

SMB Connectors - 50 Ohm Connectors

Bulkhead Mount and Panel Mount	14
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SMB - 50 Ohm Connectors

Specifications

INCHES (MILLIMETERS) • CUSTOMER DRAWINGS AVAILABLE ON REQUEST

ELECTRICAL RATINGS

Impedance: 50 Ohms
Frequency Range: Connectors 0-4 GHz
 Dummy loads 0-1 GHz

VSWR: (f = GHz)

	Straight Cabled	Right Angle Cabled
RG-178 cable	1.30 + .04f	1.45 + .06f
RG-316, RG-58, and .086 Semi-Rigid cable	1.25 + .04f	1.35 + .04f
Adapters	1.20 + .04f	

Uncabled receptacles, dummy loads N/A

Working Voltage: (VRMS maximum)[†]

Connectors for Cable Type	Sea Level	70K Feet
RG-178	250	60
RG-316, RG-58, .086 Semi-Rigid uncabled receptacles, adapters	335	85
Dummy loads		N/A

Dielectric Withstanding Voltage: (VRMS minimum at sea level)[†]

Connectors for RG-178	750
Connectors for RG-316, RG-58, .086 Semi-Rigid, uncabled receptacles, adapters	1000
Dummy loads	N/A

Corona Level: (Volts minimum at 70,000 feet)[†]

Connectors for RG-178	185
Connectors for RG-316, RG-58, .086 Semi-Rigid	250
Uncabled receptacles, adapters, dummy loads	N/A

Insertion Loss: (dB maximum, tested at 1.5 GHz)

Straight cable connectors	0.30 dB
Right angle cable connectors	0.60 dB
Uncabled receptacles, adapters and dummy loads	N/A

Insulation Resistance: 1000 megohms minimum

Contact Resistance: (milliohms maximum)	Initial	After Environmental
Center contact (straight cabled connectors and uncabled receptacles)	6.0	8.0
Center contact (right angle cabled connectors and adapters)	12.0	16.0
Outer contact (gold plated connectors)	1.0	1.5
Outer contact (nickel plated connectors)	2.5	3.5
Braid to body (gold plated connectors)	1.0	N/A
Braid to body (nickel plated connectors)	2.5	N/A

RF Leakage: (dB minimum tested at 2.5 GHz)

Cable connectors	-55 dB
Uncabled receptacles, adapters and dummy loads	N/A

RF High Potential Withstanding Voltage:

(VRMS minimum, tested at 4 and 7 MHz)[†]

Connectors for RG-178	500
Connectors for RG-316, RG-58	700
Uncabled receptacles and adapters	600
Dummy loads	N/A

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

MECHANICAL RATINGS

Engagement Design: mil-c-39012, Series SMB

Engagement/Disengagement Force: 2 pounds min to 14 pounds maximum axial force

Contact Retention: 4 lbs. min axial force (captivated contacts)
 1 inch-ounce min torque (uncabled receptacles)

Cable Retention:	Axial Force* (lbs)	Torque (in-oz)
Connectors for RG-178	10	N/A
Connectors for RG-316	20	N/A
Connectors for RG-58	40	16
Connectors for .086 Semi-Rigid	30	16

* or cable breaking strength whichever is less.

Durability: 500 cycles minimum

ENVIRONMENTAL RATINGS

(Meets or exceeds the applicable paragraph of MIL-C-39012)

Temperature Range: Connectors -65°C to +165°C
 Dummy loads -65°C to +125°C

Thermal Shock: MIL-STD-202, Method 107, Condition B (N/A dummy loads)

Corrosion: MIL-STD-202, Method 101, Condition B (N/A dummy loads)

Shock: MIL-STD-202, Method 213, Condition B (N/A dummy loads)

Vibration: MIL-STD-202, Method 204, Condition B (N/A dummy loads)

MATERIAL SPECIFICATIONS

Bodies: Brass per QQ-B-626 or zinc per ASTM B86-71, 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.

Insulators: PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 OR Teflon PFA 340

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, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

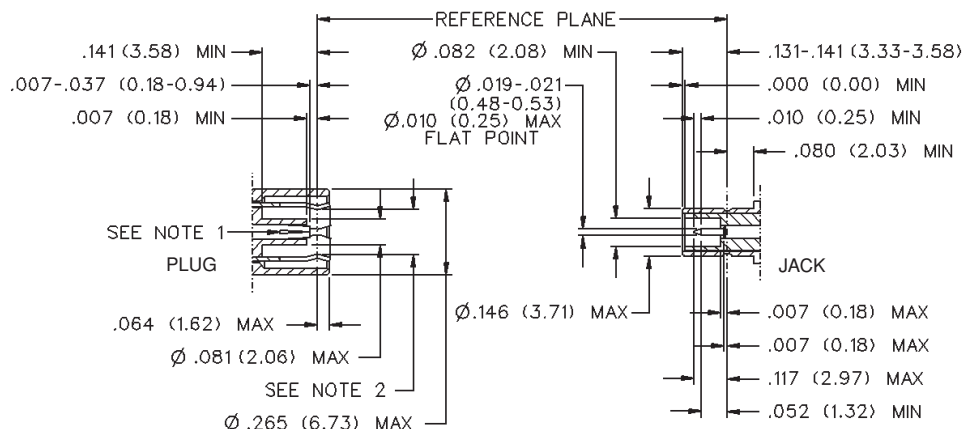
Mounting Hardware: Brass (nuts) per QQ-B-626 or phosphor bronze (lockwashers) QQ-B-750, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

Cover Rings: Phosphor Bronze per QQ-B-750, gold plated per MIL-G-45204 .00001 min. or nickel plated per QQ-N-290.

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

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

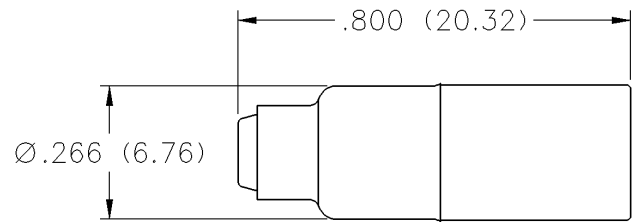
Mating Engagement for SMB Series



Notes

1. ID of contact to meet VSWR mating characteristics and connector durability when mated with a dia .019 /0.53 male contact.
2. Must meet the force to engage and disengage when mated with mating part.

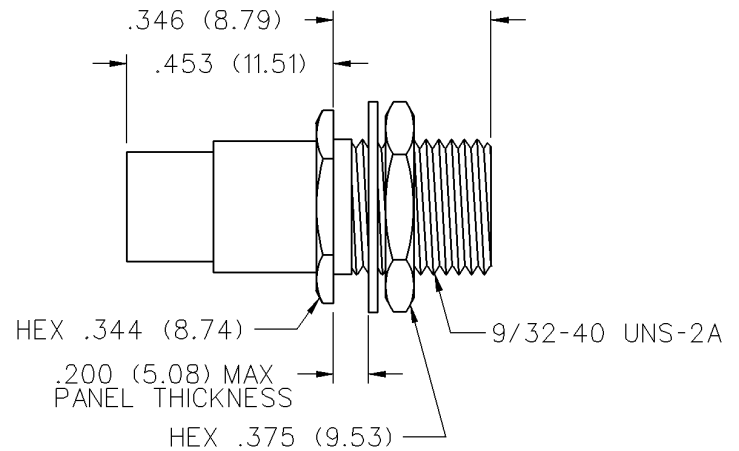
Straight Solder Type Plug - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
.086 Semi-Rigid	131-3693-001	131-3693-016

Assembly instructions page 237.

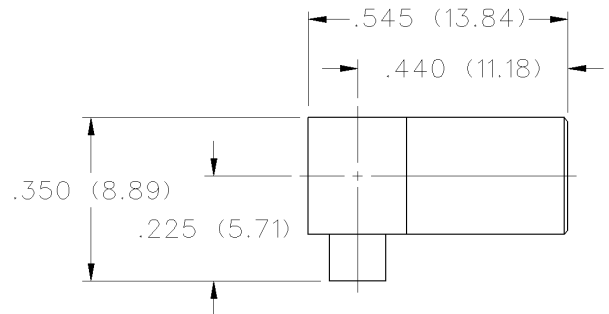
Straight Solder Type Bulkhead Plug - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
.141 Semi-Rigid	131-3694-401	131-3694-406

Assembly instructions page 237.
Mounting hole Dia. .290 (7.05).

Right Angle Solder Type Plug - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
.086 Semi-Rigid	131-3693-101	131-3693-116

Assembly instructions page 238.

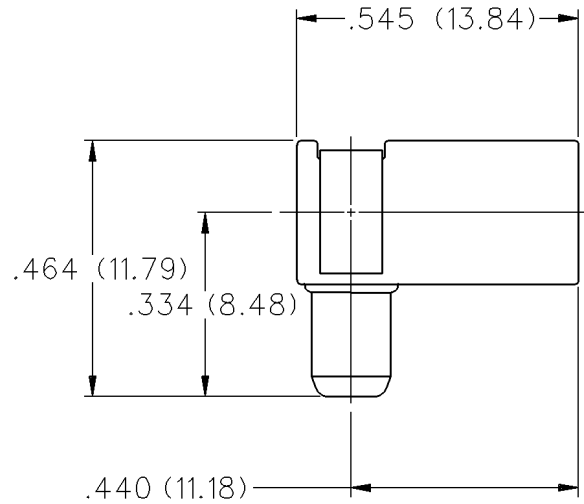
SMB - 50 Ohm Connectors

For Semi-Rigid Cable

INCHES (MILLIMETERS) • CUSTOMER DRAWINGS AVAILABLE ON REQUEST



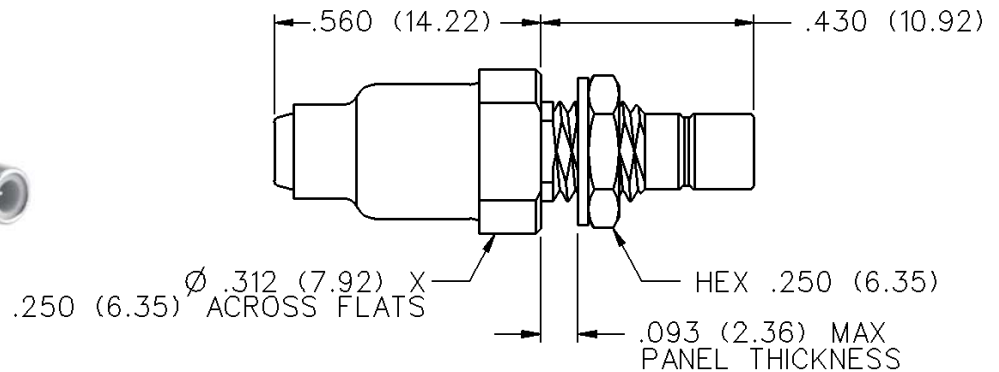
Right Angle Solder Type Plug - Die Cast - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
.086 Semi-Rigid	131-1693-101	131-1693-116

Assembly instructions page 238.

Straight Bulkhead Solder Type Jack - Captivated Contact

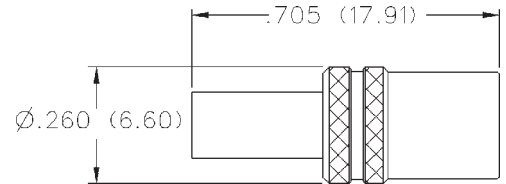


CABLE TYPE	GOLD PLATED	NICKEL PLATED
.086 Semi-Rigid	131-3593-401	131-3593-406

Assembly instructions page 237.

Mounting hole layout figure 5 page 201.

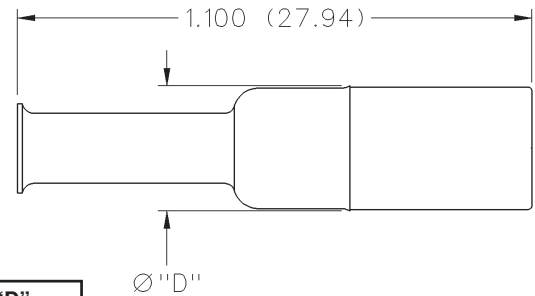
Straight Crimp Type Plug (3-Piece) - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-161/U, 174, 179, 187, 188, 316	131-3403-021	131-3403-026
RG-316 DS, 188 DS, 179 DS, 187 DS	131-3404-021	131-3404-026
RG-58/U, 141, 303	131-3407-021	131-3407-026

Assembly instructions page 236.
See page 190 for Cable Assembly Tools.

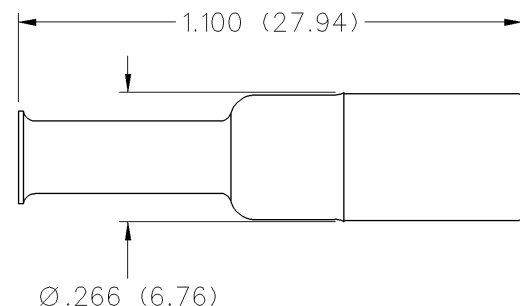
Straight Crimp Type Plug - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED	CRIMP CONTACT	"D"
RG-178/U, 196	131-3402-001	131-3402-016	No	.266 (6.76)
RG-161/U, 174, 179, 187, 188, 316	131-3403-001	131-3403-016	Yes	.266 (6.76)
RG-316 DS, 188 DS, 179 DS, 187 DS	131-3404-001	131-3404-016	Yes	.266 (6.76)
RG-58/U, 141, 303	131-3407-001	131-3407-006	Yes	.270 (6.86)

Assembly instructions page 239.
See page 190 for Cable Assembly Tools.

Straight Crimp Type Plug - Die Cast - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-161/U, 174, 179, 187, 188, 316	131-1403-001	131-1403-016
RG-316 DS, 188 DS, 179 DS, 187 DS	131-1404-001	131-1404-016

Assembly instructions page 239.
See page 190 for Cable Assembly Tools.

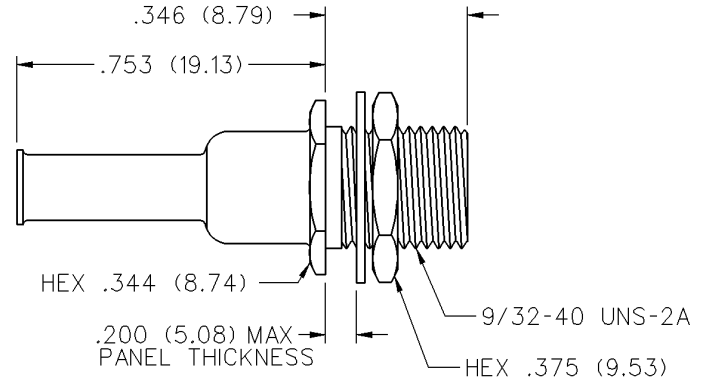
SMB - 50 Ohm Connectors

For Flexible Cable

INCHES (MILLIMETERS) • CUSTOMER DRAWINGS AVAILABLE ON REQUEST



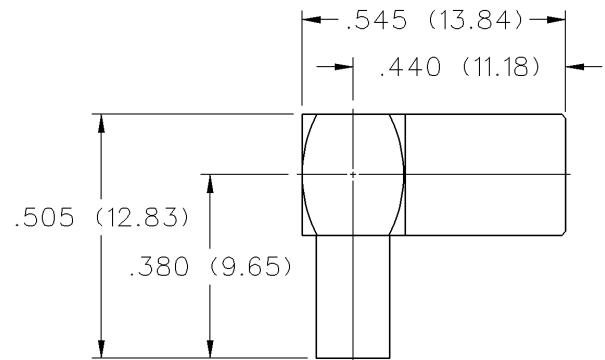
Straight Crimp Type Bulkhead Plug - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-161/U, 174, 179, 187, 188, 316	131-3403-401	131-3403-406
RG-316 DS, 188 DS, 179 DS, 187 DS	131-3404-401	131-3404-406

Assembly instructions page 239.
See page 190 for Cable Assembly Tools.
Mounting hole Dia. .290 (7.05).

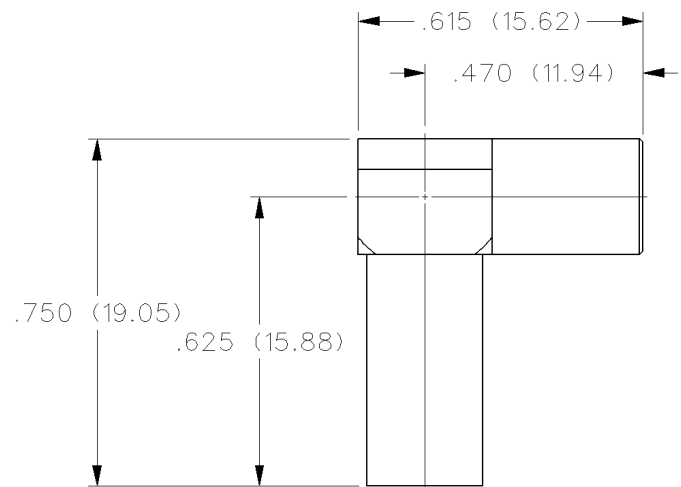
Right Angle Crimp Type Plug - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-178/U, 196	131-3402-101	131-3402-116
RG-161/U, 174, 179, 187, 188, 316	131-3403-101	131-3403-116
RG-316 DS, 188 DS, 179 DS, 187 DS	131-3404-101	131-3404-116

Assembly instructions page 240.
See page 190 for Cable Assembly Tools.

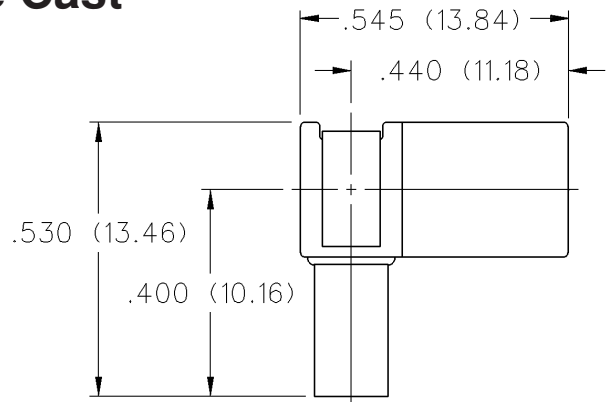
Right Angle Crimp Type Plug - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-58/U, 141, 303	131-3407-101	131-3407-106

Assembly instructions page 240.
See page 190 for Cable Assembly Tools.

Right Angle Crimp Type Plug - Die Cast - Captivated Contact

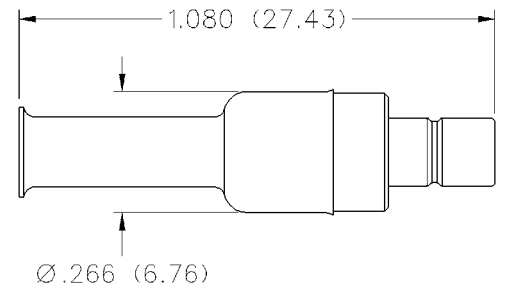


CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-178/U, 196	131-1402-101	131-1402-116
RG-161/U, 174, 179, 187, 188, 316	131-1403-101	131-1403-116
RG-316 DS, 188 DS, 179 DS, 187 DS	131-1404-101	131-1404-116

Assembly instructions page 240.

See page 190 for Cable Assembly Tools.

Straight Crimp Type Jack - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED	CRIMPABLE CONTACT
RG-178/U, 196	131-3302-001	131-3302-006	No
RG-161/U, 174, 179, 187, 188, 316	131-3303-001	131-3303-006	Yes

Assembly instructions page 239.

See page 190 for Cable Assembly Tools.

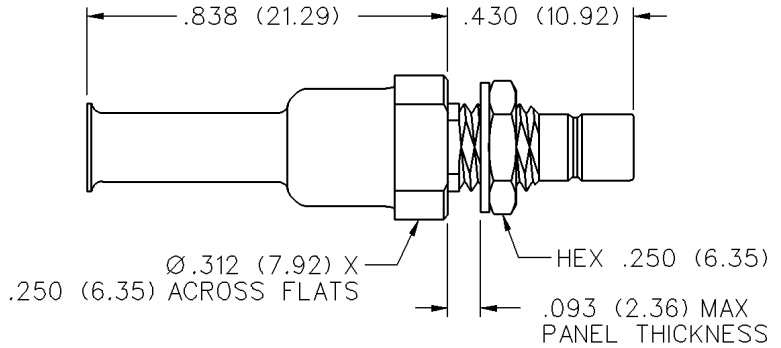
SMB - 50 Ohm Connectors

For Flexible Cable

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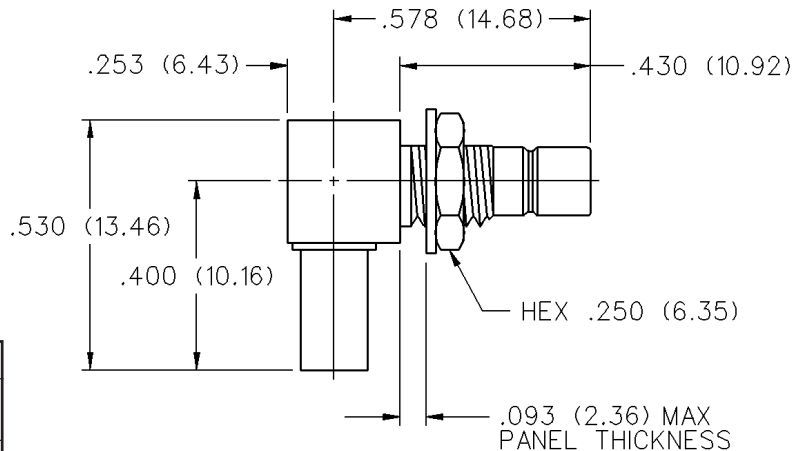
Straight Crimp Type Bulkhead Jack - Solder or Crimp Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-161/U, 174, 179, 187, 188, 316	131-3303-401	131-3303-406
RG-316 DS, 188 DS, 179 DS, 187 DS	131-3304-401	131-3304-406

Assembly instructions page 239.
Mounting hole layout figure 5 page 201.
See page 190 for Cable Assembly Tools.

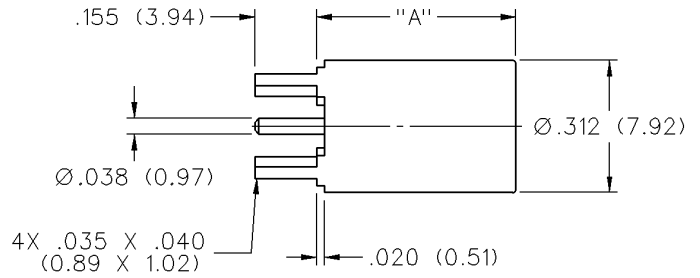
Right Angle Crimp Type Bulkhead Jack - Captivated Contact



CABLE TYPE	GOLD PLATED	NICKEL PLATED
RG-161/U, 174, 179, 187, 188, 316	131-3303-501	131-3303-506
RG-316 DS, 188 DS, 179 DS, 187 DS	131-3304-501	131-3304-506

Assembly instructions page 240.
Mounting hole layout figure 5 page 201.
See page 190 for Cable Assembly Tools.

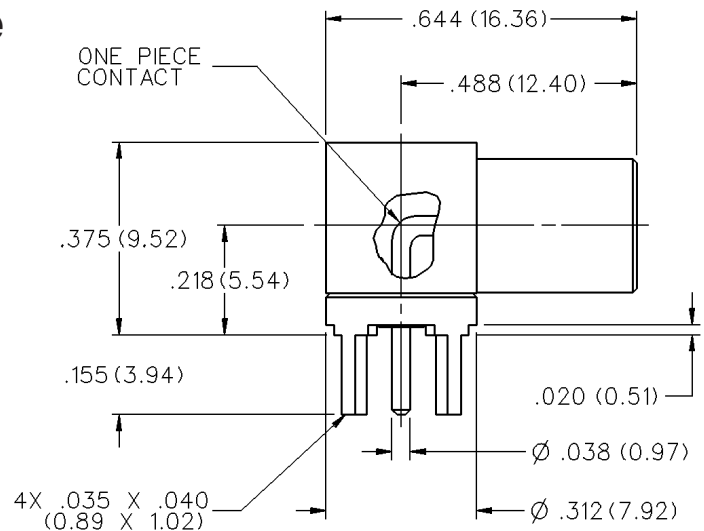
Straight Plug Receptacle



GOLD PLATED	NICKEL PLATED	"A"
131-3801-201	131-3801-216	.395 (10.03)
131-3801-231	131-3801-236	.500 (12.70)

Mounting hole layout figure 4 page 201.

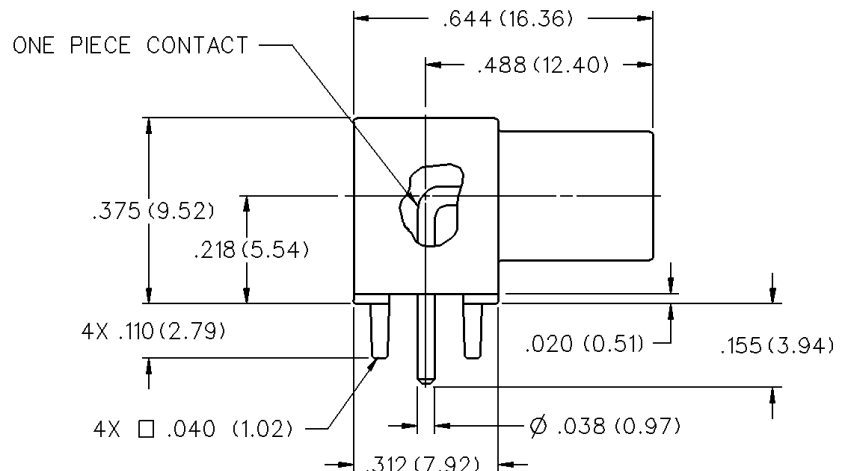
Right Angle Plug Receptacle



GOLD PLATED	NICKEL PLATED
131-3801-301	131-3801-316

Mounting hole layout figure 4 page 201.

Right Angle Plug Receptacle - Die Cast



GOLD PLATED	NICKEL PLATED
131-1801-371	131-1801-376

Mounting hole layout figure 4 page 201.

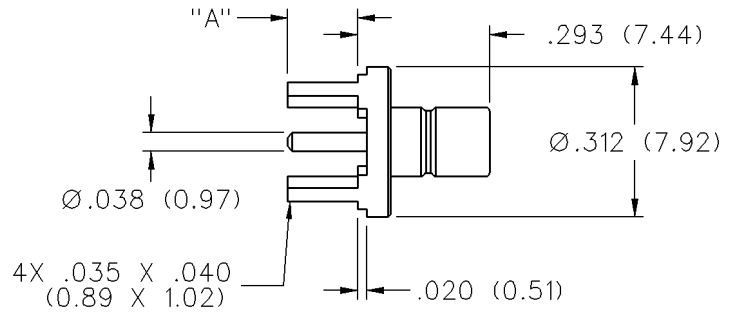
SMB - 50 Ohm Connectors

PC Mount

INCHES (MILLIMETERS) • CUSTOMER DRAWINGS AVAILABLE ON REQUEST



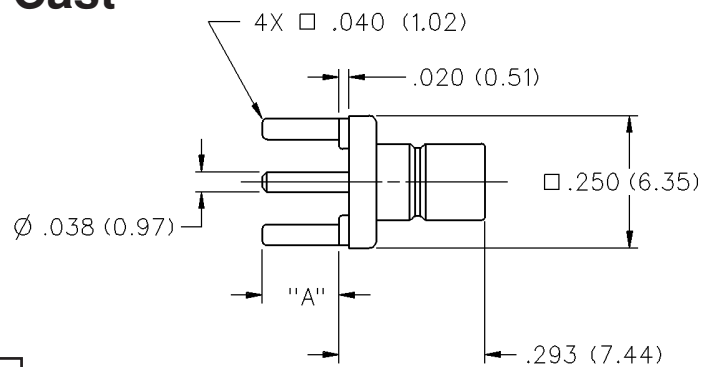
Straight Jack Receptacle



GOLD PLATED	NICKEL PLATED	IR COMPATIBLE*	"A"
131-3701-201	131-3701-206		.155 (3.94)
131-3701-211	131-3701-216	131-3701-215*	.110 (2.79)

* Tin/Lead solder dipped legs for IR Reflow Compatibility. Mounting hole layout figure 4 page 201.

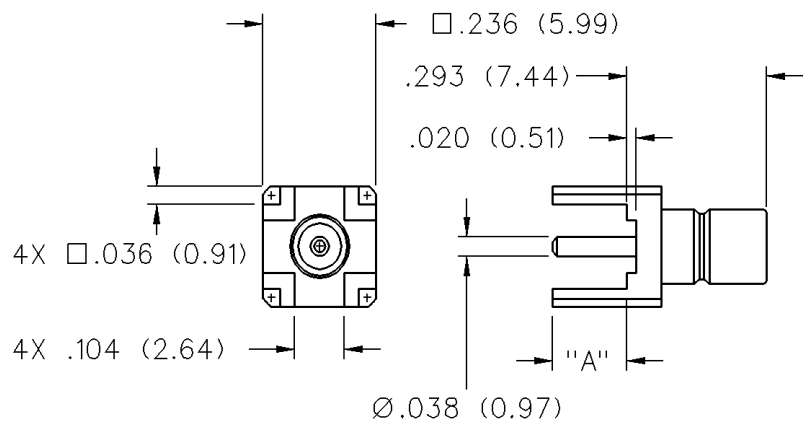
Straight Jack Receptacle - Die Cast



GOLD PLATED	NICKEL PLATED	IR COMPATIBLE*	"A"
131-1701-201	131-1701-206		.155 (3.94)
131-1701-211	131-1701-216	131-1701-215*	.095 (2.41)

* Tin/Lead solder dipped legs for IR Reflow Compatibility. Mounting hole layout figure 4 page 201.

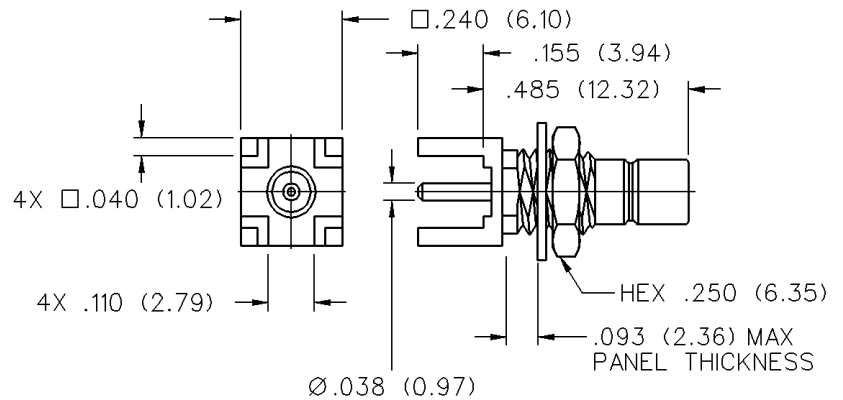
Straight Jack Receptacle



GOLD PLATED	NICKEL PLATED	IR COMPATIBLE*	"A"
131-3701-261	131-3701-266		.155 (3.94)
131-3701-271	131-3701-276	131-3701-275	.095 (2.41)

* Tin/Lead solder dipped legs for IR Reflow Compatibility. Mounting hole layout figure 4 page 201.

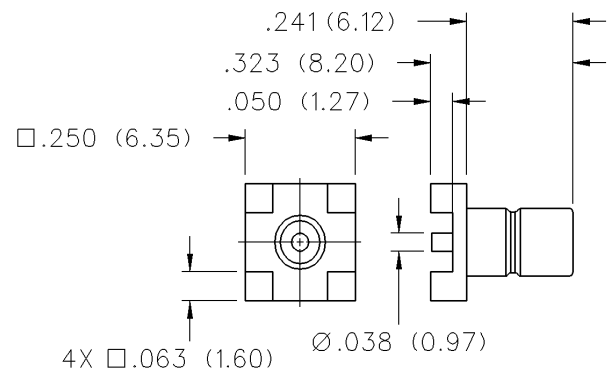
Straight Bulkhead Jack Receptacle



GOLD PLATED	NICKEL PLATED
131-3701-231	131-3701-236

Mounting hole layout figures 4 and 5 page 201.

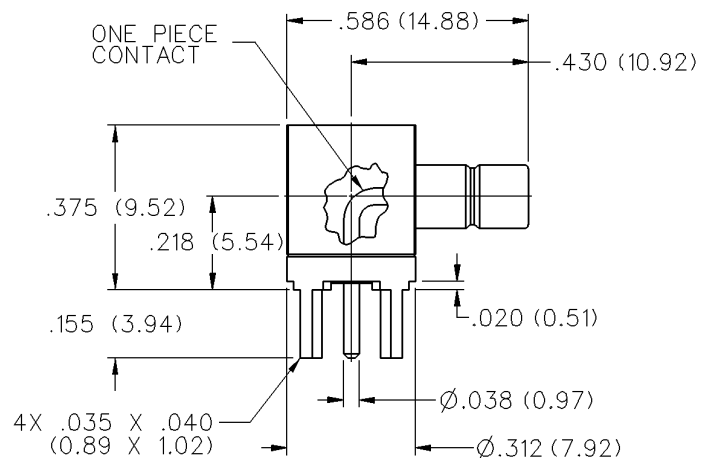
Straight Jack Receptacle - Surface Mount



GOLD PLATED
131-3711-201

Recommended Land Pattern figure 9 page 201.

Right Angle Jack Receptacle



GOLD PLATED	NICKEL PLATED
131-3701-301	131-3701-306

Mounting hole layout figure 4 page 201.

SMB - 50 Ohm Connectors

PC Mount

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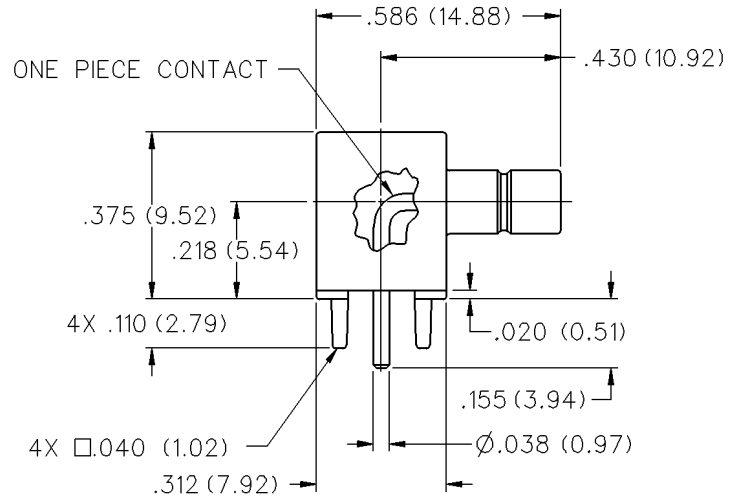


Right Angle Jack Receptacle - Die Cast

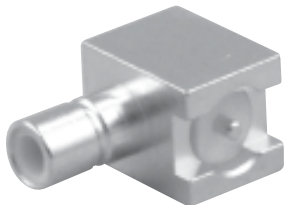


GOLD PLATED	NICKEL PLATED
131-1701-371	131-1701-376

Mounting hole layout figure 4 page 201.

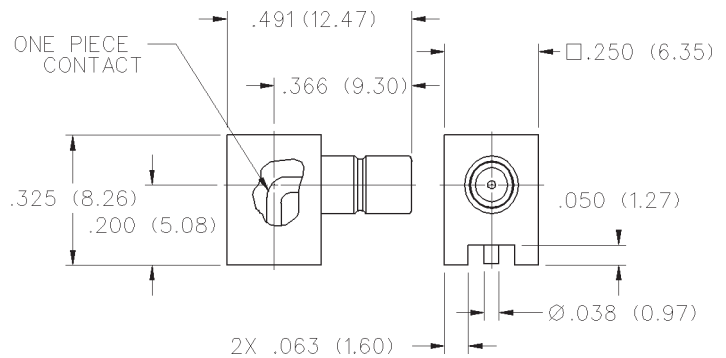


Right Angle Surface Mount Jack Receptacle



GOLD PLATED STANDARD PACKAGING	GOLD PLATED TAPE AND REEL
131-3711-301	131-3711-302 425 pcs/reel

Mounting hole layout figure 9 page 201.

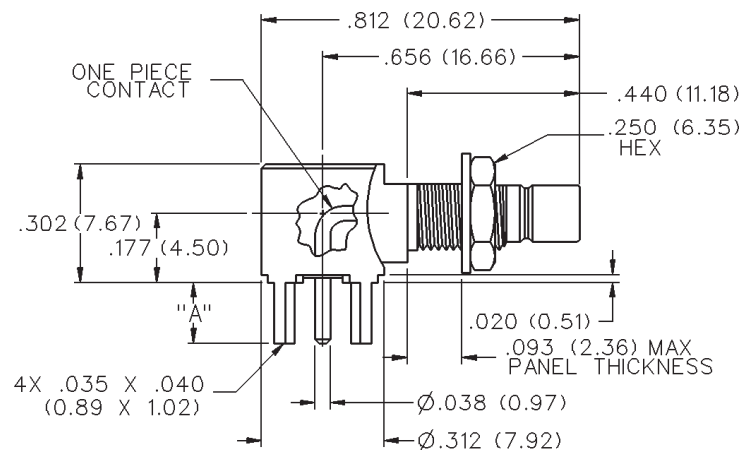


Right Angle Bulkhead Jack Receptacle

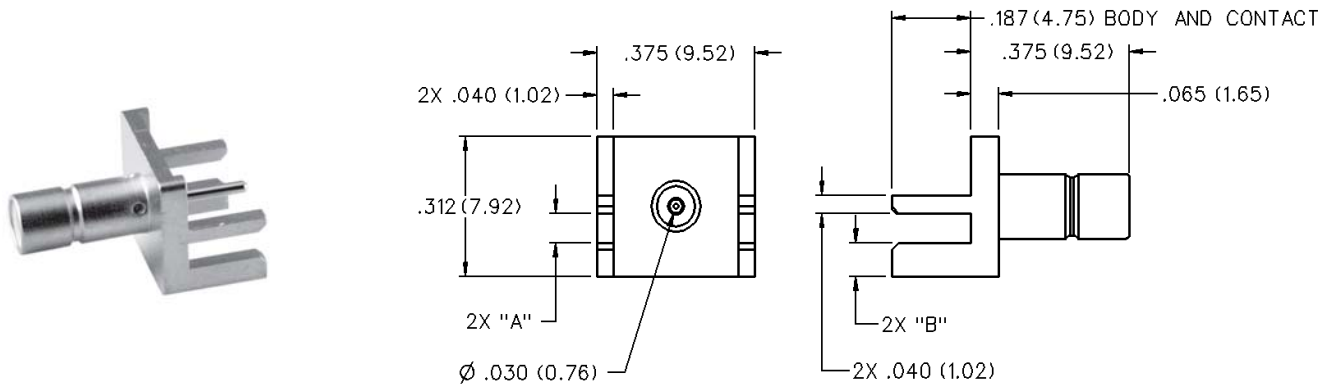


GOLD PLATED	NICKEL PLATED	"A"
131-3701-501	131-3701-506	.083 (2.11)
131-3701-511	131-3701-516	.110 (2.79)
131-3701-341	131-3701-346	.155 (3.94)

Mounting hole layout figures 4 and 5 page 201.

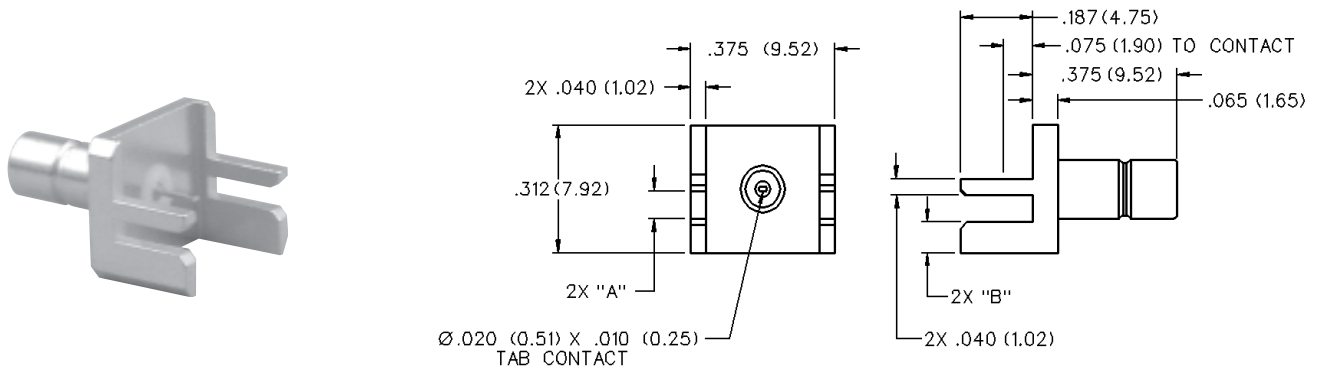


End Launch Jack Receptacle - Round Contact



GOLD PLATED	NICKEL PLATED	BOARD THICKNESS	"A"	"B"
131-3701-801	131-3701-806	.062 (1.57)	.068 (1.73)	.073 (1.85)
131-3701-821	131-3701-826	.042 (1.07)	.048 (1.22)	.093 (2.36)

End Launch Jack Receptacle - Tab Contact



GOLD PLATED	NICKEL PLATED	BOARD THICKNESS	"A"	"B"
131-3701-811	131-3701-816	.062 (1.57)	.068 (1.73)	.083 (2.11)
131-3701-831	131-3701-836	.042 (1.07)	.048 (1.22)	.103 (2.62)

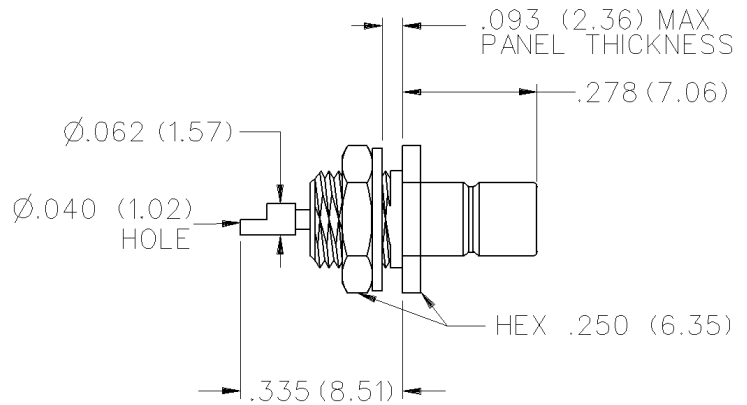
SMB - 50 Ohm Connectors

Bulkhead and Panel Mount

INCHES (MILLIMETERS) • CUSTOMER DRAWINGS AVAILABLE ON REQUEST



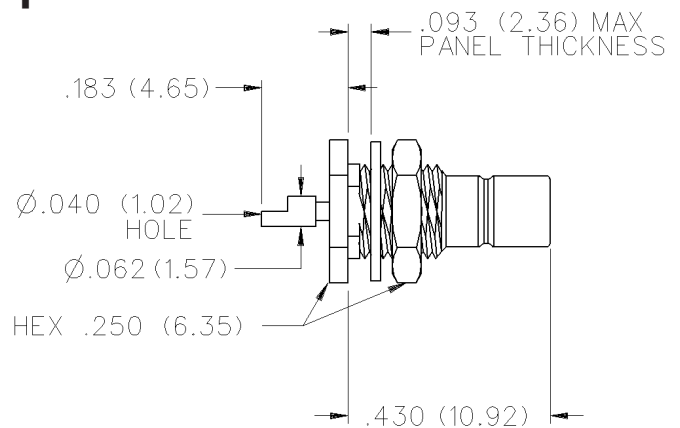
Front Mount Bulkhead Jack Receptacle



GOLD PLATED	NICKEL PLATED
131-3701-411	131-3701-416

Mounting hole layout figure 5 page 201.

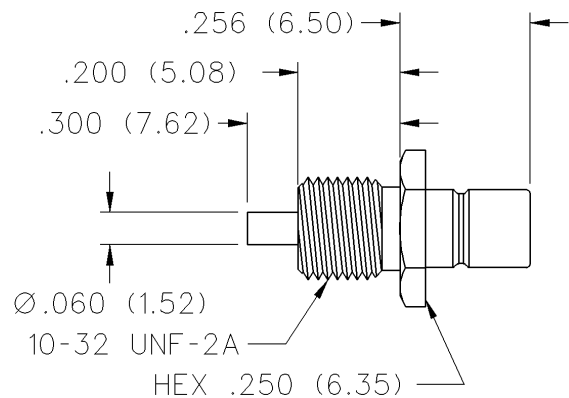
Rear Mount Bulkhead Jack Receptacle



GOLD PLATED	NICKEL PLATED
131-3701-401	131-3701-406

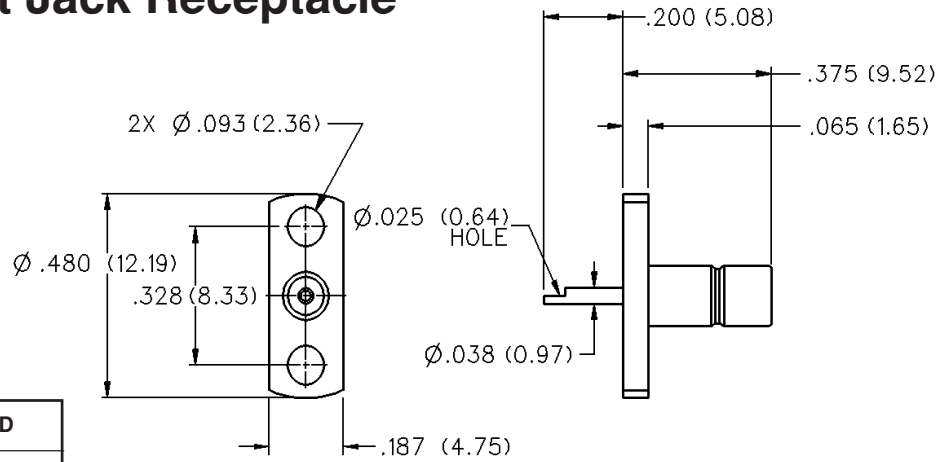
Mounting hole layout figure 5 page 201.

Round Contact Jack Receptacle - Thread Mount Ruggedized Interface



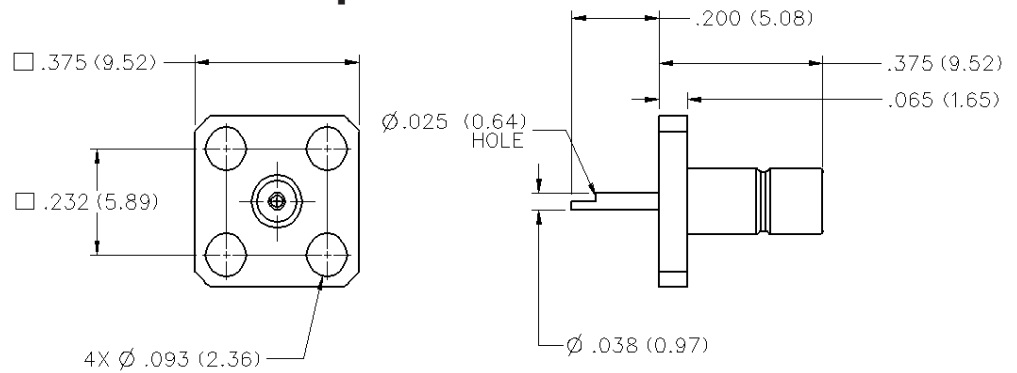
GOLD PLATED	NICKEL PLATED
131-3701-441	131-3701-446

2-Hole Flange Mount Jack Receptacle



GOLD PLATED	NICKEL PLATED
131-3701-621	131-3701-626

4-Hole Flange Mount Jack Receptacle



GOLD PLATED	NICKEL PLATED
131-3701-631	131-3701-636

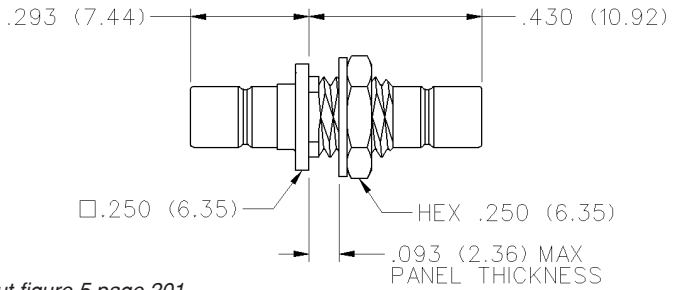
SMB - 50 Ohm Connectors

In-Series Adapters and Terminations

INCHES (MILLIMETERS) • CUSTOMER DRAWINGS AVAILABLE ON REQUEST



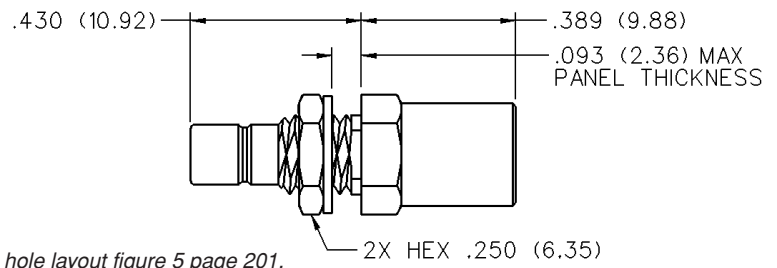
Jack to Bulkhead Jack Adapter



GOLD PLATED	NICKEL PLATED
131-3901-401	131-3901-406

Mounting hole layout figure 5 page 201.

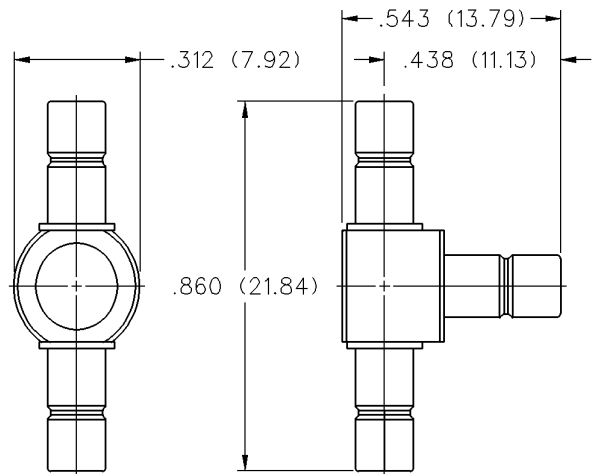
Plug to Bulkhead Jack Adapter



GOLD PLATED	NICKEL PLATED
131-3901-411	131-3901-416

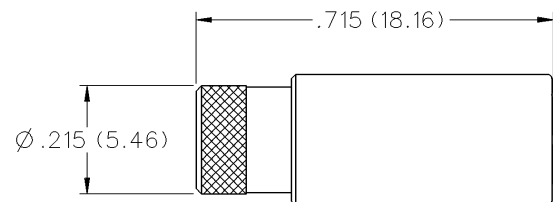
Mounting hole layout figure 5 page 201.

Jack to Jack to Jack Adapter



GOLD PLATED	NICKEL PLATED
131-3901-901	131-3901-906

Plug Dummy Load - 50 Ohm and 75 Ohm



FREQ. RANGE	GOLD PLATED	NICKEL	RESISTANCE
0-1 GHz	131-3801-811	131-3801-816	50 Ohm
0-1 GHz	131-3801-821	131-3801-826	75 Ohm

For precision 75 Ohm termination see Mini-75 Ohm SMB section page 110.