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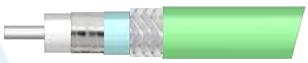
# Temperature Conditioned TNC Male Right Angle to N Male Right Angle Low Loss Cable 12 Inch Length Using PE-P142LL Coax

## RF Cable Assemblies Technical Data Sheet PE3M0173-12

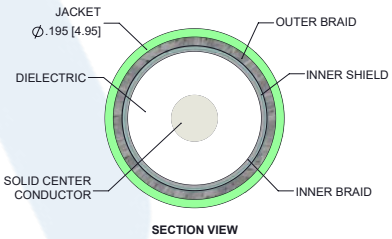
## Configuration

- Connector 1: PE44812 (TNC Male Right Angle)
- Connector 2: PE44816 (N Male Right Angle)
- Cable: PE-P142LL



## Features

- Max Frequency 18 GHz
- 80% Phase Velocity
- Triple Shielded
- FEP Jacket
- Thermally Pre-Conditioned Cable
- Captivated Stainless Steel Connectors
- Expanded PTFE dielectric
- J-STD-Soldering
- Lot Traceability
- Test Report
- Ship same day




## Applications

- General Purpose
- Laboratory Use
- High Reliability
- Extreme Temperatures
- Military Electronics
- Avionics
- IFF
- SATCOM
- ECM

### Description

Pasternack's temperature conditioned low loss cable assemblies are part of our full line of reliable RF components available for shipment same day. These commercial-off-the-shelf (COTS), RF / microwave cable assemblies are designed and processed with high reliability in mind. Captivated stainless steel cable assembly connectors and thermally pre-conditioned triple-shielded coaxial cable are assembled using J-STD soldering processes and WHMA-A-620 workmanship criteria. The combination of stable 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 COTS temperature conditioned low loss cable assembly is traceable to its component lots and a test report is available for every lot produced.

Our highly reliable low loss conditioned RF 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 stable connections or fielding dependable RF cables, Pasternack has the right cable assemblies for the job. Pasternack can also expertly build your custom cable assemblies for you and ship them same day.

### Referenced Specifications

| | |
|---|---|
| IPC/WHMA-A-620 | Requirements and Acceptance for Cable and Wire Harness Assemblies |
| MIL-STD-348 | 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... |
| IPC J-STD-001 | Requirements for Soldered Electrical and Electronic Assemblies |
| IPC J-STD-006 | Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: Temperature Conditioned TNC Male Right Angle to N Male Right Angle Low Loss Cable 12 Inch Length Using PE-P142LL Coax PE3M0173-12

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| | |
|---|---|
| SAE AS5942 | Marking of Electrical Insulating Materials |
| SAE AS23053 | Insulation Sleeving, Electrical, Heat Shrinkable, General Specifications For |

## Material Specifications

| Component | Specification |
|---|---|
| Cable | PE-P142LL in accordance with PE-P142LL datasheet |
| Connector 1 | PE44812 in accordance with MIL-STD-348 |
| Connector 2 | PE44816 in accordance with MIL-STD-348 |
| Heat Shrink 1 | SUMITUBE W3B2(4X) SIZE 24/6 in accordance with SAE AS23053 (AS APPLICABLE) |
| Heat Shrink 2 | SUMITUBE W3B2(4X) SIZE 24/6 in accordance with SAE AS23053 (AS APPLICABLE) |
| Heat Shrink 3 | M23053/4-304-0 in accordance with SAE AS23053 |
| Heat Shrink 4 | M23053/4-304-0 in accordance with SAE AS23053 |
| Solder | SN63 in accordance with J-STD-006 |

## Electrical Specifications

| Description | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|
| Frequency Range | DC | | 18 | GHz |
| VSWR | | | 1.44:1 | |
| Velocity of Propagation | | 80 | | % |
| Capacitance | | 25 [82.02] | | pF/ft [pF/m] |
| Dielectric Withstanding Voltage (AC) | | | 750 | Vrms |

### Specifications by Frequency

| Description | F1 | F2 | F3 | F4 | F5 | Units |
|---|---|---|---|---|---|---|
| Frequency | 1 | 2 | 4.5 | 9 | 18 | GHz |
| Insertion Loss (Max.) | 0.39 | 0.42 | 0.48 | 0.56 | 0.68 | dB |

Electrical Specification Notes:
The Insertion Loss data above is based on the performance specifications of the coax cable used in this assembly. The Insertion Loss includes an estimated insertion loss of 0.2 dB for the TNC Male Right Angle connector and 0.1 dB TNC Male connector.

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Right Angle to N Male Right Angle Low Loss Cable
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## Mechanical Specifications

### Cable Assembly

| Description | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|
| Length* | 12 [304.8] | 12 [304.8] | 12.5 [317.5] | in [mm] |
| Cable Outer Diameter | 0.19 | 0.195 | 0.2 | in |
| Weight | | | 0.27 [122.47] | lbs [g] |

### Cable Characteristics

| Description | Specification |
|---|---|
| Cable Type | PE-P142LL |
| Impedance | 50 Ohms |
| Inner Conductor Type | Solid |
| Inner Conductor Material and Plating | Copper, Silver |
| Dielectric Type | Expanded PTFE Tape |
| Number of Shields | 3 |
| Shield Layer 1 | Silver Plated Copper Tape |
| Shield Layer 2 | Aluminum Polyester |
| Shield Layer 3 | Silver Plated Copper Wire |
| Jacket Material | FEP |

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## RF Cable Assemblies Technical Data Sheet PE3M0173-12

### Connector Characteristics

| Description | Connector 1 | Connector 2 |
|---|---|---|
| Type | TNC Male Right Angle | N Male Right Angle |
| Specification | MIL-STD-348 | MIL-STD-348 |
| Impedance | 50 Ohms | 50 Ohms |
| Contact Material and Plating | Beryllium Copper, Gold over Nickel | Beryllium Copper, Gold over Nickel |
| Contact Plating Specification | 50 µin minimum | 50 µin minimum |
| Dielectric Type | PTFE | PTFE |
| Body Material and Plating | Passivated Stainless Steel | Passivated Stainless Steel |
| Body Plating Specification | SAE-AMS-2700 | SAE-AMS-2700 |
| Coupling Nut Material and Plating | Passivated Stainless Steel | Passivated Stainless Steel |
| Coupling Nut Plating Specification | SAE-AMS-2700 | SAE-AMS-2700 |
| Hex Size | 9/16 inch | 3/4 inch |
| Seal Gasket Material | Silicone Rubber | Silicone Rubber |
| Contact Gage Specification | 0.210 to 0.230 in | 0.210 in min |
| Insulator Gage Specification | 0.208 to 0.228 in | |

Mechanical Specification Notes:

### Environmental Specifications

| Description | Specification |
|---|---|
| Temperature Operating Range | -55 to +125 deg C |

### Compliance Certifications (see product page for current document)

### Process Specifications

| Process | Specification |
|---|---|
| Cable Preconditioning | 5 cycles, -55 °C to +125°C, 20 minute dwells |
| Soldering | in accordance with J-STD-001, class 3 |
| Marking | shall meet the adherence requirements of SAE AS5942 |
| Workmanship | shall be in accordance with IPC/WHMA-A-620, class 3 |

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## Tests and Inspections

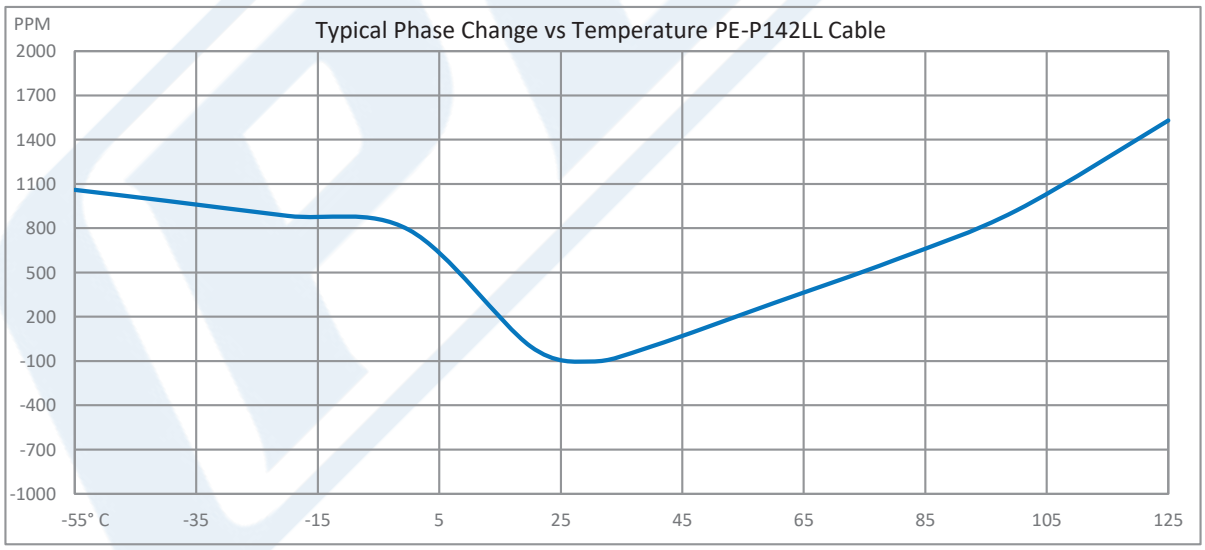
| Description | Sampling |
|---|---|
| Connector Gaging (pin and insulator position) | 100% |
| Insertion Loss | 100% |
| VSWR | 100% |
| Dielectric Withstanding Voltage (DWV) | 100% |
| Visual - workmanship, configuration and marking | 100% |
| Length | C=0, 1.5 AQL |
| Mass | C=0, 1.5 AQL |

## Plotted and Other Data

Notes:

- Values at 25°C, sea level.

### Typical Performance Data

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## RF Cable Assemblies Technical Data Sheet PE3M0173-12

### How to Order

Part Number Configuration: **PE3M0173 - xx uu**

- uu — Unit of Measure: cm = Centimeters, <blank> = Inches
- xx — Length
- PE3M0173 — Base Number

Example: PE3M0173-12 = 12 inches long cable
PE3M0173-100cm = 100 cm long cable

Cable Assembly Length Tolerances:

| Imperial English | | Metric | |
|---|---|---|---|
| "L" ≤ 1 ft | +0.5 in / -0 in | "L" ≤ 0.3 m | +12.5 mm / -0 mm |
| 1 ft < "L" ≤ 5 ft | +1 in / -0 in | 0.3 m < "L" ≤ 1.5 m | +25 mm / -0 mm |
| 5 ft < "L" ≤ 10 ft | +2 in / -0 in | 1.5 m < "L" ≤ 3 m | +50 mm / -0 mm |
| 10 ft < "L" ≤ 25 ft | +3 in / -0 in | 3 m < "L" ≤ 7.5 m | +75 mm / -0 mm |
| 25 ft < "L" | +2%"L" / -0%"L" | 7.5 m < "L" | +2%"L" / -0%"L" |

* Cable Length = "L"

Temperature Conditioned TNC Male Right Angle to N Male Right Angle Low Loss Cable 12 Inch Length Using PE-P142LL 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.

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URL: https://www.pasternack.com/temperature-conditioned-tnc-male-n-male-pe-p142ll-cable-assembly-pe3m0173-12-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.

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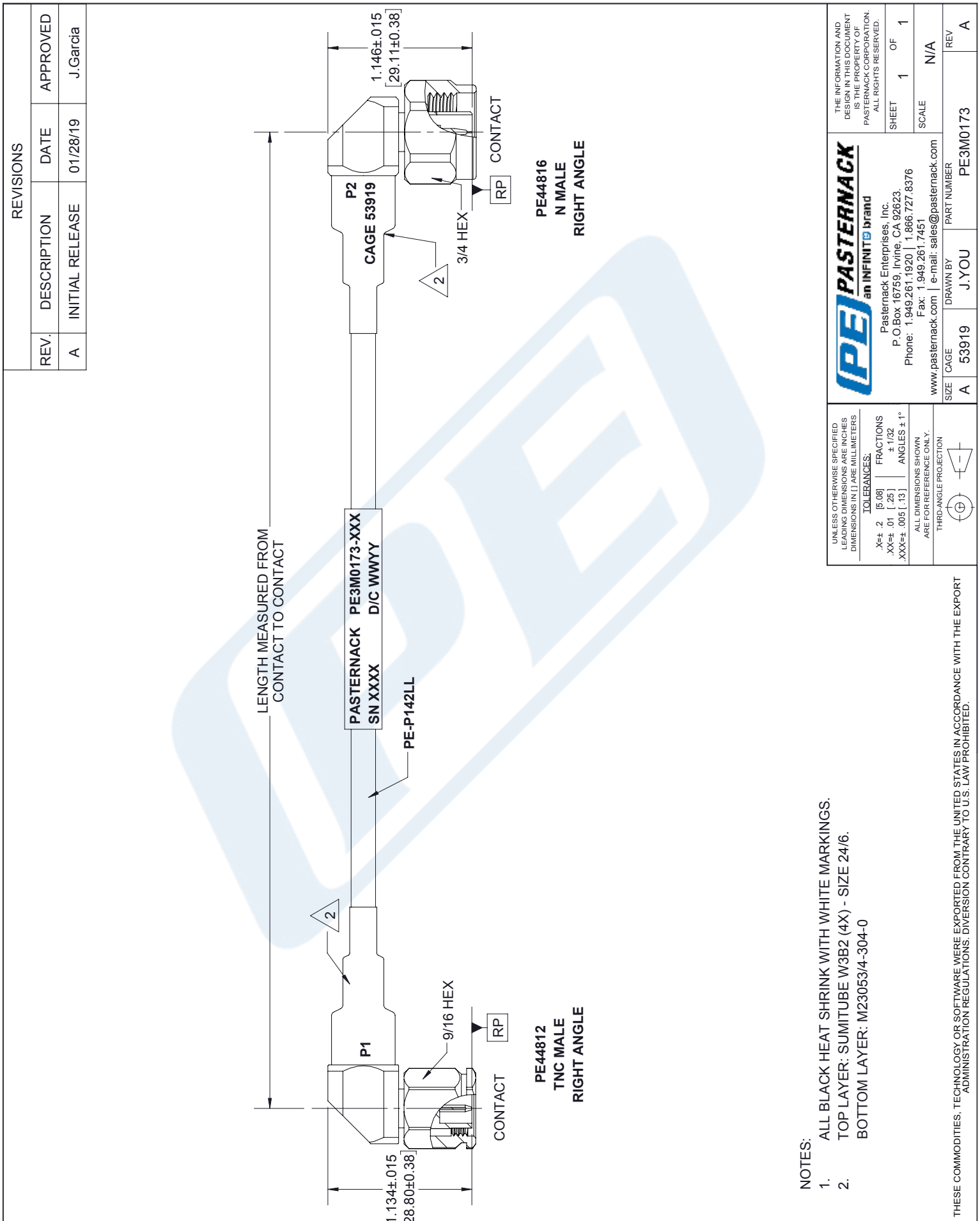
# PE3M0173-12 CAD Drawing

Temperature Conditioned TNC Male Right Angle to N Male Right Angle
Low Loss Cable 12 Inch Length Using PE-P142LL Coax

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