



# MMBX Plug Snap-On Connector Crimp/Solder Attachment for RG316, RG174, With Male Center Contact

## RF Connectors Technical Data Sheet

PE45251

### Configuration

- Snap-On MMBX Plug Connector
- 50 Ohms
- Straight Body Geometry
- RG316, RG174 Interface Type
- Crimp/Solder Attachment

### Features

- Max. Operating Frequency 3 GHz
- Excellent VSWR of 1.11:1
- Gold Plated Beryllium Copper Contact
- Reliable Snap-On connection method
- Small circuit footprint for high density applications
- Mechanical misalignment tolerance of 4.5°/0.7mm Max

### Applications

- General Purpose Test
- Custom Cable Assemblies
- Low cost blind mate interconnect
- Multi circuit board radios
- Board to board applications requiring multiple coaxial connections

### Description

Pasternack's PE45251 MMBX plug snap-on connector crimp/solder attachment for RG316 and RG174 is part of our full line of RF components available for same-day shipping. Our MMBX plug connector operates up to a maximum frequency of 3 GHz and offers excellent VSWR of 1.11:1.

Our MMBX plug connector PE45251 datasheet specifications and drawing with dimensions are shown below in this PDF. Pasternack's broad catalog of RF, microwave and millimeter wave connectors allows designers to configure and customize their signal connections however they like. Whether the need is to provide an I/O for a board design, or simply create a custom cable assembly configuration, Pasternack has the right connector for the job. Pasternack can also expertly build your custom cable connector assemblies for you and ship same-day.

### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		3	GHz
VSWR			1.11:1	
Insertion Loss			0.2	dB
Operating Voltage (DC)			250	Vdc
Dielectric Withstanding Voltage (DC)			750	Vdc
Insulation Resistance	1,000			MOhms

Electrical Specification Notes:  
 MMBX Plug has a male center contact

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [MMBX Plug Snap-On Connector Crimp/Solder Attachment for RG316, RG174, With Male Center Contact PE45251](#)



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**Mechanical Specifications**

**Size**

Length	0.57 in [14.48 mm]
Width/Dia.	0.185 in [4.70 mm]
Weight	0.00662 lbs [3 g]
Mating Cycles	100 Cycles

**Material Specifications**

Description	Material	Plating
Contact	Beryllium Copper	Gold
Insulation	PTFE	
Outer Conductor	Brass	Gold
Body	Brass	Gold

**Environmental Specifications**

**Temperature**

Operating Range	-55 to 155 deg C
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**Compliance Certifications** (see [product page](#) for current document)

#### Plotted and Other Data

Notes:

MMBX Plug Snap-On Connector Crimp/Solder Attachment for RG316, RG174, With Male Center Contact from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99% availability and are part of the broadest selection in the industry.

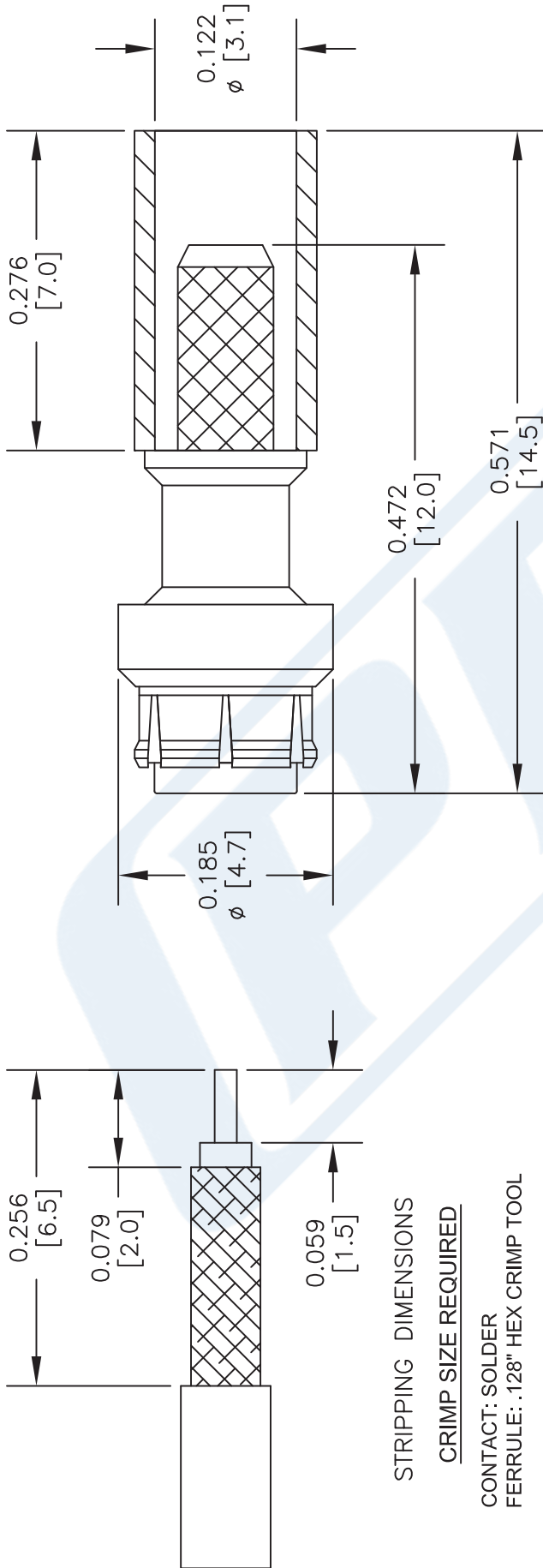
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URL: <https://www.pasternack.com/mmbx-plug-snap-on-rg316-rg174-connector-pe45251-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

# PE45251 CAD Drawing

MMBX Plug Snap-On Connector Crimp/Solder Attachment  
for RG316, RG174, With Male Center Contact



STRIPPING DIMENSIONS

CRIMP SIZE REQUIRED

CONTACT: SOLDER  
FERRULE: .128" HEX CRIMP TOOL

**STANDARD TOLERANCES**

.X ±0.2  
.XX ±0.1  
.XXX ±0.05

\*STANDARD TOLERANCES APPLY  
ONLY TO DIMENSIONS IN INCHES



**THE ENGINEER'S RF SOURCE**  
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DWG TITLE

**PE45251**

FSCM NO. 53919

NOTES:  
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.  
3. DIMENSIONS ARE IN INCHES [mm].  
4. FITS MIL-C-17 AND EQUIVALENT CABLES.

CAD FILE 092816

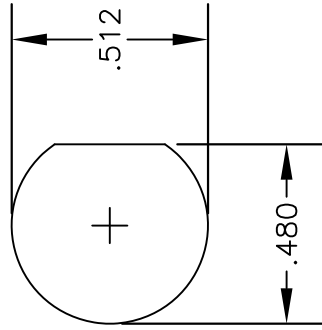
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SIZE A

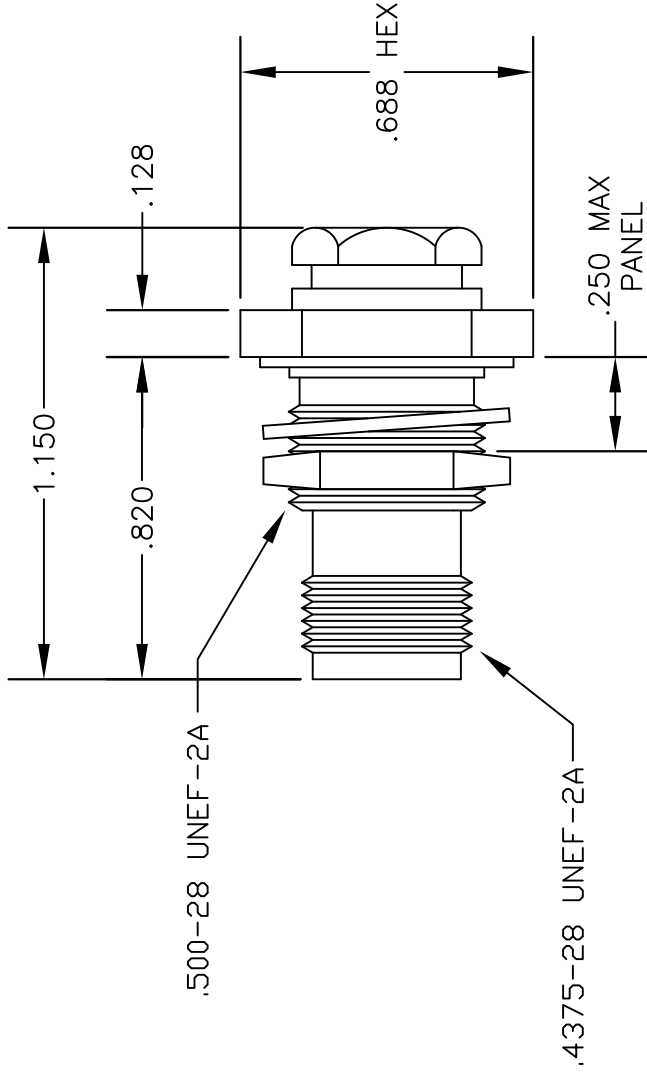
2233

**MATERIALS**

<b>BODY</b>	<b>BRASS NICKEL PLATED</b>
<b>CONTACT</b>	<b>GOLD PLATED</b>
<b>INSULATOR</b>	<b>PTFE</b>

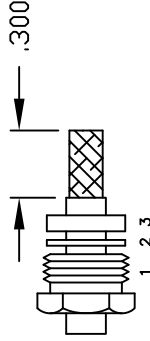


MOUNTING HOLE

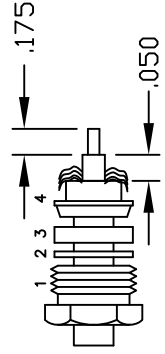


ASSEMBLY PROCEDURES

1. SLIDE CLAMP NUT (1), WASHER (2) & GASKET (3) OVER CABLE. STRIP CABLE AS SHOWN. DO NOT NICK BRAID WHILE CUTTING JACKET. TAPER END OF BRAID TO PERMIT ASSEMBLY OF BRAID CLAMP (4). SLIDE BRAID CLAMP (4) OVER BRAID & SEAT AGAINST CABLE.



2. FORM BRAID OVER CLAMP NUT (4). TRIM BRAID BACK TO SHOULDER. CUT DIELECTRIC & CENTER CONDUCTOR TO DIMENSION SHOWN. DO NOT NICK CENTER CONDUCTOR. SOLDER CONTACT TO CENTER CONDUCTOR. REMOVE EXCESS SOLDER. DO NOT OVER HEAT DIELECTRIC. INSERT CABLE ASSEMBLY INTO BODY & TIGHTEN.



NOTE: INSERT PTFE BEFORE CONTACT. WITH OPEN END SLIDE OVER CENTER CONDUCTOR RESTING AGAINST DIELECTRIC.



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**COAXIAL & FIBER OPTICS**

DWG TITLE

**PE4304**

DES. TNC FEMALE, BULKHEAD, CLAMP ATTACHMENT FOR RG174, RG188 & RG316

REV. A	FSCM NO. 53919	CAD FILE 042210	SCALE N/A	SIZE A	147
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NOTES:

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3. DIMENSIONS ARE IN INCHES.

# LMR<sup>®</sup>-100A Flexible Low Loss Communications Coax

## Ideal for...

- Drop-in Replacement for RG-316/RG-174 (uses standard connectors)
- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs
- Any application (e.g. WLL, GPS, LMR, WLAN, WiSP, WiMax, SCADA, Mobile Antennas) requiring an easily routed, low loss RF cable

• **LMR<sup>®</sup>-PVC** is designed for low loss general-purpose indoor/outdoor applications and is somewhat more flexible than the standard polyethylene jacketed LMR.

• **LMR<sup>®</sup>-PVC-W** is a white-jacketed version of LMR-PVC for marine and other indoor/outdoor applications where color compatibility is desired.

• **Flexibility** and bendability are hallmarks of the LMR-100A cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.

• **Low Loss** is another hallmark feature of LMR-100A. Size for size LMR has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.

• **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).

• **Weatherability:** LMR-100A cables designed for outdoor exposure incorporate the best materials for UV resistance and have life expectancy in excess of 20 years.

• **Connectors:** A wide variety of connectors are available for LMR-100A cable, including all common interface types, reverse polarity, and a choice of solder or non-solder center pins. Most LMR connectors employ crimp outer attachment using standard hex crimp sizes.

• **Cable Assemblies:** All LMR-100A cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

Part Description					Stock
Part Number	Application	Jacket	Color	Code	
LMR-100A-FR	Indoor/Outdoor Riser CMR	FRPE	Black	54037	
LMR-100A-PVC	Indoor/Outdoor	PVC	Black	54119	
LMR-100A-PVC-W	Indoor/Outdoor	PVC	White	54200	

PVC = Poly Vinyl Chloride; MTO = Made to Order



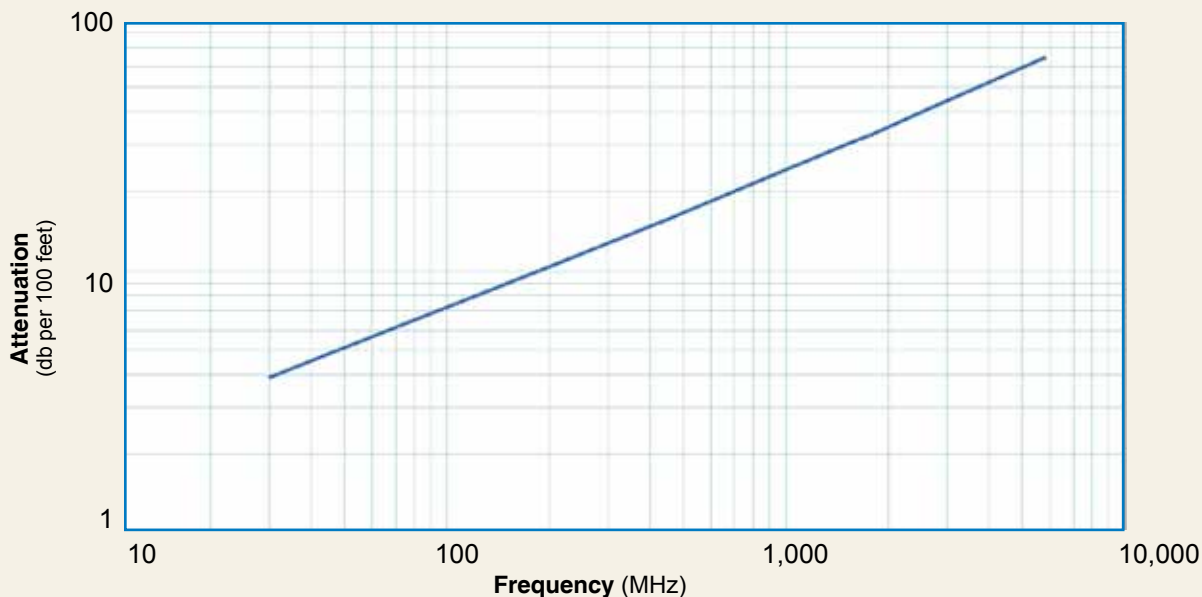
Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid BCCS	0.018	(0.46)
Dielectric	Solid PE	0.060	(1.52)
Outer Conductor	Aluminum Tape	0.065	(1.65)
Overall Braid	Tinned Copper	0.083	(2.11)
Jacket	(see table above)	0.110	(2.79)

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	0.25	(6.4)
Bend Radius: repeated	in. (mm)	1	(25.4)
Bending Moment	ft-lb (N-m)	0.1	(0.014)
Weight	lb/ft (kg/m)	0.0092	(.014)
Tensile Strength	lb (kg)	15	(6.8)
Flat Plate Crush	lb/in. (kg/mm)	10	(0.18)

Environmental Specifications		
Performance Property	°F	°C
Installation Temperature Range	-40/+185	-40/+85
Storage Temperature Range	-94/+185	-70/+85
Operating Temperature Range	-40/+185	-40/+85

Electrical Specifications			
Performance Property	Units	US	(metric)
Velocity of Propagation	%	66	
Dielectric Constant	NA	2.30	
Time Delay	nS/ft (nS/m)	1.54	(5.05)
Impedance	ohms	50	
Capacitance	pF/ft (pF/m)	30.8	(101.1)
Inductance	uH/ft (uH/m)	0.077	(0.25)
Shielding Effectiveness	dB	>90	
DC Resistance			
Inner Conductor	ohms/1000ft (/km)	81.0	(266)
Outer Conductor	ohms/1000ft (/km)	9.5	(31.2)
Voltage Withstand	Volts DC	500	
Jacket Spark	Volts RMS	2000	
Peak Power	kW	0.6	

**Attenuation vs. Frequency (typical)**



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	5800
<b>Attenuation dB/100 ft</b>	3.9	5.1	8.9	10.9	15.8	22.8	30.1	33.2	35.2	39.8	64.1
<b>Attenuation dB/100 m</b>	12.9	16.7	29.4	35.8	51.9	74.9	98.7	109.0	115.5	130.6	210.3
<b>Avg. Power kW</b>	0.230	0.180	0.100	0.083	0.057	0.039	0.029	0.027	0.025	0.022	0.013

**Calculate Attenuation** =  $(0.709140) \cdot \sqrt{\text{FMHz}} + (0.001740) \cdot \text{FMHz}$  (interactive calculator available at <http://www.timesmicrowave/telecom>)  
**Attenuation:** VSWR=1.0 ; Ambient = +25°C (77°F) **Power:** VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F);  
 Sea Level; dry air; atmospheric pressure; no solar loading



**Connectors**

Interface	Description	Part Number	Stock Code	VSWR ** Freq. (GHz)	Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in (mm)	Width in (mm)	Weight lb (g)
SMA male	Straight Plug	TC-100-SM	3190-1551	<1.25:1 (<3)	Hex	Solder	Crimp	SS/G	1.0 (25.4)	0.32 (8.1)	0.015 (6.8)
TNC male	Straight Plug	TC-100-TM	3190-1552	<1.25:1 (<3)	Knurl	Solder	Crimp	S/G	1.4 (35.6)	0.59 (15.0)	0.045 (20.4)

\* Finish metals: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alballoy \*\*VSWR spec based on 3 foot cable with a connector pair



**Install Tools**

Type	Part Number	Stock Code	Description
Crimp Tool	CT-240/200/195/100	3190-667	Crimp tool for LMR-100, 195, 200 and 240 connectors
Cutting Tool	CCT-01	3190-1544	Cable end flush cut tool
Replacement Blade	RB-01	3190-1609	Replacement blade for cutting tool

