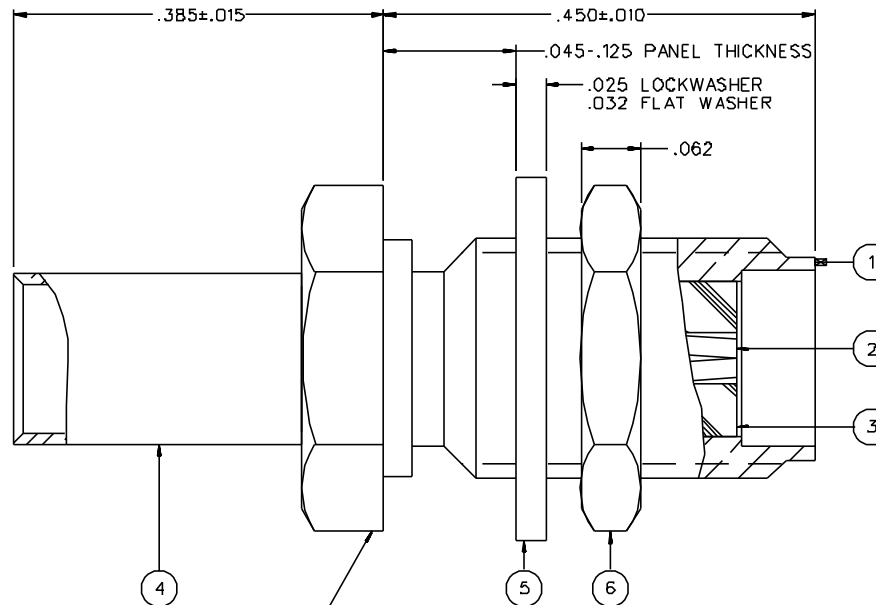
Product Detail



Product Line:	Johnson (Click for customer service)
Part Number:	142-0304-411
Description:	SMA Straight Crimp Type Bulkhead Jack - 3 Piece, Solder or Crimp Captivated Contact
Product Family:	SMA
Body Material:	Brass
Body Style:	Bulkhead
Color / Finish:	Gold
Frequency:	12.4 GHz
Genders:	Female
Ohm:	50
Product Type:	Cabled
RoHS Compliant:	Yes

20070523-1523

PART NUMBER	ITEM ① BODY	ITEM ② CONTACT	ITEM ③ INSULATOR	ITEM ④ CRIMP SLEEVE	ITEM ⑤ WASHER	ITEM ⑥ NUT
142-0304-411	BRASS GOLD PL .00001 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN	BERYLLIUM COPPER GOLD PL .00005 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN	TEFLON	COPPER GOLD PL .00001 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN	BRASS (FLAT WASHER) GOLD PL .00001 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN	BRASS GOLD PL .00001 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN
142-0304-416	BRASS NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN	BERYLLIUM COPPER GOLD PL .00005 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN	TEFLON	COPPER NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN	BRASS (FLAT WASHER) NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN	BRASS NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN
142-0304-417	BRASS NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN	BERYLLIUM COPPER GOLD PL .00005 MIN OVER NICKEL PL .00005 MIN OVER COPPER PL .00005 MIN	TEFLON	COPPER NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN	BRONZE (INTERNAL TOOTH LOCKWASHER) NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN	BRASS NICKEL PL .0001 MIN OVER COPPER PL .00005 MIN



NOTES:

1. SPECIFICATIONS:

IMPEDANCE: 50 OHMS
 FREQUENCY RANGE: 0-12.4 GHz
 VSWR: 1.15-.02 F MAX (F IN GHz)
 WORKING VOLTAGE: 250 VRMS MAX AT SEA LEVEL
 DIELECTRIC WITHSTANDING VOLTAGE: 750 VRMS MIN AT SEA LEVEL
 INSULATION RESISTANCE: 5000 MEGOHM MIN
 CONTACT RESISTANCE:
 CENTER CONTACT - INITIAL 3.0 MILLIOHM MAX, AFTER ENVIRONMENTAL 4.0 MILLIOHM MAX
 OUTER CONDUCTOR - INITIAL 2.0 MILLIOHM MAX
 AFTER ENVIRONMENTAL NOT APPLICABLE
 BODY TO CABLE - 0.5 MILLIOHM MAX (GOLD PLATED)
 5.0 MILLIOHM MAX (NICKEL PLATED)
 CORONA LEVEL: 190 VOLTS MIN AT 70,000 FEET
 INSERTION LOSS: .06 ✓ F dB MAX (F IN GHz) AT 6 GHz
 RF LEAKAGE: -60 DB MIN AT 2.5 GHz
 RF HIGH POTENTIAL WITHSTANDING VOLTAGE: 500 VRMS MIN AT 4 AND 7 MHZ

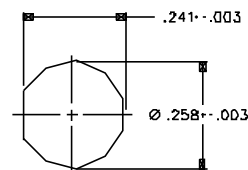
MECHANICAL:

ENGAGE/DISENGAGE TORQUE: 2 INCH-POUNDS MAX
 MATING TORQUE: 7-10 INCH POUNDS
 COUPLING PROOF TORQUE: NOT APPLICABLE
 COUPLING NUT RETENTION: NOT APPLICABLE
 CONTACT RETENTION: 6 LBS MIN
 CABLE ACCEPTABILITY: RG 316/U DOUBLE SHIELDED
 RG 188/U DOUBLE SHIELDED
 CABLE HEX CRIMP SIZE: .151
 CONTACT CRIMP TOOL: MIL M22520/1-01
 CABLE RETENTION: 20 LBS MIN AXIAL FORCE
 DURABILITY: 500 CYCLES MIN

ENVIRONMENTAL:

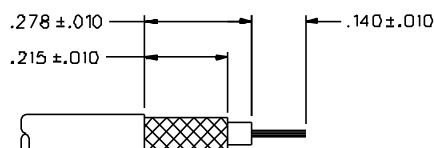
(MEETS OR EXCEEDS THE APPLICABLE PARAGRAPH OF MIL-C-39012)
 THERMAL SHOCK: MIL-STD-202, METHOD 107, CONDITION B,
 EXCEPT B5 °C HIGH TEMP
 OPERATING TEMPERATURE: -65° C TO 165° C
 CORROSION: MIL-STD-202, METHOD 101, CONDITION B
 SHOCK: MIL-STD-202, METHOD 213, CONDITION I
 VIBRATION: MIL-STD-202, METHOD 204, CONDITION D
 MOISTURE RESISTANCE: MIL-STD-202, METHOD 106

2X HEX .312



MOUNTING HOLE

4:1



CABLE STRIP DIMENSIONS

4:1

DRAWING NO.									
C - 142-0304-411/420									
0 REVISIONS									
ENGINEERING RELEASE									
I	8-7-92	R	H	A	B	B	B	8-11-92	ECN 41157
VERSION UPDATE									
1a	4-18-95	R	H	A	B	B	B	4-26-95	ECN 43196
ADDED: P/N 142-0304-417									
* REVISION NUMBER FOLLOWED BY AN ALPHA *									
* CHARACTER INDICATES DRAWING CLARIF.									
* CATION OR PART NUMBER ADDITION ONLY.									
1b	5-13-97	R	H	A	B	B	B	ECN 44727	

CUSTOMER DRAWING

THIS DRAWING TO BE INTERPRETED
PER ANSI Y 14.5M - 1982

"μSTATION"

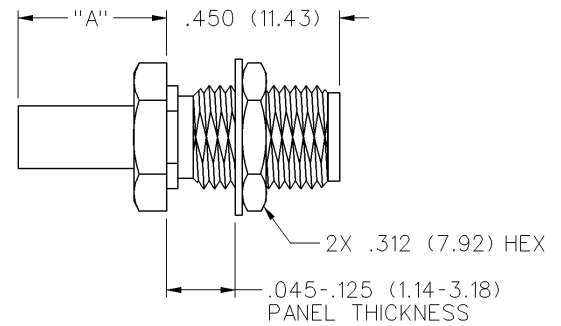
COMPANY CONFIDENTIAL

TOLERANCE UNLESS OTHERWISE SPECIFIED		DRAWN BY TAK	DATE 5-14-92	 289 Johnson Ave. P.O. Box 1732 Waseca, MN 56093-0832
DECIMALS .XX mm	CHECKED BY	DATE	TITLE JACK ASSEMBLY, STRAIGHT CABLED BULKHEAD	
.XXX REF mm	APPROVED BY RJB	DATE 8-7-92	CODE NO.	DRAWING NO. C - 142-0304-411/420
MATL	APPROVED BY	DATE		
FINISH	RELEASE DATE 8-11-92	SCALE 10:1	U/M INCH	SHEET 2 OF 2



299 Johnson Ave.
P.O. Box 1732
Waseca, MN 56093-0832

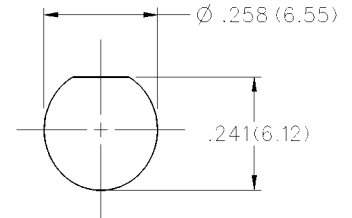
SMA 50 Ohm Straight Crimp Type Bulkhead Jack (3-piece) - Solder or Crimp Captivated Contact



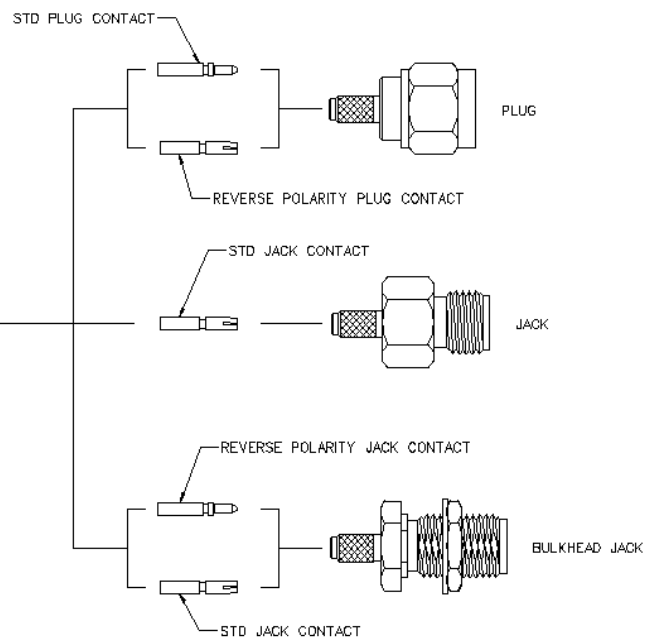
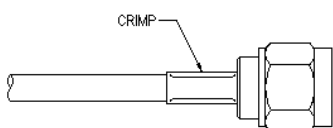
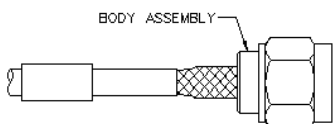
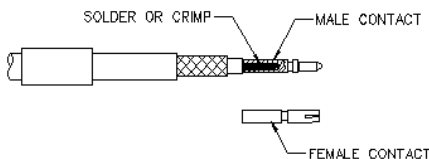
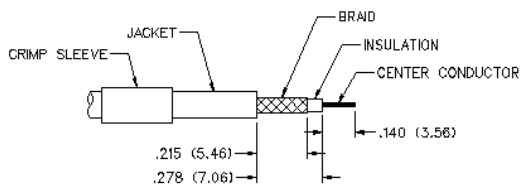
CABLE TYPE	VSWR & FREQ. RANGE	GOLD PLATED	NICKEL PLATED	"A"
RG-188 DS, RG-316 DS	1.15 + .02 f (GHz) 0-12.4 GHz	142-0304-411	142-0304-416	.385 (9.78)

1. Identify connector parts. (3 piece parts - except bulkhead)
2. Strip cable to dimensions shown. Do not nick braid or center conductor. Tin center conductor if contact will be solder attached. Do not tin center conductor if contact is to be crimp attached. When stripping LMR-100 low loss cable, remove foil back to where cable jacket is stripped. A wire stripper of correct size is recommended for this step. Slide heat shrink (as applicable) and crimp sleeve onto jacket of cable.
3. Assemble contact onto cable as shown.
Solder Attachment: Solder contact to center conductor through solder hole using .020 (0.51) diameter solder. Use a minimum amount of solder for a good joint.
Crimp Attachment: Crimp contact to center conductor using Johnson Components™ Hand Tool 144-0000-910, setting #2, with positioner 141-0000-907. Crimp location should be centered between end of contact and X-hole. Crimp attachment to solid center conductor cables is not recommended.
4. Flare braid and slide body assembly over contact and under braid. Then seat body assembly firmly onto contact. The cable may have to be held in a clamping fixture. Arrange braid uniformly around crimp stem. Slide crimp sleeve forward and crimp using recommended crimp tool. Slide heat shrink forward and shrink (as applicable).

Mounting hole layout



CABLE GROUP	PART NUMBER	CRIMP HEX
RG-316DS, 188DS	142-0304-411/416	.151 (3.83)



SMA - 50 Ohm Connectors

Specifications

ELECTRICAL RATINGS

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)†

Connectors for Cable Type	Sea Level	70K Feet
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 for RG-178	125
Connectors for RG-316; LMR-100, 195, 200	190
Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, uncabled receptacles, .141 semi-rigid w/o contact	250
Connectors for .141 semi-rigid with contact and adapters	375
Dummy loads	N/A

Insertion Loss: (dB maximum)

Straight flexible cable connectors and adapters	0.06	$\sqrt{f}$ (GHz), tested at 6 GHz
Right angle flexible cable connectors	0.15	$\sqrt{f}$ (GHz), tested at 6 GHz
Straight semi-rigid cable connectors with contact	0.03	$\sqrt{f}$ (GHz), tested at 10 GHz
Right angle semi-rigid cable connectors	0.05	$\sqrt{f}$ (GHz), tested at 10 GHz
Straight semi-rigid cable connectors w/o contact	0.03	$\sqrt{f}$ (GHz), tested at 16 GHz
Straight low loss flexible cable connectors	0.06	$\sqrt{f}$ (GHz), tested at 1 GHz
Right Angle low loss flexible cable connectors	0.15	$\sqrt{f}$ (GHz), tested at 1 GHz
Uncabled receptacles, field replaceable, dummy loads		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 and adapters)	4.0	6.0
Field replaceable connectors	6.0	8.0
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

*N/A where the cable center conductor is used as a contact

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

Flexible cable connectors, adapters and .141 semi-rigid connectors w/o contact	-60 dB
Field replaceable w/o EMI gasket	-70 dB
.086 semi-rigid connectors and .141 semi-rigid connectors with contact, and field replaceable with EMI Gasket	-90 dB
Two-way adapters	-90 dB
Uncabled receptacles, dummy loads	N/A

RF High Potential Withstanding Voltage: (Vrms minimum, tested at 4 and 7 MHz)†

Connectors for RG-178	335
Connectors for RG-316; LMR-100, 195, 200	500
Connectors for RG-58, RG-142, LMR-240, .086 semi-rigid, .141 semi-rigid cable w/o contact, uncabled receptacles	670
Connectors for .141 semi-rigid with contact and adapters	1000

Power Rating (Dummy Load): 0.5 watt @ + 25°C, derated to 0.25 watt @ +125°C

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*(lbs)	Torque (in-oz)
Connectors for RG-178	10	N/A
Connectors for RG-316, LMR-100	20	N/A
Connectors for LMR-195, 200	30	N/A
Connectors for RG-58, LMR-240	40	N/A
Connectors for RG-142	45	N/A
Connectors for .086 semi-rigid	30	16
Connectors for .141 semi-rigid	60	55

*Or cable breaking strength whichever is less.

Durability: 500 cycles minimum

100 cycles minimum for .141 semi-rigid connectors w/o contact

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

†Avoid user injury due to misapplication. See safety advisory definitions inside front cover.

Specifications



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

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

Technical drawings showing the JCI Reference Plane for Plug and Jack components.

Left Drawing (General Dimensions):

- REFERENCE PLANE
- .050 (1.27) MIN
- .100 (2.54) MIN
- .015 (0.38) MIN
- Ø .0355-.0370 (0.902-0.940)
- Ø .015 (0.38) MAX FLAT

Right Drawing (Plug and Jack Details):

- JCI REFERENCE PLANE
- PLUG
- JACK
- .109 (2.77)
- .076 (1.93)

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