

# COAXIAL CONNECTORS AND CONTACTS



COAXIAL CONNECTORS AND CONTACTS





# Coaxial Connectors

## Overview

Sabritec offers a complete line of RF coaxial connectors and contacts in PCB Mount and cable assemblies. The product line features our MDHC, MDCX, SCX, SMP and SMPM connectors. Contacts include our high frequency MHC as well as standard MIL-DTL-38999, ARINC 404 and 600 contacts.

### SCX Coaxial Connectors

The SCX connector series is the optimal ultraminiature RF solution for the designer. The product series offers the utmost savings in space utilization without compromising rugged mechanical performance and superior RF high frequency electrical performance. The SCX series features a .145" maximum overall diameter with a .375" overall length for the mated connector pair.



A revolutionary designed air dielectric interface is integrated into the SCX series resulting in exceptional RF performance with a 50 ohm characteristic impedance maintained throughout the mated connector pair. The result is an extremely small and rugged high frequency RF connector series with exceptionally low VSWR (1.25:1) from DC to 20 GHz. This connector series is ideal for low profile board to board stacking arrangements.

### MDCX Coaxial Connectors

The MDCX coaxial contacts have a constant 50 ohm airline impedance interface and are 30% smaller than Sabritec's standard SCX coax connectors. Each coax contact has a maximum overall diameter of 0.125" fitted into a low-profile metalized housing.



### MDHC Coaxial Connectors

MDHC high frequency coaxial contacts are a drop in replacement to Sabritec's MDCX RF contacts with an increased frequency range from 10 GHz to 40 GHz.

### Multi-Pin High Frequency MHC Contacts

Sabritec's High Frequency Coax Contacts offer exceptional RF performance up to 26.5 GHz for Size 8 and 40 GHz for Size 12 contacts in multi-pin connector applications. Engineered with a "float mount" design, these contacts ensure low VSWR at microwave frequencies by preventing air gaps at the mating interface. These contacts are designed to be terminated to .086 diameter flexible cables (RG-405 equivalent).



### Precision PCB Terminators

Cable terminators are available for direct terminations of the cable to the PCB eliminating the need for pigtail configurations. Available for RG-178 and RG-316 cable type configurations.

### Coaxial Contacts: MIL-DTL-38999, ARINC 404 and ARINC 600

Complete line of coaxial contacts for MIL-DTL-38999, ARINC 404 and 600 connectors are available. These include size 5, 9, 12 and 16 contacts for various cable types and PC tail configurations.

### Torque Isolation Connectors

Sabritec's patented torque isolation technology (patent # 6,902, 422 and 6,878,008) extends the rear body of the coaxial connector to alleviate stress against the cable to connector solder joint. The slotted extension straddles the conformable cable confining it to its initial direction while increasing the mutual solder surfaces between the cable and connector body.



MDCX & MDHC  
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SCX CONNECTORS  
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SMP & SMPM  
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CONFORMABLE TORQUE  
ASSIST SMA Pg. 148

HIGH FREQUENCY MHC  
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Pg. 152

GROUND PLANE  
CONNECTORS Pg. 156

CABLE ASSEMBLY  
ORDERING Pg. 157



Sabritec provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Sabritec's connectors are fully interchangeable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.



# MDCX and MDHC Coaxial Connectors

## MDCX and MDHC Overview and Specifications

Sabritec's multipin MDCX and MDHC coax connectors have a constant 50 ohm airline impedance interface and are 30% smaller than our SCX coaxial connectors. Each coax contact has a maximum overall diameter of 0.125" fitted into a low-profile metalized housing.

MDCX and MDHC coaxial contacts are compact in size allowing multiple high density connections in a Micro-D style shell for applications where space and weight savings are important. No cumbersome spring mounts are required. These connectors are also available with locking post mechanisms or blind-mate hardware attachment.

Insert arrangements are available in 2, 4, 6, 8 and 10 way coax assemblies as well as mixed signal, power, coax and high speed twinax contacts for hybrid arrangements.

MDHC high frequency coaxial contacts are a drop in replacement to Sabritec's MDCX RF contacts with an increased frequency range from 10 GHz to 40 GHz.

- MDCX VSWR of 1.25:1 (typ) up to 10 GHz (max mated pair).
- MDHC VSWR of 1.3:1 (typ) up to 30GHz (max mated pair).
- MDHC VSWR of 1.5:1 (typ) up to 40GHz (max mated pair).

Mechanical & Environmental Specifications	
Temperature Rating	-65°C to + 165°C
Corrosion	MIL-STD-202 Method 101, Test Condition B
Shock	MIL-STD-202 Method 213, Test Condition B
Vibration	MIL-STD-202 Method 204, Test Condition B
Thermal Shock	MIL-STD-202 Method 107, Test Condition B
Durability	1,000 cycles min. 500 cycles min. Signal Contacts
Mating/Unmate Force	1 lb. min.
Float Mount Constraints	0.010" full radial & 0.010 axial misalignment max
Electrical Specifications	
Dielectric Withstanding Voltage	500 VDC @sea level with 70% relative humidity
Insulation Resistance	5000 mega-ohms min. @ 200 VDC
Contact Current Rating	5 Amps max. for 0.030 Signal Pins 2.0 Amps max. for 0.015 Signal Contacts
Characteristic Impedance	50 Ohm constant airline impedance
RF HI Potential Withstanding Voltage	125 VRMS @ 5 MHz
Corona Level @ 70,000 ft.	Center contact to intermediate contact: 125 VAC
Permeability	2.0 max.
Frequency Range	MDHC: DC-40 GHz MDCX: DC-10 GHz
VSWR	1.5:1 (typ) Mated Pair up to 40 GHz (MDHC) 1.3:1 (typ) Mated Pair up to 30 GHz (MDHC) 1.25:1 (typ) Mated Pair up to 10 GHz (MDCX)
Material & Finishes	
Center & Outer Spring Contacts	Brass per ASTM-B16, alloy UNS C36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold Plate per MIL-DTL-45204, Type II, Class 1
Insulators	PTFE per ASTM D-1710
Connector Plug/ Receptacle Shell	Aluminum per ASTM-B211/221, 6061-T6 Electroless Nickel Plate per SAE-AMS-C-26074
RoHS Compliant	

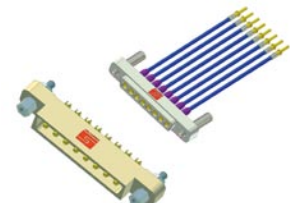
All specifications subject to change without notice.



MDCX Connectors



MDHC Connectors



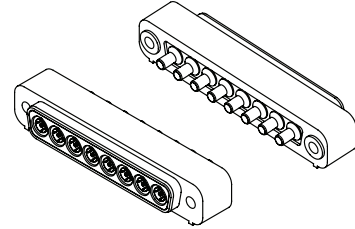
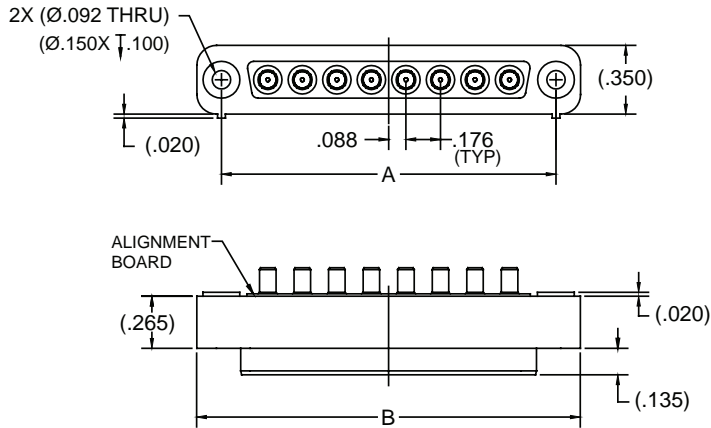
Multipin Coax Connector with Locking Post



# MDCX and MDHC Connectors

## Connector Plug Bodies for Socket Contacts

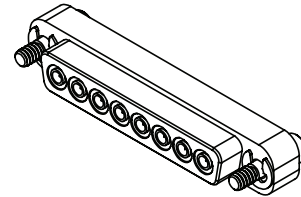
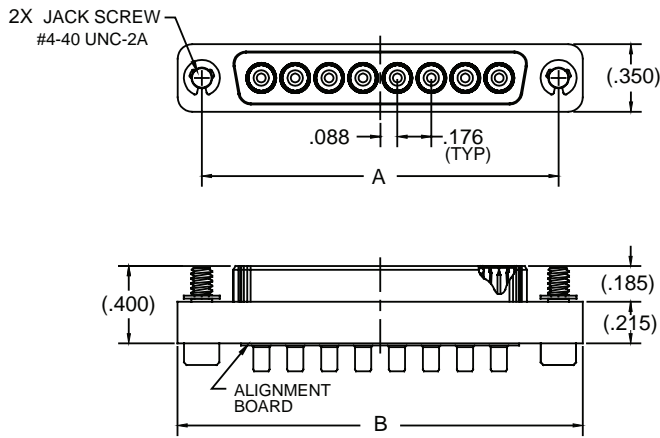
### Connector Plug for Cable Mount MDCX & MDHC Coax Socket Contacts



Part Number	Contacts
017300-2003	2
017300-2004	4
017300-2006	6
017300-2008	8
017300-2010	10

\*Cable Mount Coaxial Contacts Sold Separately

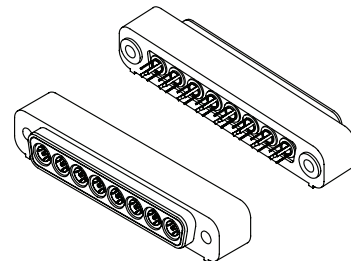
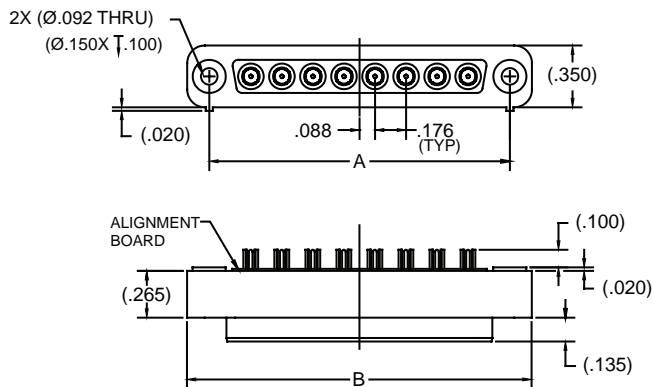
### Connector Plug for Cable Mount MDCX & MDHC Coax Socket Contacts (w/Mounting Hardware)



Part Number	Contacts
017300-2013	2
017300-2014	4
017300-2016	6
017300-2018	8
017300-2020	10

\*Cable Mount Coaxial Contacts Sold Separately

### Connector Plug for MDCX & MDHC With PC-Tail Coax Socket Contacts



MDCX	MDHC	Contacts
017317-2003	017317-2013	2
017317-2004	017317-2014	4
017317-2006	017317-2016	6
017317-2008	017317-2018	8
017317-2010	017317-2020	10

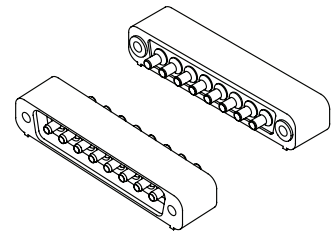
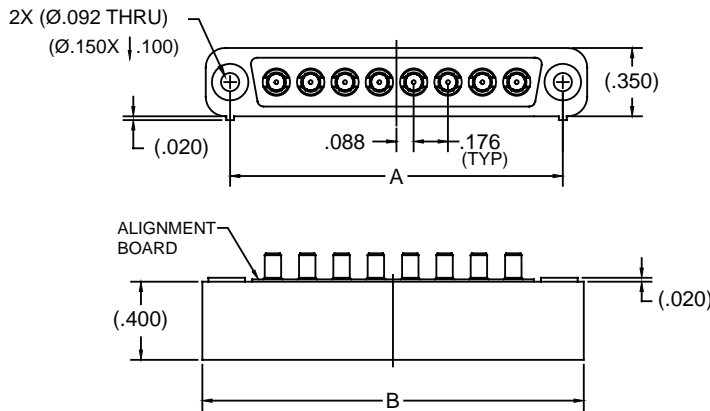
\*PC Tail Contacts included



# MDCX and MDHC Connectors

## Connector Receptacle Bodies for Pin Contacts

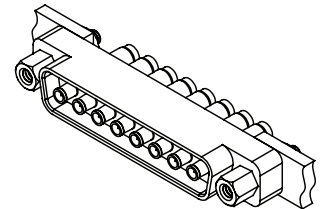
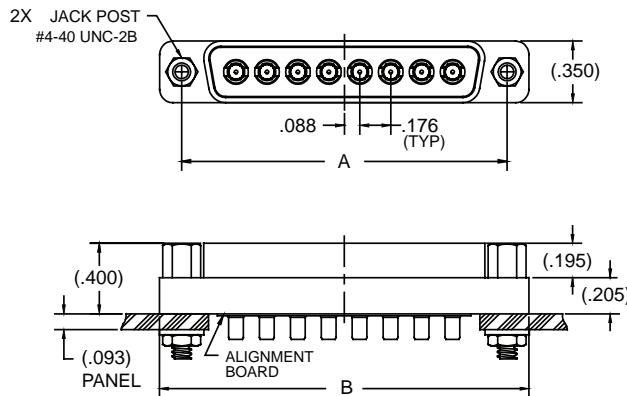
### Connector Receptacle for Cable Mount MDCX & MDHC Coax Pin Contacts



Part Number	Contacts
017300-3003	2
017300-3004	4
017300-3006	6
017300-3008	8
017300-3010	10

\*Cable Mount Coaxial Contacts Sold Separately

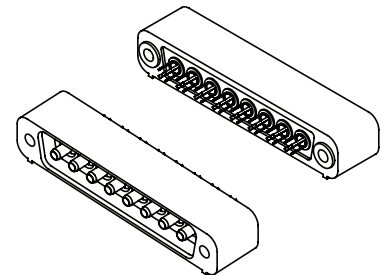
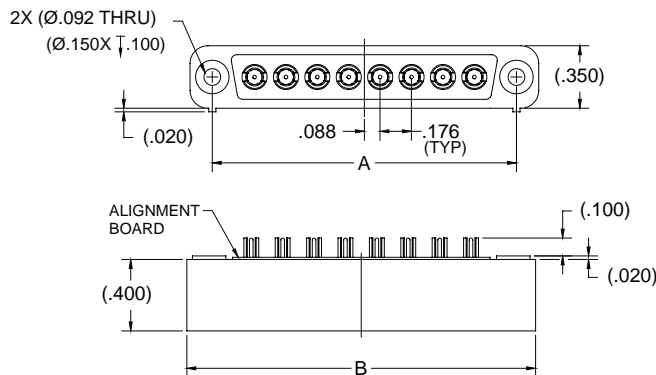
### Connector Receptacle for Cable Mount MDCX & MDHC Coax Pin Contacts (w/Mounting Hardware)



Part Number	Contacts
017300-3013	2
017300-3014	4
017300-3016	6
017300-3018	8
017300-3020	10

\*Cable Mount Coaxial Contacts Sold Separately

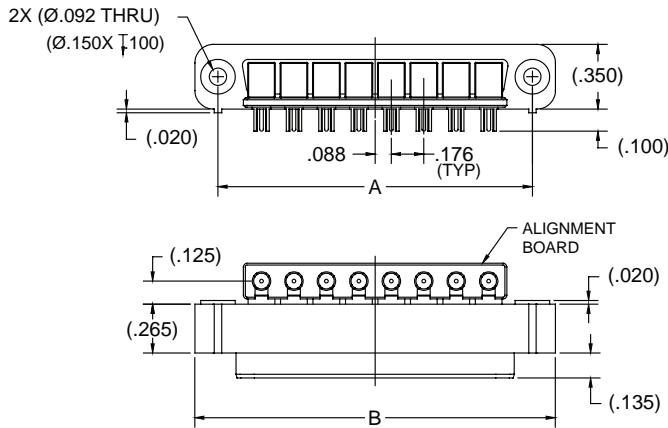
### Connector Receptacle for MDCX & MDHC With PC-Tail Pin Contacts



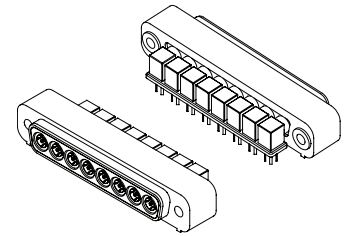
MDCX	MDHC	Contacts
017317-3003	017317-3013	2
017317-3004	017317-3014	4
017317-3006	017317-3016	6
017317-3008	017317-3018	8
017317-3010	017317-3020	10

\*PC Tail Contacts included

## Connector Plug With MDCX Right Angle PC-Tail Coax Socket Contact

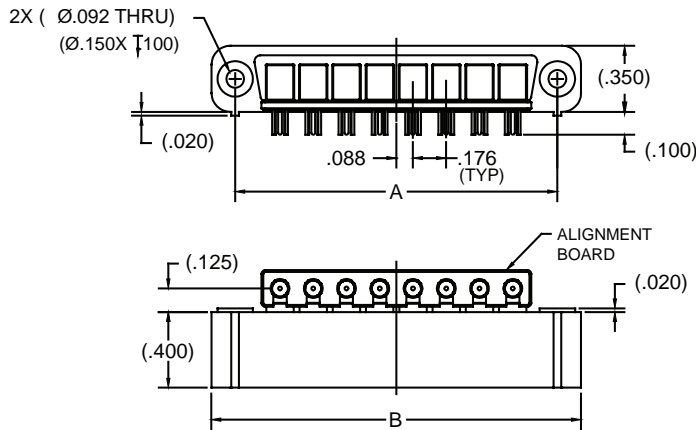


\*PC Tail Contacts included

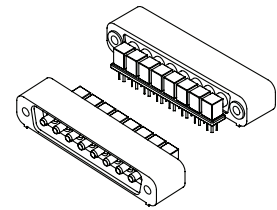


Part Number	Contacts
017317-1103	2
017317-1104	4
017317-1106	6
017317-1108	8
017317-1110	10

## Connector Receptacle With MDCX Right Angle PC-Tail Coax Pin Contact

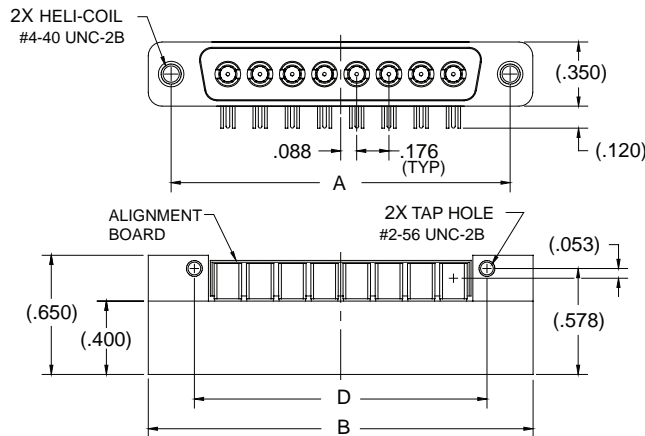


\*PC Tail Contacts included

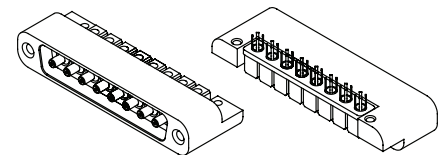


Part Number	Contacts
017317-1003	2
017317-1004	4
017317-1006	6
017317-1008	8
017317-1010	10

## Connector Receptacle With MDCX Right Angle PC-Tail Coax Pin Contact (w/Mounting Hardware)

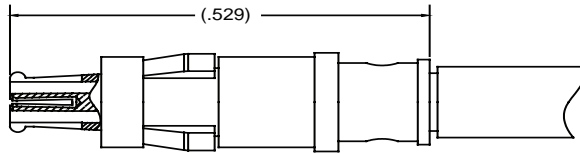


\*PC Tail Contacts included



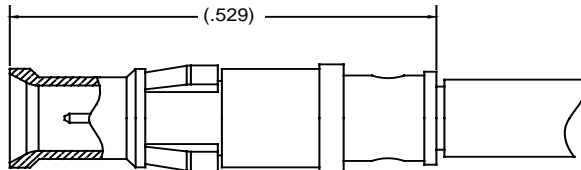
Part Number	Contacts
017317-1203	2
017317-1204	4
017317-1206	6
017317-1208	8
017317-1210	10

## MDHC Coax Pin Contact (DC-40 GHz)



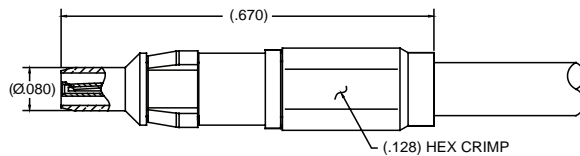
Part Number	Cable Type	Cable
013209-2004	Flexible Coax	RG-405 Flex

## MDHC Coax Socket Contact (DC-40 GHz)



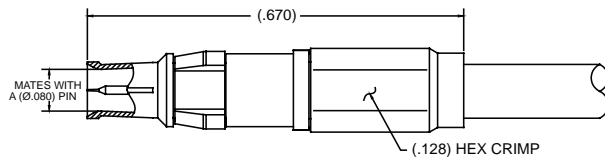
Part Number	Cable Type	Cable
013109-2004	Flexible Coax	RG-405 Flex

## Removable MDCX Coax Pin Contact (DC-10 GHz)



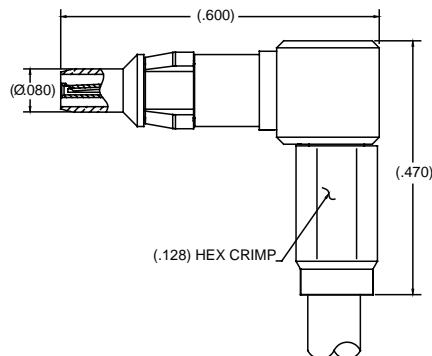
Part Number	Cable Type	Cable
013214-2005	Flexible Coax	RG-178
013214-2004	Flexible Coax	RG-316
013214-2003	Flexible Coax	RG-405 Flex

## Removable MDCX Coax Socket Contact (DC-10 GHz)



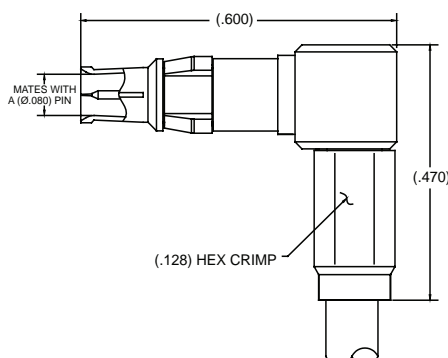
Part Number	Cable Type	Cable
013114-2005	Flexible Coax	RG-178
013114-2004	Flexible Coax	RG-316
013114-2003	Flexible Coax	RG-405 Flex

## Removable MDCX Right Angle Coax Pin Contact (DC-10 GHz)



Part Number	Cable Type	Cable
013214-1003	Flexible Coax	RG-178
013214-1002	Flexible Coax	RG-316
013214-1001	Flexible Coax	RG-405 Flex

## Removable MDCX Right Angle Coax Socket Contact (DC-10 GHz)



Part Number	Cable Type	Cable
013114-1003	Flexible Coax	RG-178
013114-1002	Flexible Coax	RG-316
013114-1001	Flexible Coax	RG-405 Flex

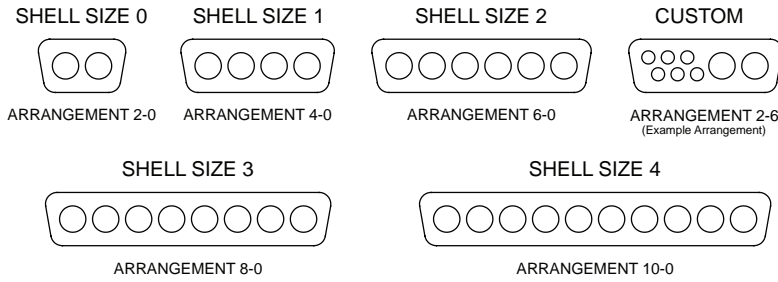




# MDCX & MDHC Ordering Information

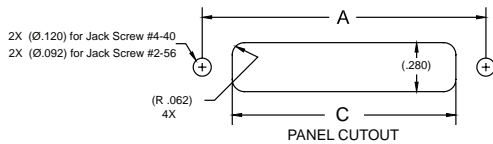
## Insert Arrangements/Interface/Ordering Information

### Insert Arrangements

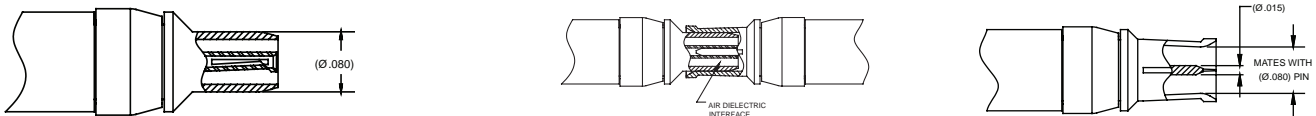


Shell Size	Contacts	A dim.	B dim.	C dim.	D dim.
0	2	.800	1.050	.525	.600
1	4	1.150	1.400	0.875	.950
2	6	1.500	1.750	1.225	1.300
3	8	1.850	2.100	1.575	1.650
4	10	2.200	2.450	1.925	2.000

\*Consult factory for Hybrid Arrangement Dimension Details

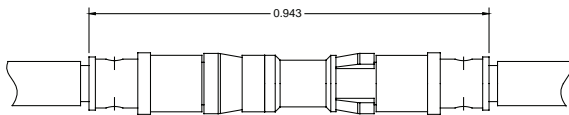


### MDCX Coaxial Contact Interface

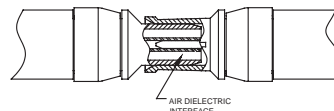


### MDHC Coaxial Contact Interface

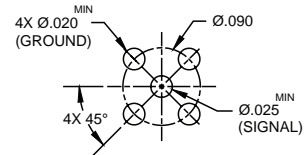
Contact Mated Pair



Contact Interface



MDCX & MDHC PCB FOOTPRINT



### Coax Multi-Pin Connector Part Description

MDCX - 1 4-0 - R - SC

SERIES: \_\_\_\_\_  
MDCX or MDHC

SHELL SIZE: \_\_\_\_\_  
0, 1, 2, 3, 4

ARRANGEMENT: \_\_\_\_\_

TERMINATION STYLE:

- SC - Straight Crimp
- RC - R/A Crimp (MDCX ONLY)
- SPC - Straight PC Tail
- RPC - R/A PC Tail (MDCX ONLY)

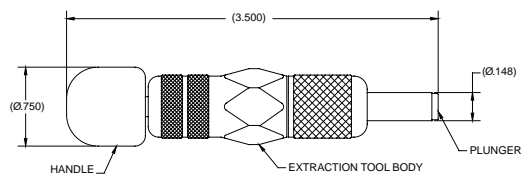
SHELL STYLE:

- P - Plug
- R - Receptacle

Notes:

1. Coax Contacts Sold Separately for Crimp Version
2. Optional mounting hardware available, please specify panel thickness.
3. Removable Coax Contacts Require Removal Tool SIR-029 (ordered separately)
4. Consult Factory for Mixed Layouts

Removal Tool SIR-029







# SCX Coaxial Connectors

## Connector Specifications

The SCX series offers the utmost savings in space utilization without compromising rugged mechanical performance and superior RF high frequency electrical performance. These connectors feature a .145" maximum overall diameter with a .375" overall length for the mated connector pair.

A revolutionary designed air dielectric interface is integrated into the SCX series resulting in exceptional RF performance with a 50 ohm characteristic impedance maintained throughout the mated connector pair. The result is an extremely small and rugged high frequency RF connector series with exceptionally low VSWR (1.25:1) from DC to 20 GHz. This connector series is ideal for low profile board to board stacking arrangements.



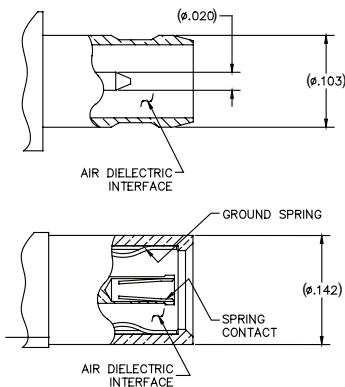
All configurations and styles are available including surface mount, end launch and compliant pin press-fit PCB mounting alternatives. The cable mount connectors are designed for a full crimp assembly with standard crimp tools or solder assembly termination.

The SCX series is applicable for high frequency RF applications from DC to 20 GHz. The durable connector is gold plated with heat treated beryllium copper spring fingers allowing for a minimum of 1,000 mating cycles without any noted degradation of RF performance. The spring fingers allow for a rugged and reliable snap-on, detent locking interconnect mechanism. The low profile mated pair overall length of .375" significantly increases the number of mounting possibilities.

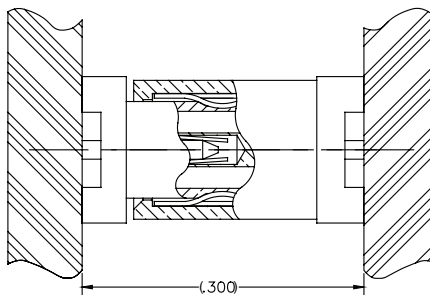
Mechanical & Environmental Specifications	
Temperature Rating	-65°C to + 165°C
Corrosion	MIL-STD-202 Method 101, Test Condition B
Shock	MIL-STD-202 Method 213, Test Condition B
Vibration	MIL-STD-202 Method 204, Test Condition B
Thermal Shock	MIL-STD-202 Method 107, Test Condition B
Durability	1000 Mate/Unmate cycles min.
Mating/Unmate Force	1 lb. min.
Float Mount Constraints	0.10" full radial & 0.015 axial misalignment max
Electrical Specifications	
Dielectric Withstanding Voltage	500 VDC @sea level with 70% relative humidity
Insulation Resistance	5000 mega-ohms min. @ 200 VDC
Contact Current Rating	2 Amps max.
Characteristic Impedance	50 Ohm constant airline impedance
RF HI Potential Withstanding Voltage	125 VRMS @ 5 MHz
Corona Level @ 70,000 ft.	Center contact to intermediate contact: 125 VAC
Permeability	2.0 max.
Frequency Range	DC to 20 GHz
VSWR	1.25:1 max. (mated pair)
Material & Finishes	
Shell	Brass per ASTM B16, alloy UNS C36000 Gold plate per MIL-DTL-45204, Type II, Class 1
Center Contacts	Brass per ASTM B16, alloy UNS 36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold plate per MIL-DTL-45204, Type II, Class 1
Ground Spring	BeCu per ASSTM-B194, alloy UNS C17200 Gold plate per MIL-DTL-45204, Type II, Class 1
Insulators	PTFE per ASTM D-1710

*All specifications subject to change without notice.*

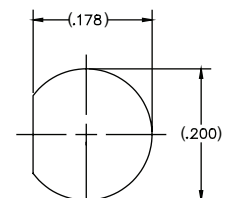
### SCX INTERFACE DIMENSIONS



### Mated Pair Length

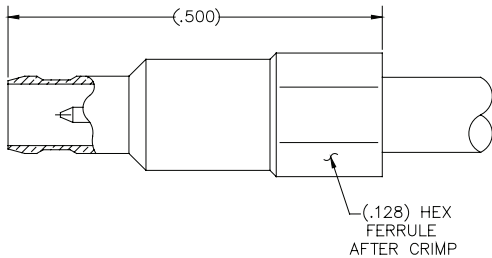


### Mounting D-Hole Bulkhead Connectors



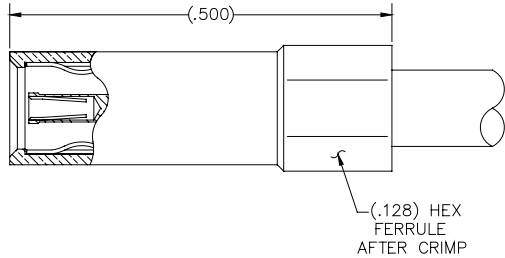
## Cable Type Connectors

### SCX Cable Plug



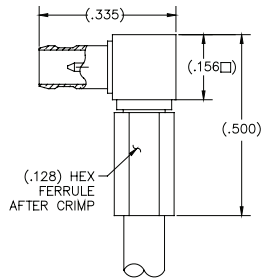
Part Number	Cable Type	Cable
013220-2000	Flexible Coax	RG-316
013220-2001	Flexible Coax	RG-178
013220-2002	Semi-Rigid Coax	RG-405

### SCX Cable Receptacle



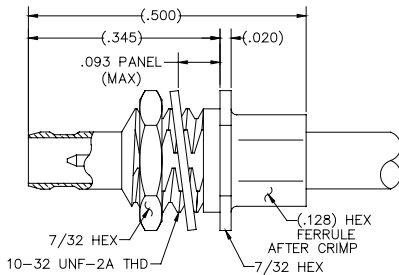
Part Number	Cable Type	Cable
013120-2000	Flexible Coax	RG-316
013120-2001	Flexible Coax	RG-178
013120-2002	Semi-Rigid Coax	RG-405

### SCX Right Angle Plug



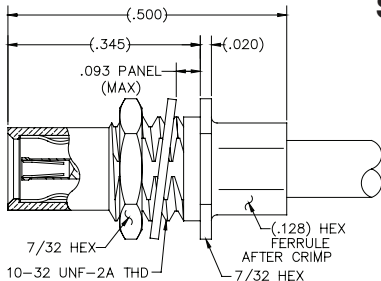
Part Number	Cable Type	Cable
013220-1008	Flexible Coax	RG-316
013220-1009	Flexible Coax	RG-178
013220-1010	Semi-Rigid Coax	RG-405

### SCX Bulkhead Mount Cable Plug



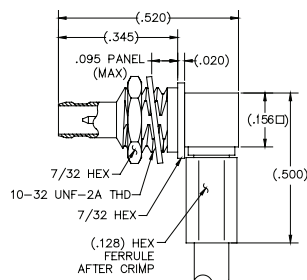
Part Number	Cable Type	Cable
013220-5011	Flexible Coax	RG-316
013220-5012	Flexible Coax	RG-178
013220-5013	Semi-Rigid Coax	RG-405

### SCX Bulkhead Mount Cable Receptacle



Part Number	Cable Type	Cable
013120-5011	Flexible Coax	RG-316
013120-5012	Flexible Coax	RG-178
013120-5013	Semi-Rigid Coax	RG-405

### SCX Right Angle Bulkhead Mount Cable Plug



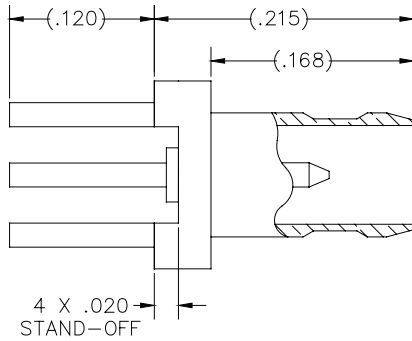
Part Number	Cable Type	Cable
013212-1011	Flexible Coax	RG-316
013212-1012	Flexible Coax	RG-178
013212-1013	Semi-Rigid Coax	RG-405



# SCX PCB Connectors

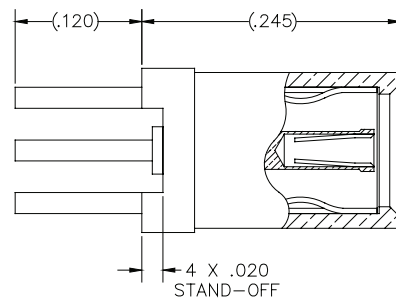
## PCB Type Connectors

### Straight PCB Plug



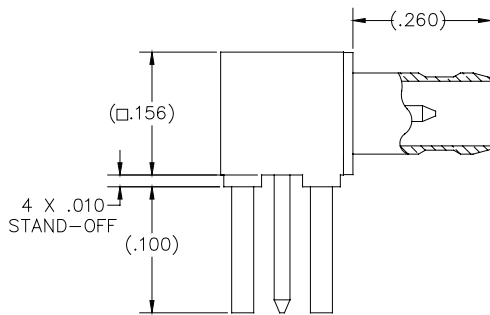
**P/N 013200-2024**

### Straight PCB Receptacle



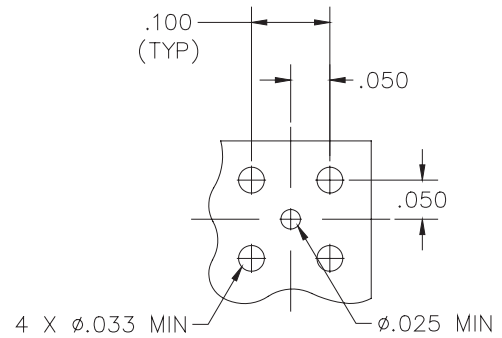
**P/N 013100-2024**

### Right Angle PCB Plug



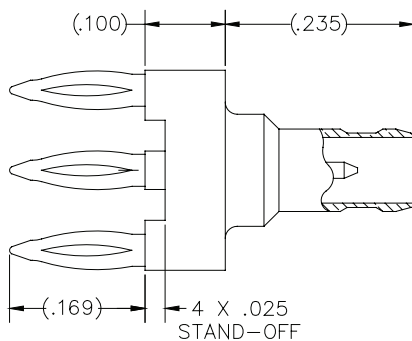
**P/N 013200-1002**

### PCB Mounting Dimension



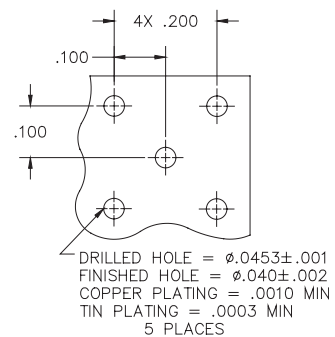
**PCB Pattern for .100 Centers**

### Compliant Pin PCB Plug



**P/N 013200-2029**

### Compliant Pin PCB Mounting Dimension



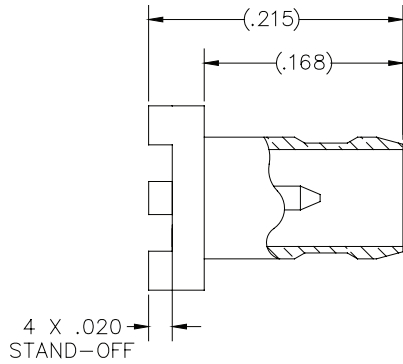
**PCB Pattern for .200 Centers**



# SCX Surface Mount Connectors

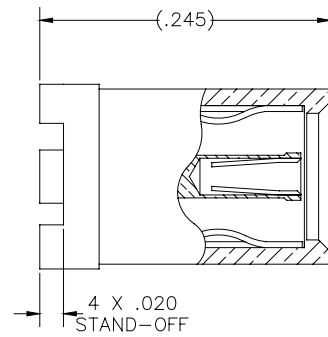
## Surface Mount Connectors

### Surface Mount Plug



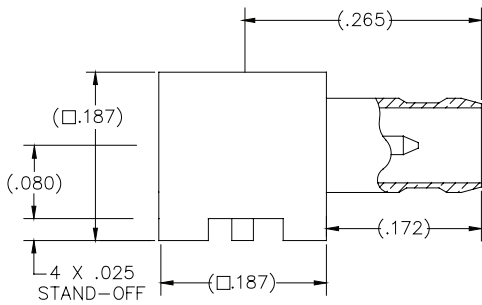
**P/N 013200-2023**

### Surface Mount Receptacle



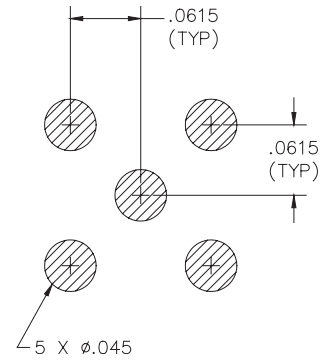
**P/N 013100-2023**

### Right Angle Surface Mount Plug

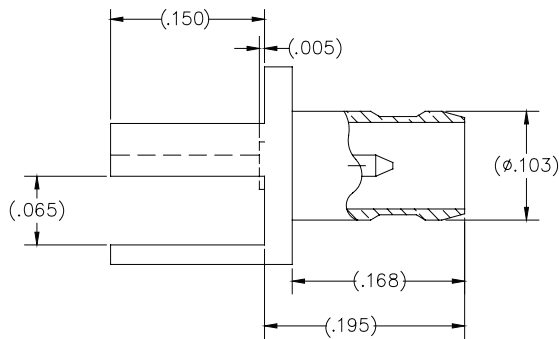


**P/N 013200-1003**

### Surface Mount PCB Layout

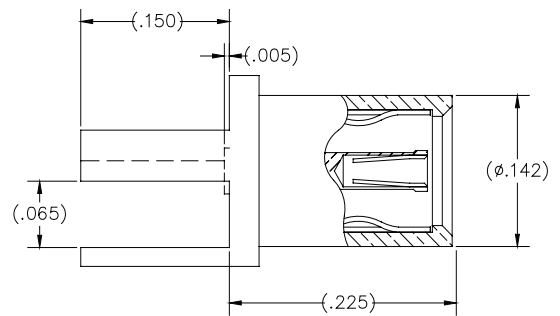


### End Launch Surface Mount Plug



**P/N 013200-2030**

### End Launch Surface Mount Receptacle



**P/N 013100-2030**

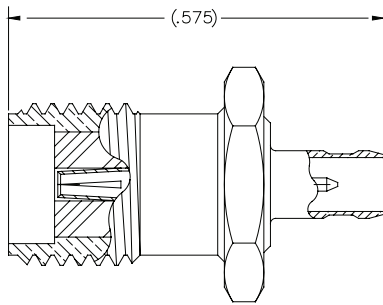




# SCX Adapters / Terminators

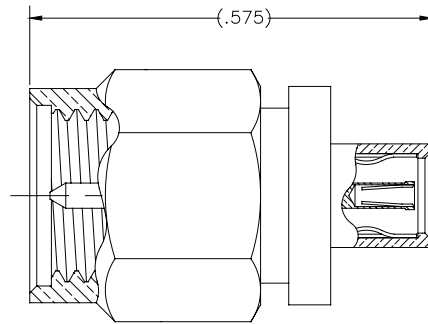
## Between Series Adapters/Terminators

SCX Plug to SMA Jack Adapter



P/N 013200-4010

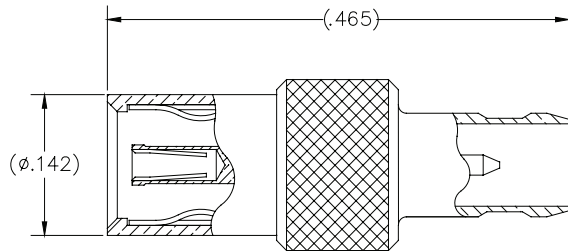
SCX Receptacle to SMA Plug Adapter



P/N 013100-4010

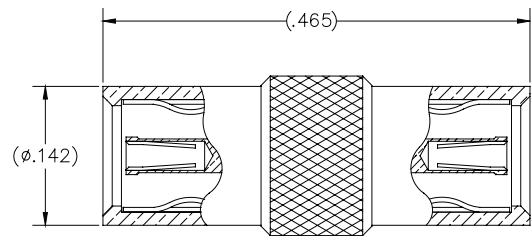
## In-Series SCX Adapters

Plug to Receptacle Adapter



P/N 013100-4011

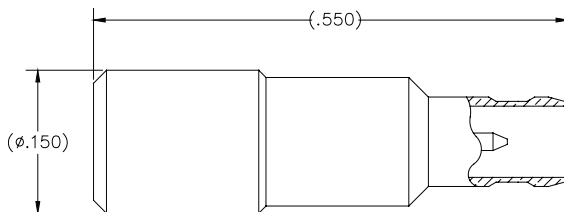
Receptacle to Receptacle Adapter



P/N 013200-4011

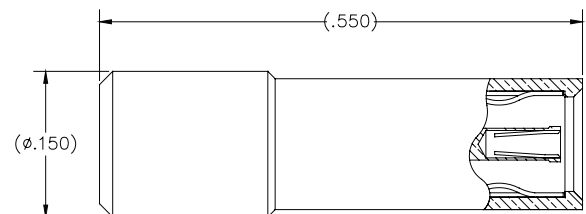
## 50 Ohm Load Terminators

50 Ohm Load Termination Plug



P/N 013200-2028

50 Ohm Load Termination Receptacle



P/N 013100-2028

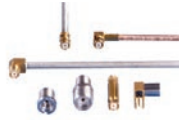


# SMP Coaxial Connectors

## Connector Specifications

The SMP coax connector line features a snap-in vibration proof connection, suitable for high shock mobile applications and space level connector requirements of extreme random vibration, thermal shock, and outgassing environments. Frequency range is DC-40 GHz with low VSWR.

The extremely small package size allows for high density board-to-board applications. Blind mate SMP connectors are available in smooth bore for maximum float of mating (0.015" radial and axial misalignment between mating planes). The full and limited detent SMP connections are suitable for mobile applications with extreme shock and vibration requirements. These connectors meet or exceed the applicable requirements of DSCC drawing numbers 94007, 94008 and MIL-STD-348.

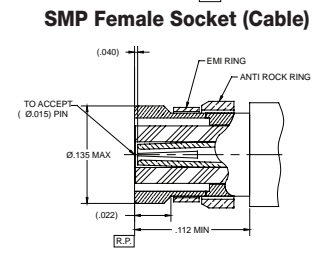
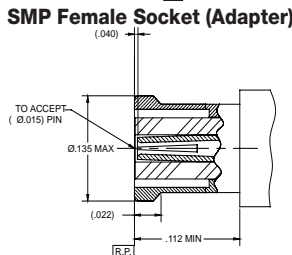
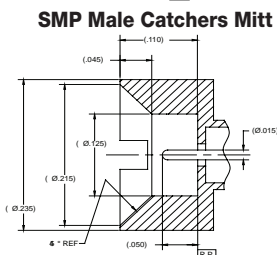
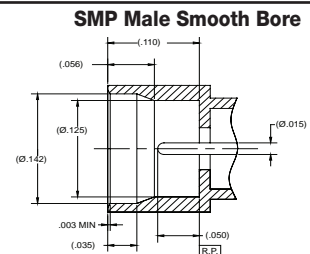
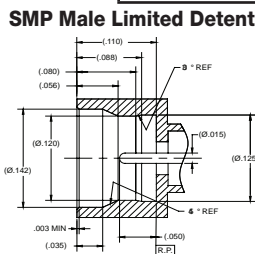
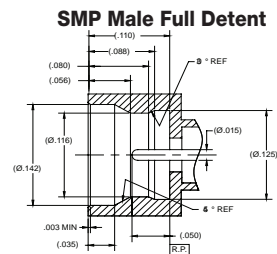


In addition to the SMP coaxial connector line, Sabritec offers a smaller SMPM series. The SMPM series is available with detent and non detent mating levels with blindmate capabilities. The SMPM coaxial connector is 30% smaller than the SMP and has the advantage of a higher frequency range capable of 60 GHz.

### Features and Benefits:

- Meets extreme shock and high vibration requirements
- Snap in connection
- Durable light weight construction
- Ideal for high density packaging
- Full and limited detent locking
- Blind-mate smooth bore series available
- Space approved SMP connectors available
- Permits high density board-to-board connections
- Gold plated contact members

### Interface Dimensions



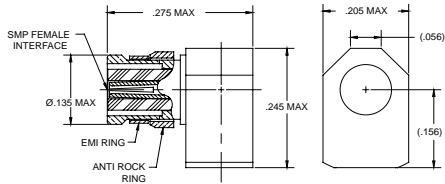
Mechanical & Environmental Specifications	
Temperature Rating	-65°C to + 165°C
Corrosion	MIL-STD-202 Method 101, Test Condition B
Shock	MIL-STD-202 Method 213, Test Condition B
Vibration	MIL-STD-202 Method 204, Test Condition B
Thermal Shock	MIL-STD-202 Method 107, Test Condition B
Durability	100 cycles min.
Force to Engage	Full Detent: 15 lbs max Limited Detent: 10 lbs max Smooth Bore, Catchers Mitt: 2 lbs max
Force to Disengage	Full Detent: 5 lbs max Limited Detent: 2 lbs max Smooth Bore, Catchers Mitt: 0.5 lbs max
Electrical Specifications	
Dielectric Withstanding Voltage	500 VRMS @sea level
Insulation Resistance	5000 mega-ohms min. @ 200 VRMS
Voltage Rating	335 VRMS @ sea level
Impedance	50 Ohm constant airline impedance
Frequency Range	DC to 40 GHz
VSWR	DC to 26.5 GHz 1.15 max 26.5 to 40 GHz 1.5:1 max
Material & Finishes	
Center & Outer Spring Contacts	BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold plate per MIL-DTL-45204, Type II, Class 1
Shell	Brass per ASTM-16, alloy UNS C36000 Gold plate per MIL-DTL-45204, Type II, Class 1 or 305 CRES per ASTM-A240, passivated per ASTM-A967
Insulators	PTFE per ASTM D-1710 or equivalent
Interconnect Configurations	
Flange Mount Right Angle Flange Mount Thread-In Box Mount Press-In Flange Mount PCB Mount, Right Angle & Straight Cable Connectors, Semi-Rigid & Flexible RG Cables	



# SMP Coaxial Connectors

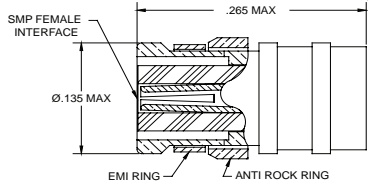
## Cable Mount/PCB Connectors

### SMP Right Angle Female to S/R Cable



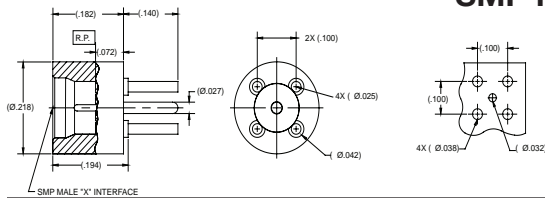
Part Number	Cable Type	Cable
219936-1000	Semi-Rigid	SR.047
219909-1001	Semi-Rigid	SR.086

### SMP Straight Female to Semi Rigid Cable



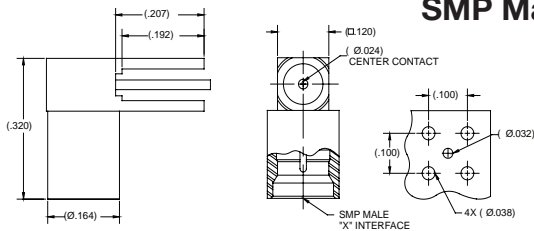
Part Number	Cable Type	Cable
219936-3000	Semi-Rigid	SR.047
219909-3001	Semi-Rigid	SR.086

### SMP Male to Straight PCB Mount



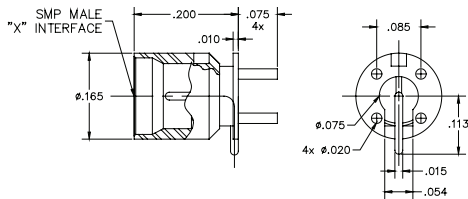
Part Number	Detent Level
219900-2000	FD
219900-2001	LD
219900-2002	SB

### SMP Male to Right Angle PCB Mount



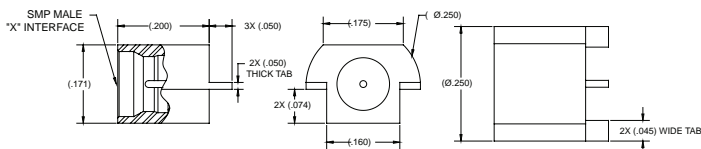
Part Number	Detent Level
219900-1000	FD
219900-1001	LD
219900-1002	SB

### SMP Male Straight PCB Mount



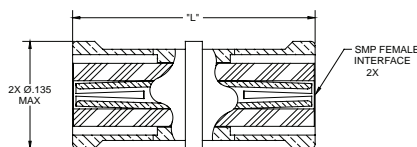
Part Number	Detent Level
219900-2003	FD
219900-2004	LD
219900-2005	SB

### SMP Male PCB Edge Launch to Straight Termination



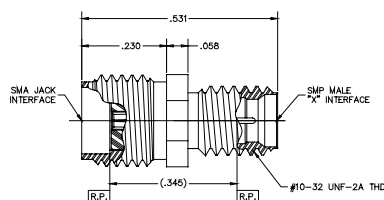
Part Number	Detent Level
219900-2006	FD
219900-2007	LD
219900-2008	SB

### SMP Female to Female Adapter



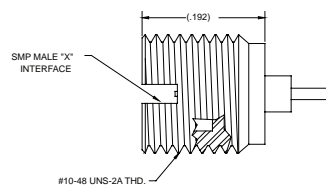
Part Number	Length
219900-4000	0.254
219900-4001	0.395
219900-4002	0.484
219900-4003	0.568

### SMA Female to SMP Male Thread-In Adapter



Part Number	Detent Level
219900-4008	FD
219900-4009	LD
219900-4010	SB

### SMP Male Straight Termination



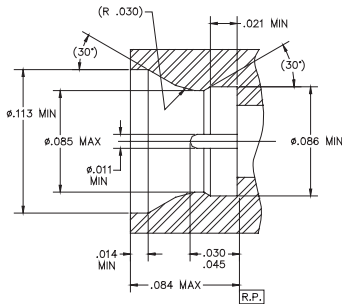
Part Number	Detent Level
219900-2009	FD
219900-2010	LD
219900-2011	SB



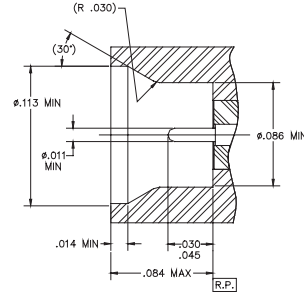
# SMPM Coaxial Connectors

## Interface Mating Dimensions

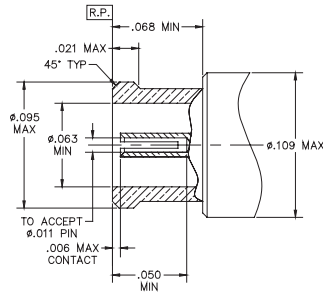
### SMPM Male Detent



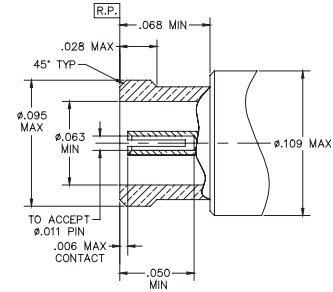
### SMPM Male Non-Detent



### SMPM Female (Adapter)

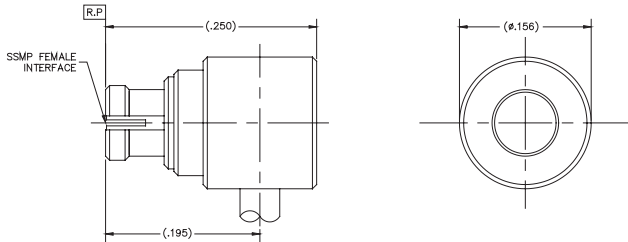


### SMPM Female (Cable)



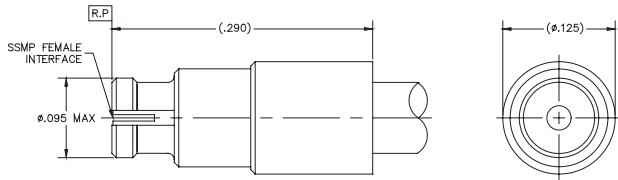
## SMPM Cable Mount Connectors/Adapters

### SMPM Right Angle Female to S/R Cable



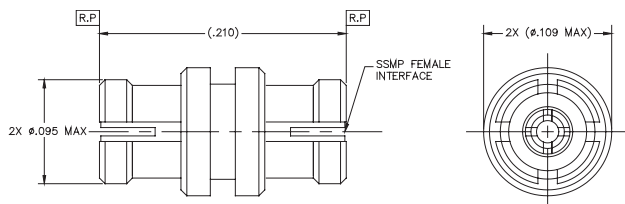
Part Number	Cable Type	Cable
229909-1000	Semi-Rigid	SR.047
229909-1001	Semi-Rigid	SR.086

### SMPM Straight Female to S/R Cable



Part Number	Cable Type	Cable
229909-3000	Semi-Rigid	SR.047
229909-3001	Semi-Rigid	SR.086

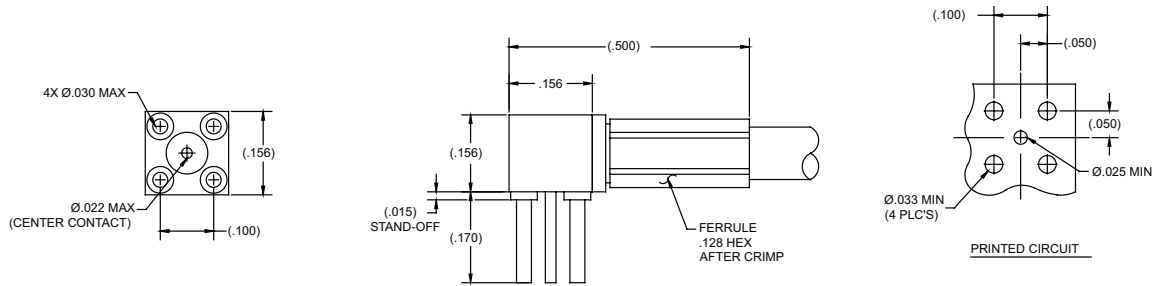
### SMPM Female to Female Adapter



**P/N 229900-4000**

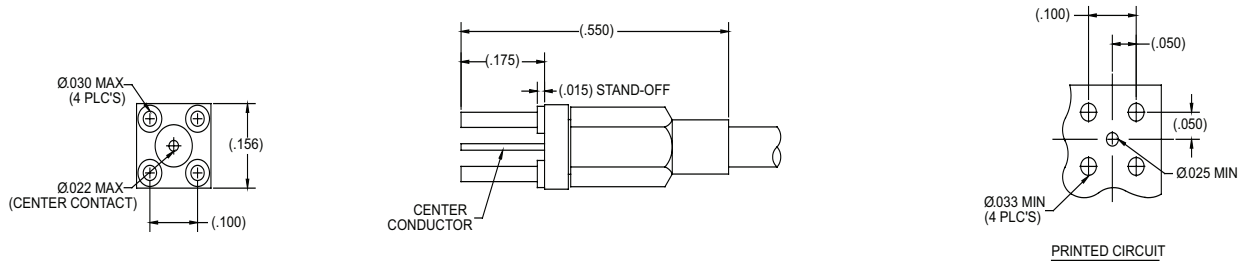


## Right Angle PCB Mount to Cable



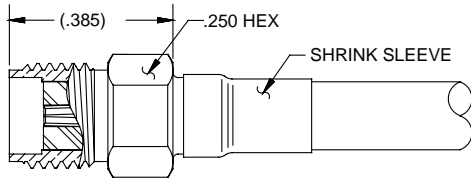
Part Number	Cable Type	Cable
010012-1011	Flexible Coax	RG-178
010012-1012	Flexible Coax	RG-316

## Straight PCB Mount to Cable



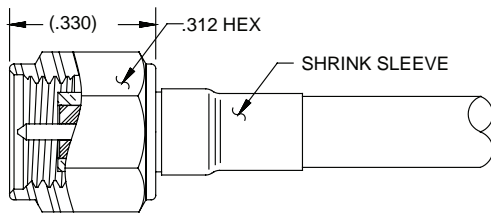
Part Number	Cable Type	Cable
010012-2010	Flexible Coax	RG-178
010012-2011	Flexible Coax	RG-316

### Straight SMA Jack



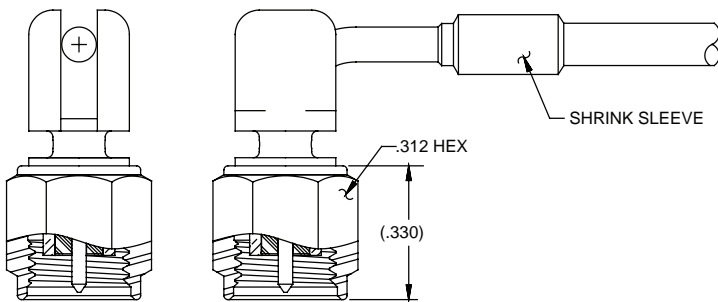
Part Number	Cable Type	Cable
011609-8000	Conformable	.141 Flex
011609-8001	Conformable	.086 Flex

### Straight SMA Plug



Part Number	Cable Type	Cable
011509-8000	Conformable	.141 Flex
011509-8001	Conformable	.086 Flex

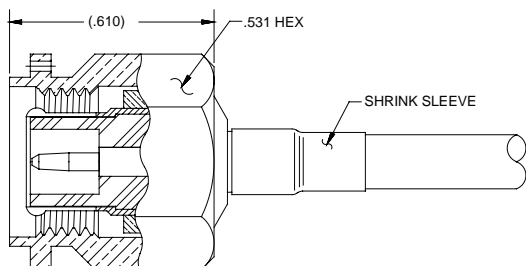
### Right Angle SMA Plug (Torque Isolation Connector)



Part Number	Cable Type	Cable
011509-1002	Conformable	.141 Flex
011509-1003	Conformable	.086 Flex

Patent # 6,902,422 and 6,878,008

### Straight TNC Plug



Part Number	Cable Type	Cable
011109-8000	Conformable	.141 Flex
011109-8001	Conformable	.086 Flex



# Multi-Pin High Frequency Contacts (MHC)

## High Frequency Contacts



Sabritec's High Frequency Coax Contacts (MHC) offer exceptional RF performance up to 26.5 GHz for Size 8 and 40 GHz for Size 12 contacts in multi-pin connector applications. Engineered with a "float mount" design, these contacts ensure low VSWR at microwave frequencies by preventing air gaps at the mating interface. These contacts are designed to be terminated to .086 diameter flexible cables (RG-405 equivalent).

### MHC Contact Features:

- Fits size 8 and 12 cavities for MIL-DTL-38999, ARINC 404 and ARINC 600
- Fits Size 8 cavity for MIL-DTL-24308 D-Sub
- Spring loaded for optimum contact mating force
- High frequency performance
- Low VSWR
  - Size 8: 1.15:1 Typ Mated Pair (DC to 26.5 GHz)
  - Size 12: 1.25:1 Typ Mated Pair (DC to 26.5 GHz)
  - 1.5:1 Typ Mated Pair (26.5 - 40 GHz)
- Insertion Loss:
  - 0.15 dB to 26.5 GHz Typ (Size 8)
  - 0.2 dB to 40 GHz Typ (Size 12)
- Socket contacts are spring loaded float mount for superior RF performance and reliability

Electrical Specifications (MIL-DTL-38999/ARINC 404/ARINC 600)	
Impedance	50 Ohms
Frequency Range	DC to 26.5 GHz (Size 8) DC to 40 GHz (Size 12)
VSWR	1.15:1 Typ (Size 8) to 26.5 GHz 1.25:1 Typ (Size 12) to 26.5 GHz 1.50:1 Typ (Size 12) to 40 GHz (mated pair)
DWV	500 VRMS @ Sea Level (Size 8) 325 VRMS @ Sea Level (Size 12)
Temperature Range	-65°C to + 165°C
Materials & Finishes	
Center & Outer Spring Contacts	Brass per ASTM-B16, alloy UNS C36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold plate per MIL-DTL-45204, Type II, Class 1
Shell	Brass per ASTM-B16, alloy UNS C36000 Gold plate per MIL-DTL-45204, Type II, Class 1
Hood	305 CRES per ASTM-A240, passivated per ASTM-A967
Insulators	PTFE per ASTM D-170

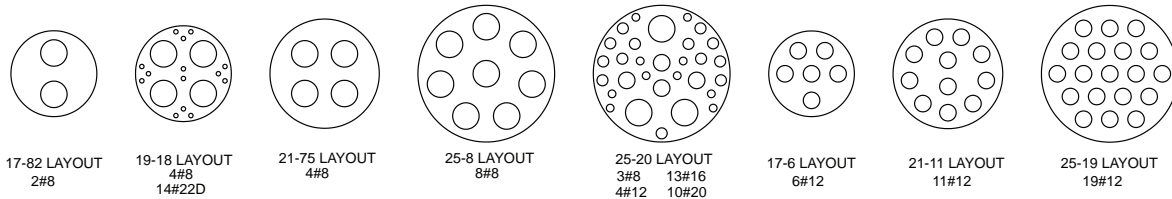
All specifications subject to change without notice.

## MHC Sample Insert Arrangements

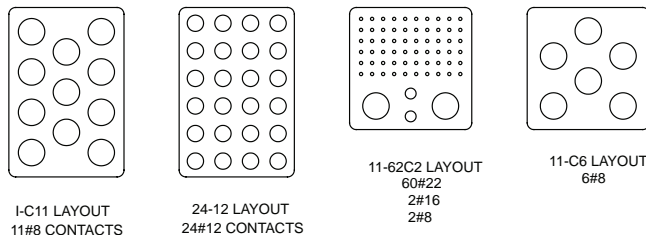
### Consult Factory For:

- Custom or Special Insert Arrangements
- Connector Ordering Information
- PC Tail Versions of Contacts

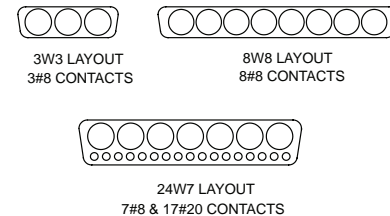
### MIL-DTL-38999



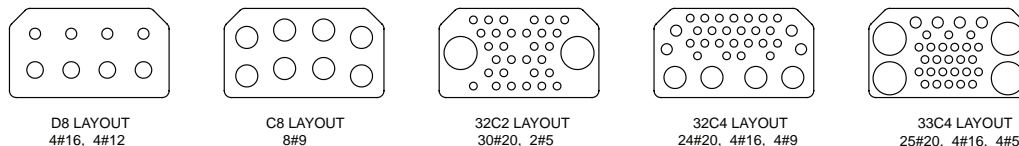
### ARINC 600



### MIL-DTL-24308



### ARINC 404



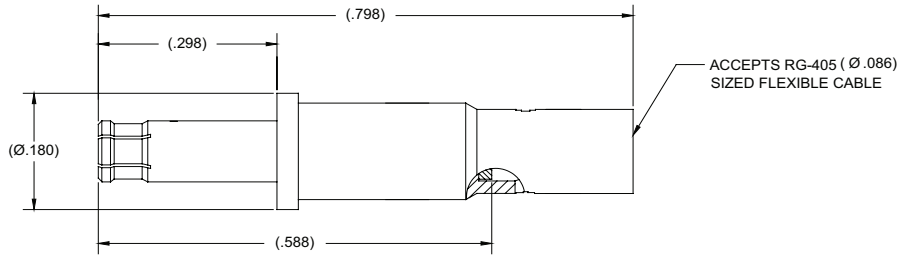
Sabritec provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Sabritec's connectors are fully interchangeable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.



# MHC Coax Pin Contacts

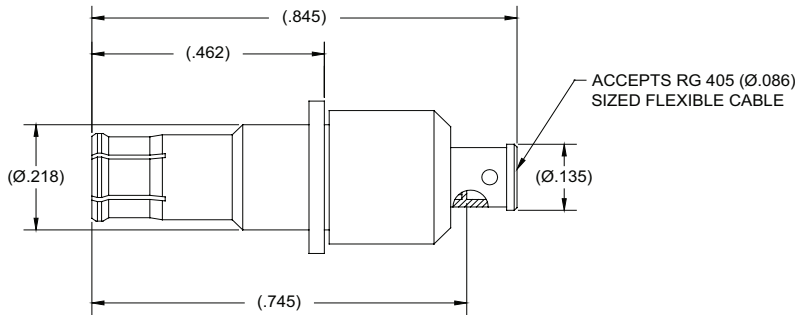
MIL-DTL-38999/ARINC 404/ARINC 600/MIL-DTL-24308

## Size 12 Pin Contact for MIL-DTL-38999



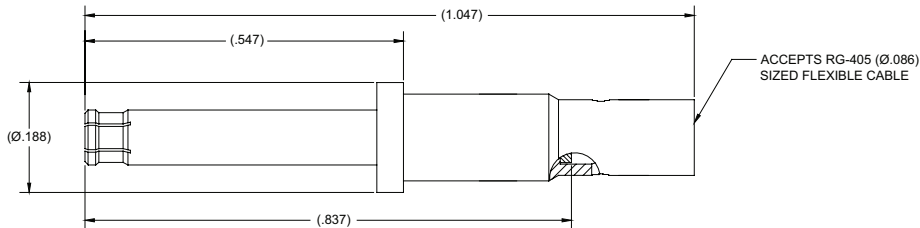
Part #	Cable Size
018624-8002	.086 Flex

## Size 8 Pin for MIL-DTL-38999



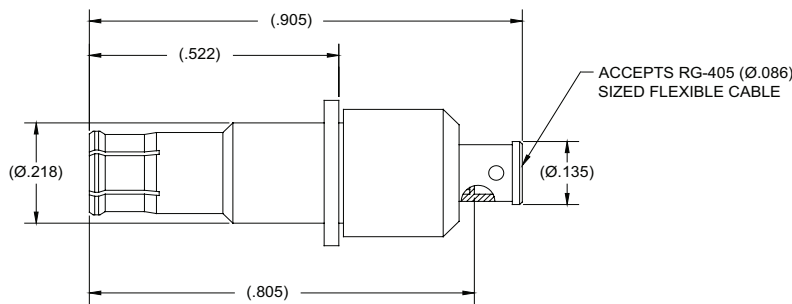
Part #	Cable Size
019624-2011	.086 Flex
019624-2012	.141 Flex

## Size 12 Pin Contact for ARINC 404 and ARINC 600



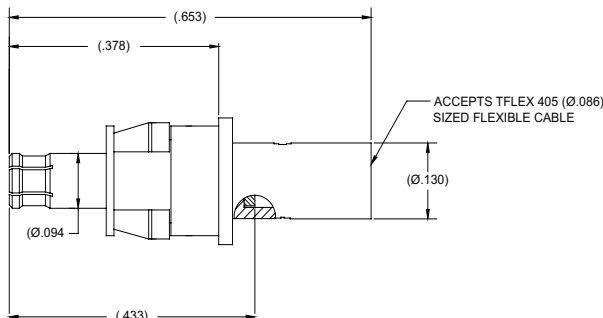
Part #	Cable Size
018624-8004	.086 Flex

## Size 8 Pin Contact for ARINC 404 and ARINC 600



Part #	Cable Size
019624-2014	.086 Flex

## Size 8 Pin for MIL-DTL-24308



Part #	Cable Size
019829-2000	.086 Flex

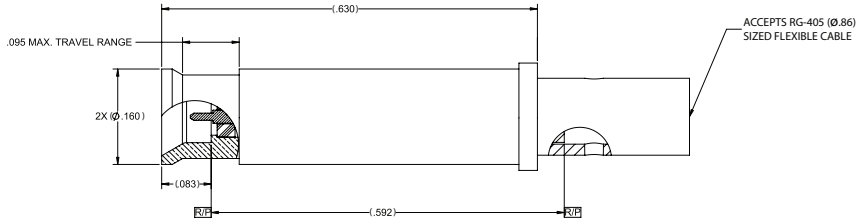




# MHC Coax Socket Contacts

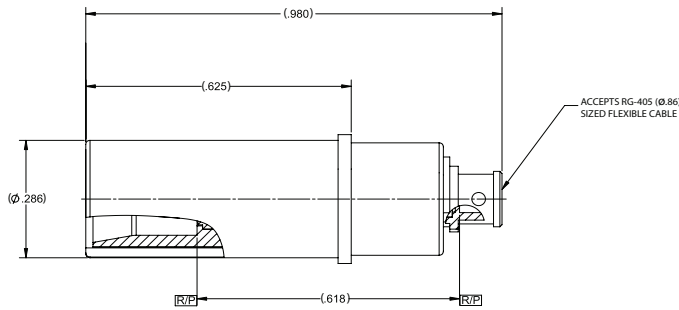
MIL-DTL-38999/ARINC 404/ARINC 600/MIL-DTL-243080

## Size 12 Socket Contact for MIL-DTL-38999



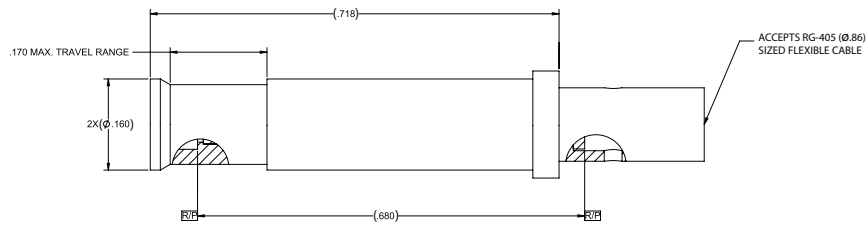
Part #	Cable Size
018724-8002	.086 Flex

## Size 8 Socket for MIL-DTL-38999



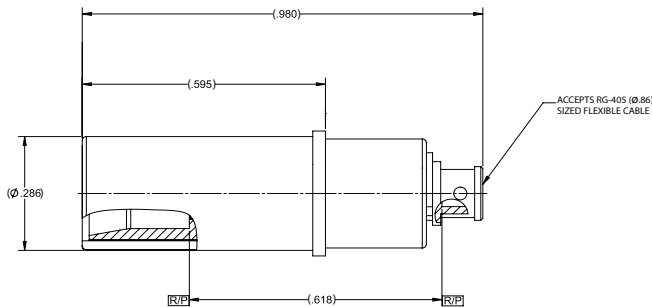
Part #	Cable Size
019524-2011	.086 Flex
019524-2012	.141 Flex

## Size 12 Socket Contact for ARINC 404 and ARINC 600



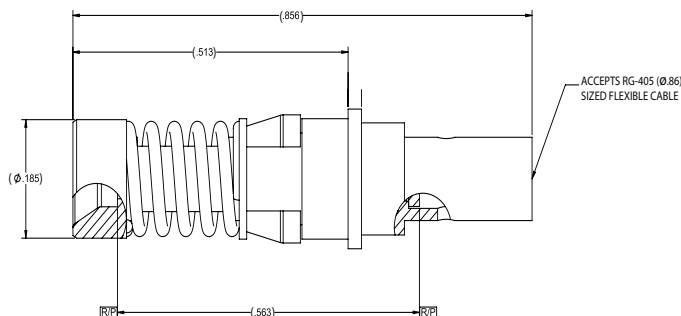
Part #	Cable Size
018724-8004	.086 Flex

## Size 8 Socket Contact for ARINC 404 and ARINC 600



Part #	Cable Size
019524-2014	.086 Flex

## Size 8 Socket for MIL-DTL-24308



Part #	Cable Size
019729-2000	.086 Flex



# Coaxial Contacts

## MIL-DTL-38999/ARINC 404/ARINC 600 Coax Contacts

Sabritec's coaxial contacts provide flexibility in the design of high frequency RF and microwave applications. The contacts, including sizes 5, 8, 9, 12 and 16 and have the same outline dimensions as traditional power contacts that fit various insert arrangements for d-sub, circular, and rack and panel connectors. The coaxial cable type contacts are designed for low-loss concentric 50 and 75 Ohm cable types. These contacts are available in 50 Ohm for flexible RG-178 and RG-316 and semi rigid of SR.047 and SR. 080 cables. Flexible cables such as RG-179 for 75 Ohm applications are also available.

An innovative design of coax contacts opens a whole new world of design options. These small, rugged contacts have a VSWR rating of 1.3:1 max with a frequency range from DC to 5 GHz and fit standard connector contact cavities for MIL-DTL-38999, ARINC 404, and ARINC 600.

### FEATURES

- Small size for high density packaging
- Ideal for RF and microwave applications for instruments, radar, communications, and RF shielding.

### Interface Dimensions

- MIL-DTL-38999 ARINC 404 and ARINC 600 Per SAE-AS39029

Mechanical & Environmental Specifications	
Temperature Rating	-65°C to + 165°C
Corrosion	MIL-STD-202 Method 101, Test Condition B
Shock	MIL-STD-202 Method 213, Test Condition B
Vibration	MIL-STD-202 Method 204, Test Condition B
Thermal Shock	MIL-STD-202 Method 107, Test Condition B
Durability	1000 mate/unmate cycles min.
Electrical Specifications	
Dielectric Withstanding Voltage	500 VDC @ sea level with 70% relative humidity
Insulation Resistance	5000 mega-ohms min. @ 200 VDC
Contact Current Rating	2.0 Amps max
Characteristic Impedance	50 Ohm constant airline impedance
RH HI Potential Withstanding Voltage	125 VRMS @ 5 MHz
Corona Level @ 70,000 ft.	Center contact to intermediate contact: 125 VAC
Permeability	2.0 max
Frequency Range	DC to 5 GHz
VSWR	1.3:1 max. (mated pair)
Material & Finishes	
Center & Outer Spring Contacts	Brass per ASTM B16, alloy UNS C36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold plate per MIL-DTL-45204, Type II, Class 1
Shell	Brass per ASTM B16, alloy UNS C36000 or BeCu per ASTM-B196, alloy UNS C17200, C17300 or Leaded Nickel Copper, alloy UNS C19500, C19600 Gold plate per MIL-DTL-45204, Type II, Class 1
Hood	305 CRES per ASTM-A240, passivated per ASTM-A967
Insulators	PTFE per ASTM D-1710

*All specifications subject to change without notice.*

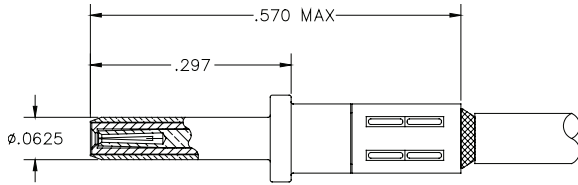
Sabritec provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Sabritec's connectors are fully intermateable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.



# MIL-DTL-38999 Series I, III, IV Coax Contacts

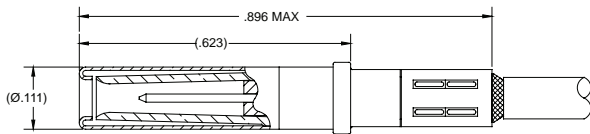
## Size 16, 12 and 8 Contacts for MIL-DTL-38999

### MIL-DTL-38999 Size 16 Coax Pin Contact



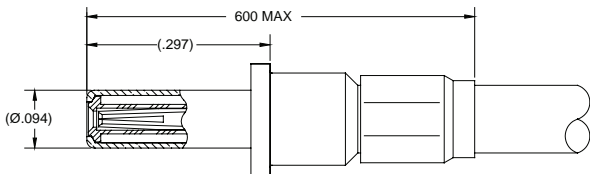
Part Number	Cable Type	Cable
018512-2100	Flexible Coax	RG-178
018512-2101	Flexible Coax	RG-316

### MIL-DTL-38999 Size 16 Coax Socket Contact



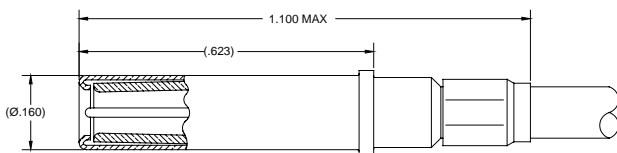
Part Number	Cable Type	Cable
018412-2100	Flexible Coax	RG-178
018412-2101	Flexible Coax	RG-316

### MIL-DTL-38999 Size 12 Coax Pin Contact



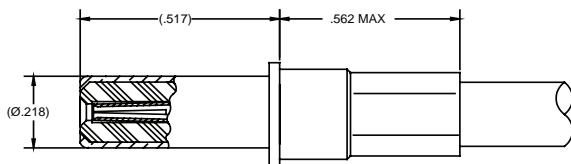
Part Number	Cable Type	Cable
018612-2118	Flexible Coax	RG-178
018612-2119	Flexible Coax	RG-316

### MIL-DTL-38999 Size 12 Coax Socket Contact



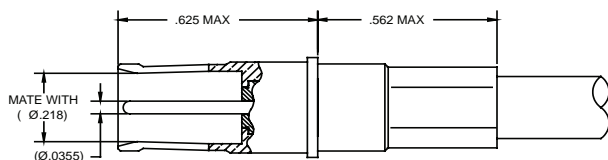
Part Number	Cable Type	Cable
018712-2118	Flexible Coax	RG-178
018712-2119	Flexible Coax	RG-316

### MIL-DTL-38999 Size 8 Coax Pin Contact



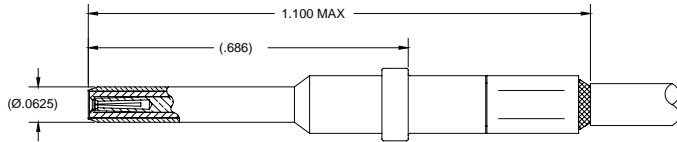
Part Number	Cable Type	Cable
019612-2100	Flexible Coax	RG-58
019612-2101	Flexible Coax	RG-316

### MIL-DTL-38999 Size 8 Coax Socket Contact



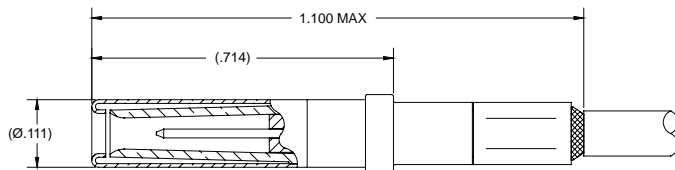
Part Number	Cable Type	Cable
019512-2100	Flexible Coax	RG-58
019512-2101	Flexible Coax	RG-316

### ARINC 600 Size 16 Coax Pin



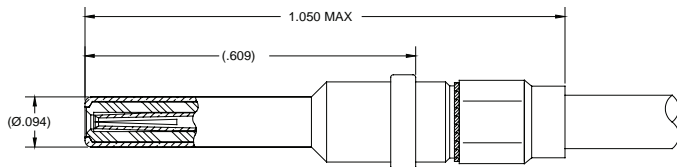
Part Number	Cable Type	Cable
018512-2200	Flexible Coax	RG-178
018512-2201	Flexible Coax	RG-316

### ARINC 600 Size 16 Coax Socket



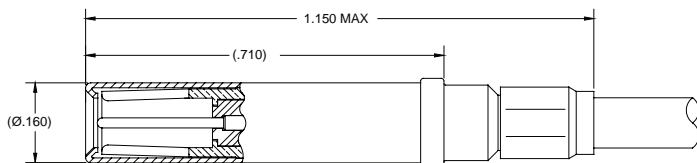
Part Number	Cable Type	Cable
018412-2200	Flexible Coax	RG-178
018412-2201	Flexible Coax	RG-316

### ARINC 600 Size 12 Coax Pin



Part Number	Cable Type	Cable
018612-2200	Flexible Coax	RG-178
018612-2201	Flexible Coax	RG-316

### ARINC 600 Size 12 Coax Socket



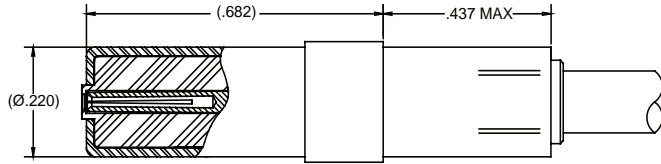
Part Number	Cable Type	Cable
018712-2200	Flexible Coax	RG-178
018712-2201	Flexible Coax	RG-316



# ARINC 404/600 Coaxial Contacts

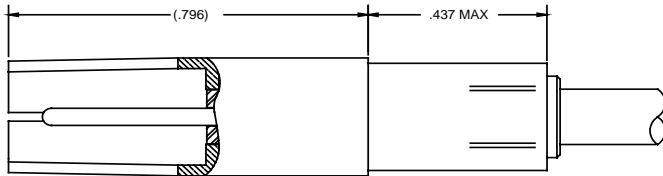
## Size 5 Contacts for ARINC 404/600 Size 9 for ARINC 404

### ARINC 404/600 Size 5 Coax Pin



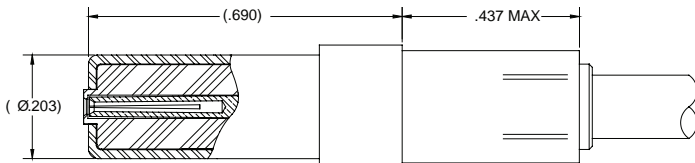
Part Number	Cable Type	Cable
019412-2200	Flexible Coax	RG-58
019412-2201	Flexible Coax	RG-316

### ARINC 404/600 Size 5 Coax Socket



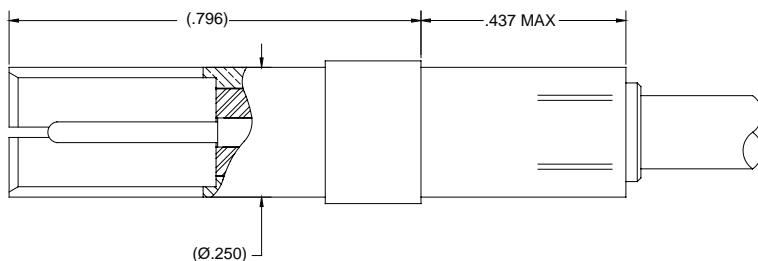
Part Number	Cable Type	Cable
019312-2200	Flexible Coax	RG-58
019312-2201	Flexible Coax	RG-316

### ARINC 404 Size 9 Coax Pin



Part Number	Cable Type	Cable
019212-2016	Flexible Coax	RG-58
019212-2017	Flexible Coax	RG-316

### ARINC 404 Size 9 Coax Socket



Part Number	Cable Type	Cable
019112-2016	Flexible Coax	RG-58
019112-2017	Flexible Coax	RG-316



# Ground Plane Connectors

## Multipin Circular Grounded Connectors

Sabritec's grounded circular connectors are designed to ground the outer shield of a triax or coaxial contact directly to the shell of the connector. An innovative designed multi-finger contact spring mechanism fixed within each metalized grounded connector cavity serves a dual purpose. It acts as a mechanically sound and well proven contact retention clip mechanism as well as a multi-finger contact engagement point for superior EMI shielding resulting in extremely low contact resistance values when measured from the coax or triax contact outer body to the connector flange. Contact resistance is 5 milli-ohms maximum. All ground plane connectors meet or exceed all applicable requirements of standard QPL Mil-Spec circular connectors.



### Features:

- Grounded multi-finger contact spring mechanism within each connector cavity
- Contact resistance: 5 milli-ohms max
- Intermateable and interchangeable with standard non-filtered connectors
- Superior EMI shielding
- Suitable for MIL-STD-1760 applications

### Connector Types

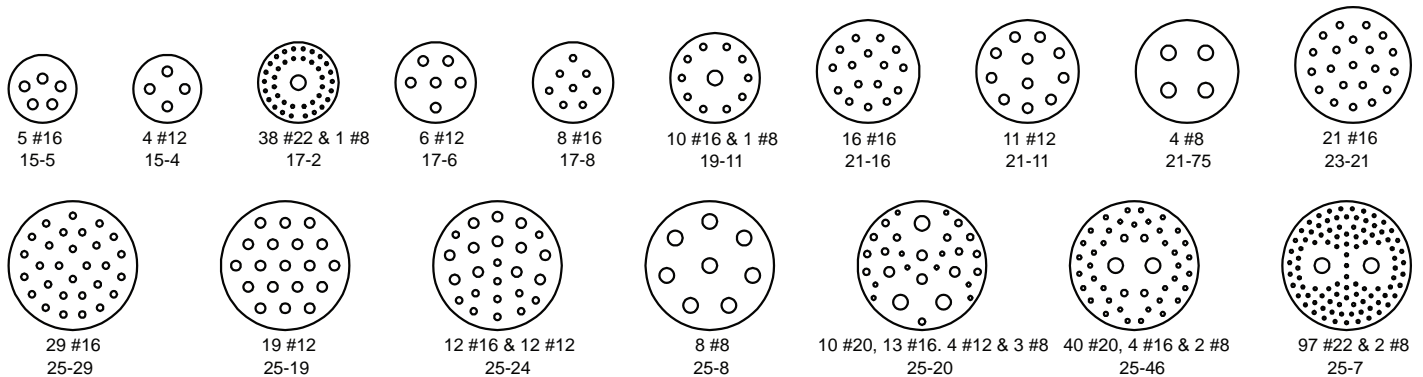
- MIL-DTL-38999 SERIES I
- MS27505 Square Flange Receptacle
- MIL-DTL-38999 SERIES II
- MS27499 Square Flange Receptacle
- MIL-DTL-38999 SERIES III
- D38999/20 Box Mount Receptacle
- MIL-DTL-38999 SERIES IV
- D38999/40 Box Mount Receptacle
- MIL-C-26482 SERIES II
- MS3470 Square Flange Receptacle

### Material and Finishes

<b>Ground Retention Clip</b>	BeCu per ASTM-B196, alloy UNS C17200, C17300 Gold plate per MIL-DTL-45204, Type II, Class 1
<b>Inserts</b>	Aluminum per ASTM-B211/221, 6061-T6 Silver plate per ASTM-B700
<b>Connector Plug/Receptacle Shell</b>	Aluminum per ASTM-B211/221, 6061-T6 Electroless Nickel plate per SAE AMS-C-26074 or Cadmium plate per SAE AMS-QQ-P-416
<b>Grommet &amp; Seal</b>	Silicone Rubber per A-A-59588

*All specifications subject to change without notice.*

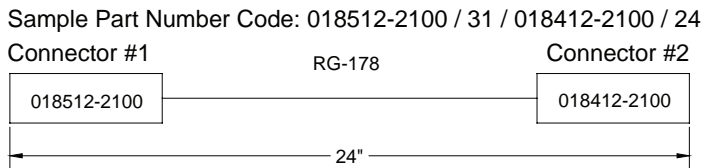
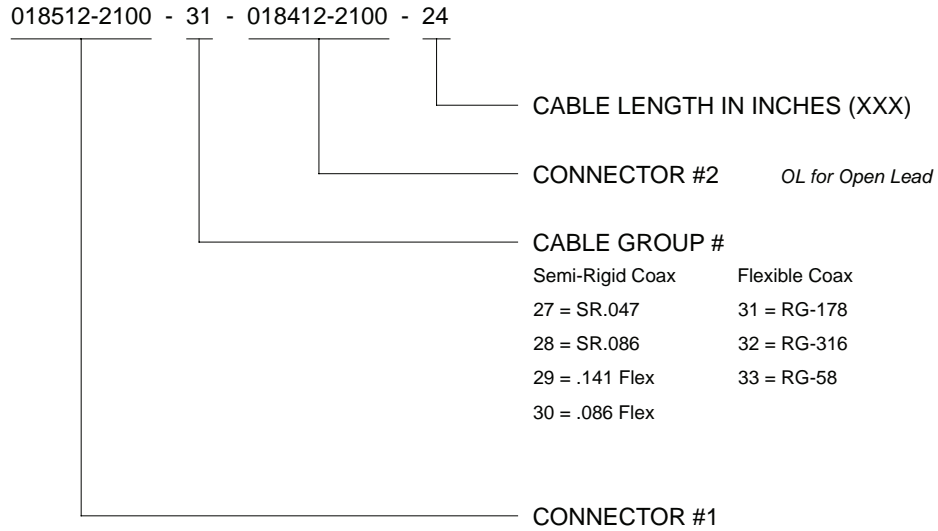
### Insert Arrangements


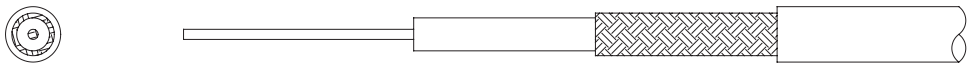


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## Part Number Description Code



Semi-Rigid Coax Cables				
				
Cable Group	Cable Designation	Impedance (Ohms)	Jacket	Inner Conductor
27	SR.047	50	0.047"	0.0362"
28	SR.086	50	0.0865"	0.0201"
				
Flexible Coax Cables				
29	.141 Flex	50	0.160"	0.036"
30	.086 Flex	50	0.104"	0.020"
31	RG-178	50	0.071"	0.012"
32	RG-316	50	0.098"	0.0201"
33	RG-58	50	0.195"	0.0355"