



## MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax

### RF Cable Assemblies Technical Data Sheet

PE3M0033

#### Configuration

- Connector 1: M39012/16-0014(BNC Male)
- Connector 2: M39012/55-3028(SMA Male)
- Cable: M17/84-RG223

#### Features

- Max Frequency 4 GHz
- 65.9% Phase Velocity
- Double Shielded
- PVC Jacket
- Lot Traceability
- J-STD-Soldering
- Qualified (QPL) cable and connectors
- RF Test Plots
- Test Report
- In stock and ready to ship

#### Applications

- Hi-Rel
- MIL-DTL-17 Requirements
- Avionics
- IFF
- SATCOM
- ECM

#### Description

Pasternack's MIL-DTL-17 cable assemblies are part of our full line of reliable RF components available for same-day shipping. These commercial-off-the-shelf (COTS), military grade cable assemblies are designed and processed with high reliability in mind. MIL-PRF-39012 connectors and MIL-C-17 coaxial cable are assembled using J-STD soldering processes and WHMA-A-620 workmanship criteria. The combination of materials, processing and acceptance testing work together to create a dependable cable assembly for applications where performance over time is important or the cost of failure is high. Each finished MIL-DTL-17 cable assembly is traceable to its component lots and a test report is available for every lot produced.

Our MIL-DTL-17 cable assembly datasheet specifications and drawing with dimensions are shown below in this PDF. Pasternack's broad catalog of RF, microwave and millimeter wave cable assemblies allow designers to configure and customize their signal connections however they like. Whether the need is to provide reliable mil-spec connections or fielding dependable RF cable assemblies, Pasternack has the right cable assemblies for the job. Pasternack can also expertly build your custom cable assemblies for you and ship same day.

#### Referenced Specifications

IPC/WHMA-A-620  
MIL-DTL-17  
MIL-STD-348

MIL-PRF-39012  
IPC J-STD-001  
IPC J-STD-006

SAE AS5942  
SAE AS23053

Requirements and Acceptance for Cable and Wire Harness Assemblies  
Cables, Radio Frequency, Flexible and Semirigid, General Specification for  
Radio Frequency Connector Interfaces for MIL-DTL-3643, MIL-DTL-3650, MIL-DTL-3655, MIL-DTL-25516, MIL-PRF-31031, MIL-PRF-39012, MIL-PRF-49142, MIL-PRF...  
Connectors, Coaxial, Radio Frequency, General Specification for  
Requirements for Soldered Electrical and Electronic Assemblies  
Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for  
Electronic Soldering Applications  
Marking of Electrical Insulating Materials  
Insulation Sleeving, Electrical, Heat Shrinkable, General Specifications For

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax PE3M0033](#)



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SAE AS22520

Crimping Tools, Wire Termination, General Specification For

### Material Specifications

| Component     | Specification                                   |
|---------------|---|
| Cable         | M17/84-RG223 in accordance with MIL-DTL-17      |
| Connector 1   | M39012/16-0014 in accordance with MIL-PRF-39012 |
| Connector 2   | M39012/55-3028 in accordance with MIL-PRF-39012 |
| Heat Shrink 1 | M23053/5-106-0 in accordance with SAE AS23053   |
| Heat Shrink 2 | M23053/5-106-0 in accordance with SAE AS23053   |
| Solder        | SN63 in accordance with J-STD-006               |

### Electrical Specifications

| Description                          | Minimum | Typical       | Maximum | Units           |
|--------------------------------------|---------|---------------|---------|-----------------|
| Frequency Range                      | DC      |               | 4       | GHz             |
| VSWR                                 |         |               | 1.6:1   |                 |
| Velocity of Propagation              |         | 65.9          |         | %               |
| Capacitance                          |         | 32.2 [105.64] |         | pF/ft [pF/m]    |
| DC Resistance Inner Conductor        |         | 0.9 [2.95]    |         | Ω/1000ft [Ω/Km] |
| Dielectric Withstanding Voltage (AC) |         |               | 1,000   | Vrms            |

### Specifications by Frequency

| Description           | F1    | F2   | F3   | F4   | F5 | Units |
|-----------------------|-------|------|------|------|----|-------|
| Frequency             | 0.05  | 0.4  | 1    | 4    |    | GHz   |
| Insertion Loss (Max.) | 0.048 | 0.12 | 0.21 | 0.47 |    | dB/ft |
|                       | 0.16  | 0.39 | 0.69 | 1.54 |    | dB/m  |

### Electrical Specification Notes:

Insertion Loss does not include the loss of the connectors. Insertion Loss is estimated as 0.1dB per connector.

### Mechanical Specifications

#### Cable Assembly

| Description          | Minimum | Typical | Maximum     | Units   |
|----------------------|---------|---------|-------------|---------|
| Cable Outer Diameter | 0.208   | 0.212   | 0.216       | in      |
| Weight               |         |         | 0.11 [49.9] | lbs [g] |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax PE3M0033](#)



## MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax

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\*Length Tolerances: +0.5, -0 inches for Length ≤ 1 foot; +1, -0 inches for Length >1 to 5 feet; +2, -0 inches for Length >5 to 10 feet; +3, -0 inches for Length >10 to 25 feet and +2%, -0 inches for Length >25 feet.

#### Cable Characteristics

| Description                          | Specification      |
|--------------------------------------|--------------------|
| Cable Type                           | M17/84-RG223       |
| Impedance                            | 50 Ohms            |
| Inner Conductor Type                 | Solid              |
| Inner Conductor Material and Plating | Silver Clad Copper |
| Dielectric Type                      | PE                 |
| Number of Shields                    | 2                  |
| Shield Layer 1                       | Silver Clad Copper |
| Shield Layer 2                       | Silver Clad Copper |
| Outer Conductor Diameter             | 0.176 in [4.47 mm] |
| Jacket Material                      | PVC                |

#### Connector Characteristics

| Description                       | Connector 1       | Connector 2                |
|-----------------------------------|-------------------|----------------------------|
| Type                              | BNC Male          | SMA Male                   |
| Specification                     | MIL-PRF-39012     | MIL-PRF-39012              |
| Impedance                         | 50 Ohms           | 50 Ohms                    |
| Contact Material and Plating      | Brass, Gold       | Beryllium Copper, Gold     |
| Contact Plating Specification     | MIL-G-45204       |                            |
| Dielectric Type                   | Teflon            | PTFE                       |
| Body Material and Plating         | Brass, Silver     | Passivated Stainless Steel |
| Body Plating Specification        | QQ-S-365          |                            |
| Coupling Nut Material and Plating |                   | Passivated Stainless Steel |
| Seal Gasket Material              | Silicone Rubber   | Silicone Rubber            |
| Contact Gage Specification        | 0.210 to 0.230 in | 0.000 in min               |
| Insulator Gage Specification      | 0.208 to 0.228 in | 0.000 in min               |

Mechanical Specification Notes:

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**Environmental Specifications**

| Description                 | Specification    |
|-----------------------------|------------------|
| Temperature Operating Range | -40 to +85 deg C |

**Compliance Certifications** (see [product page](#) for current document)

**Process Specifications**

| Process     | Specification                                       |
|-------------|---|
| Soldering   | in accordance with J-STD-001, class 3               |
| Crimping    | dies in accordance with SAE AS22520                 |
| Marking     | shall meet the adherence requirements of SAE AS5942 |
| Workmanship | shall be in accordance with IPC/WHMA-A-620, class 3 |

**Tests and Inspections**

| Description                                     | Sampling     |
|---|--------------|
| Connector Gaging (pin and insulator position)   | 100%         |
| Insertion Loss                                  | 100%         |
| VSWR  | 100%         |
| Dielectric Withstanding Voltage (DWV)           | 100%         |
| Visual - workmanship, configuration and marking | 100%         |
| Length  | C=0, 1.5 AQL |
| Mass  | C=0, 1.5 AQL |

**Plotted and Other Data**

Notes:

- Values at 25°C, sea level.

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## MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax

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#### How to Order

Part Number Configuration:

**PE3M0033**

- **xx**

**uu**

Unit of Measure:  
cm = Centimeters  
<blank> = Inches  
Length  
Base Number

Example: PE3M0033-12 = 12 inches long cable  
PE3M0033-100cm = 100 cm long cable

MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

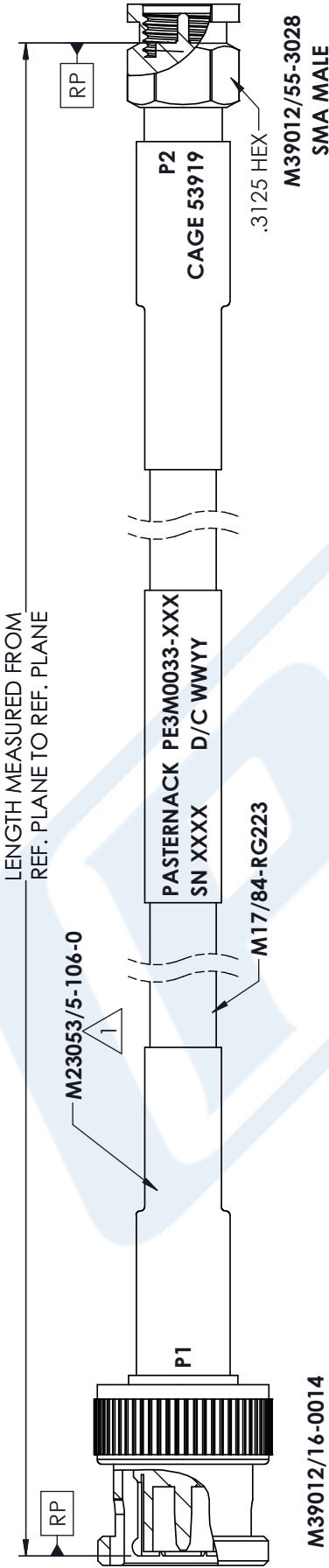
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax PE3M0033](https://www.pasternack.com/bnc-male-sma-male-m17-84-rg223-cable-assembly-pe3m0033-p.aspx)

URL: <https://www.pasternack.com/bnc-male-sma-male-m17-84-rg223-cable-assembly-pe3m0033-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.

PE3M0033 CAD Drawing

MIL-DTL-17 BNC Male to SMA Male Cable Using M17/84-RG223 Coax



M39012/16-0014  
BNC MALE

M39012/55-3028  
SMA MALE

PASTERNACK PE3M0033-XXX  
SN XXXX D/C WWWW

P2  
CAGE 53919

P1

M17/84-RG223

M23053/5-106-0

STANDARD TOLERANCES

.X ±0.2  
.XX ±0.01  
.XXX ±0.005

NOTES:

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES 1. BLACK HEAT SHRINK WITH WHITE MARKINGS 3 PLACES.



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DWG TITLE

PE3M0033

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].

CAGE CODE 53919

CAD FILE 08/20/18

SCALE N/A

SIZE A

CN2379