

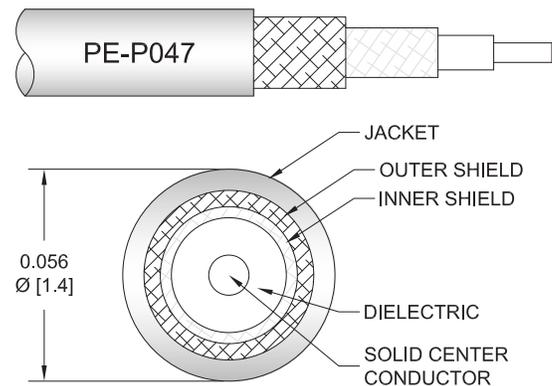
## SMPM Size 12 D38999 Contact Socket to SMPM Size 12 D38999 Contact Socket Cable Using PE-P047 Coax with HeatShrink, LF Solder



### PE3M0414

#### Configuration

- Connector 1: Push-on Mini SMP Socket
- Connector 2: Push-on Mini SMP Socket
- Cable Type: PE-P047
- Coax Flex Type: Flexible



#### Features

- Max Frequency: 50 GHz
- Can be installed in all D38999 size 12 inserts
- Lot traceability
- High speed RF cable assembly

#### Applications

- Military and Aerospace
- Avionics
- Industrial Automation

#### Description

The PE3M0414 from Pasternack is a D398999 cable assembly that is built with a size 12 mini SMP Socket contact on one end and a mini SMP Socket connector on the other. Pasternack MIL-DTL-38999 (also known as D38999 or 38999) coaxial cable assembly products are used in applications requiring high quality such as laboratory RF test and measurement, rugged and designed for defense/military, production environments, general use, etc. This mini SMP to mini SMP cable assembly is a part of one of the largest selections of same-day ship coaxial cables for RF, microwave, and millimeter wave interconnect solutions. This high frequency D38999 cable assembly operates at a maximum frequency of 50 GHz.

The PE3M0414 RF cable has a FEP jacket of 0.056-inch diameter. This radio frequency cable assembly can withstand temperatures ranging from -65 to 125 degrees C. Our mini SMP Socket to mini SMP Socket cable has a maximum VSWR of 1.4:1. This flexible RF cable assembly with a 0.5-inch diameter has copper as the cable's inner conducting material and FEP dielectric type. The PE3M0414 in-series RF cable has 90 dB of minimum RF shielding.

Mini SMP Socket to mini SMP Socket cable assembly is built with PE-P047, which is a flexible coax type. The Pasternack PE3M0414 flexible cable assembly has a 50 Ohm impedance and is double shielded. Additional dimensions, specifications, and CAD drawings for this mini SMP to mini SMP RF cables are available on our downloadable PDF datasheet.

Mini SMP Socket to mini SMP Socket cable assembly is just one of more than one million in-stock RF products available. Pasternack is where to buy high quality custom RF cable assembly products for rugged and MIL-STD designed military/defense, aerospace, outdoor and harsh environment, microwave and millimeter wave radio transmitter receiver, component inter-connection and more for RF test & measurement labs, telecom, phase stable, phase and delay matching, and other radio frequency applications can be manufactured. Variations of mini SMP cable assemblies can also be built and will ship on the same day as well, search this website or contact us for assistance. For further information on similar products, our expert technical support and trained sales team can get you the ideal mini SMP to mini SMP RF cable assembly as per your requirements.

SMPM Size 12 D38999 Contact Socket to SMPM  
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**PE3M0414**

**Referenced Specifications**

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
IPC/WHMA-A-620	Requirements and Acceptance for Cable and Wire Harness Assemblies
MIL-DTL-17	Cables, Radio Frequency, Flexible and Semirigid, General Specification for
MIL-PRF-39012	Connectors, Coaxial, Radio Frequency, General Specification for
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-55339, MIL-DTL-83517
SAE AS22520	Crimping Tools, Wire Termination, General Specification For
SAE AS23053	Insulation Sleeving, Electrical, Heat Shrinkable, General Specifications For
SAE AS5942	Marking of Electrical Insulating Materials
IPC J-STD-001	Requirements for Soldered Electrical and Electronic Assemblies

**Material Specifications**

Component	Specification
Cable	PE-P047 in accordance with PE-P047 datasheet
Connector 1	in accordance with MIL-DTL-38999
Connector 2	in accordance with MIL-DTL-38999
Heat Shrink 1	M23053/5-103-0 in accordance with SAE AS23053
Heat Shrink 2	M23053/5-103-0 in accordance with SAE AS23053
Solder	SAC305 in accordance with J-STD-006

**Electrical Specifications**

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		50	GHz
VSWR			1.4:1	
Velocity of Propagation		70		%
RF Shielding	90			dB
Capacitance		29 [95.14]		pF/ft [pF/m]

**Specifications by Frequency**

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**PE3M0414**

Part Number	Length	Description	F1	F2	F3	F4	F5	Units	Weight (lbs)
			Frequency		2500	5000	#####	#####	
PE3M0414	Custom Lengths Available	Insertion Loss (Typ.)	0.54	0.79	1.17	1.75	3.087	dB/ft	
			1.77	2.59	3.84	5.76	10.13	dB/m	
PE3M0414-6	6 inch	Insertion Loss (Typ.)	0.47	0.6	0.79	1.08	1.75	dB	0.0215
PE3M0414-12	12 inch	Insertion Loss (Typ.)	0.74	0.99	1.37	1.96	3.29	dB	0.023
PE3M0414-24	24 inch	Insertion Loss (Typ.)	1.28	1.78	2.54	3.71	6.38	dB	0.026
PE3M0414-36	36 inch	Insertion Loss (Typ.)	1.82	2.57	3.71	5.47	9.47	dB	0.029
PE3M0414-48	48 inch	Insertion Loss (Typ.)	2.35	3.35	4.88	7.22	12.55	dB	0.032
PE3M0414-60	60 inch	Insertion Loss (Typ.)	2.89	4.14	6.05	8.97	15.64	dB	0.035

The insertion loss data for the base model does not include loss due to the connectors. Each length includes insertion loss due to the connectors.

Loss due to Connector 1: 0.1 dB  
 Loss due to Connector 2: 0.1 dB  
 Base Weight: 0.023 pounds  
 Additional Weight per Foot: 0.003 pounds

Electrical Specification Notes:  
 Values at 25°C, sea level.

**Mechanical Specifications**

**Cable Assembly**

Description	Minimum	Typical	Maximum	Units
Length*			0 [0]	in [mm]
Cable Outer Diameter		0.056		in
Weight		0.023 [10.43]		lbs [g]

**Cable Characteristics**

Description	Specification
Cable Type	PE-P047
Impedance	50 Ohms
Inner Conductor Type	Solid
Inner Conductor Material and Plating	Copper, Silver
Dielectric Type	FEP
Number of Shields	2
Shield Layer 1	Silver Plated Copper Tape
Shield Layer 2	Silver Plated Copper Braid
Jacket Material	FEP

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## PE3M0414

### Connector Characteristics

Description	Connector 1	Connector 2
Type	Mini SMP Socket	Mini SMP Socket
Specification	MIL-DTL-38999	MIL-DTL-38999
Impedance	50 Ohms	50 Ohms
Configuration	Straight	Straight
Connection Method	Push-on	Push-on
Contact Size	12	12
Mating Cycles	1,000	1,000
Contact Material and Plating	Beryllium Copper, Gold	Beryllium Copper, Gold
Dielectric Type	PTFE	PTFE
Outer Conductor Material and Plating	Stainless Steel, Passivated	Stainless Steel, Passivated
Body Material and Plating	Beryllium Copper, Gold	Beryllium Copper, Gold

Mechanical Specification Notes:

### Environmental Specifications

Description	Specification
Temperature Operating Range	-65 to +125 deg C

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

### Plotted and Other Data

Notes:

Values at 25°C, sea level.

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## PE3M0414

### How to Order

Part Number Configuration:

**PE3M0414 - xx uu**

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

Example: PE3M0414-12 = 12 inches long cable  
PE3M0414-100cm = 100 cm long cable

Cable Assembly Length Tolerances:

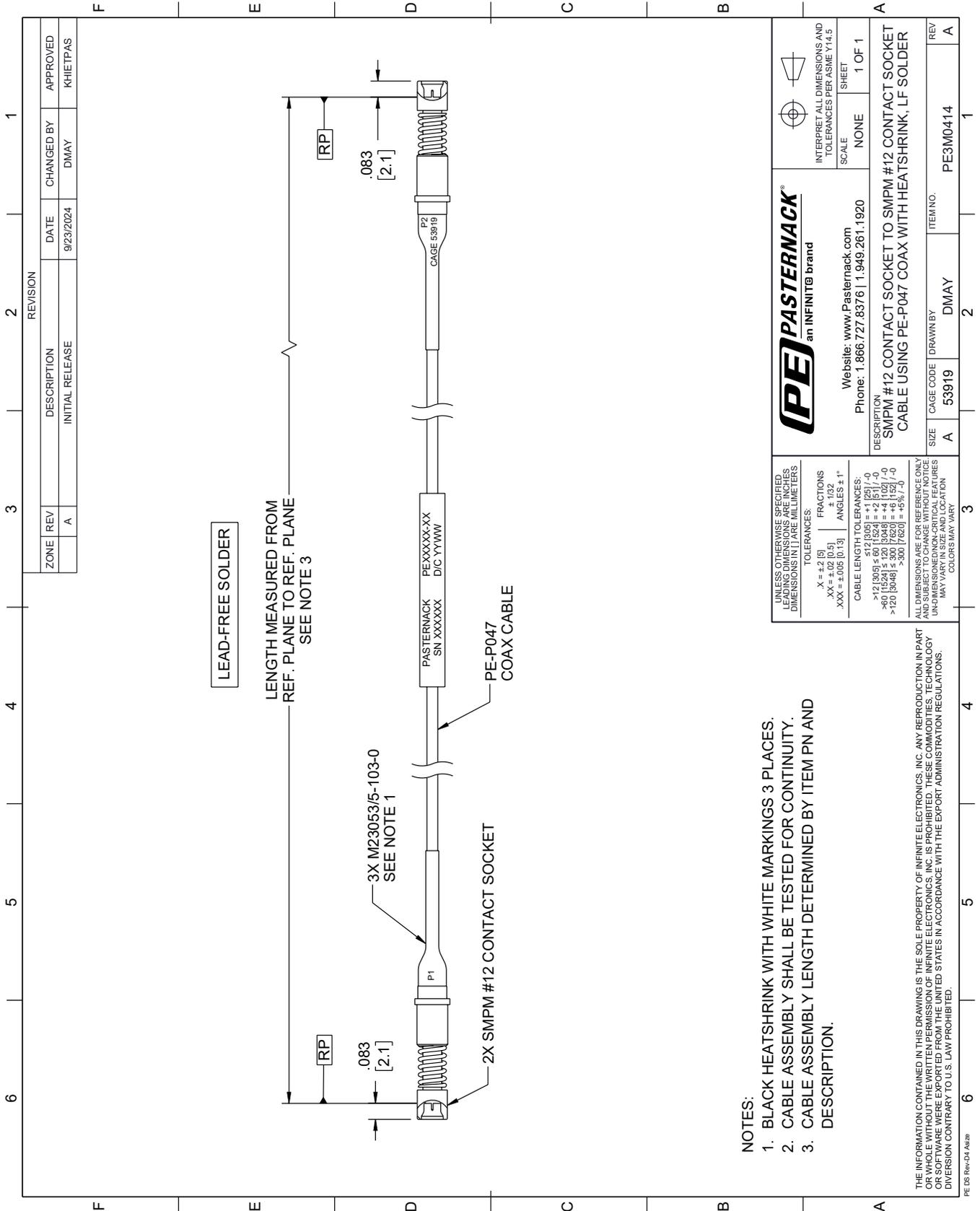
Imperial English		Metric	
"L" ≤ 1 ft	+0.5 in / -0 in	"L" ≤ 0.3 m	+12.5 mm / -0 mm
1 ft < "L" ≤ 5 ft	+1 in / -0 in	0.3 m < "L" ≤ 1.5 m	+25 mm / -0 mm
5 ft < "L" ≤ 10 ft	+2 in / -0 in	1.5 m < "L" ≤ 3 m	+50 mm / -0 mm
10 ft < "L" ≤ 25 ft	+3 in / -0 in	3 m < "L" ≤ 7.5 m	+75 mm / -0 mm
25 ft < "L"	+2%"L"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

\* Cable Length = "L"

PE3C1858

# PE3M0414 CAD Drawing

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## NOTES:

1. BLACK HEATSHRINK WITH WHITE MARKINGS 3 PLACES.
2. CABLE ASSEMBLY SHALL BE TESTED FOR CONTINUITY.
3. CABLE ASSEMBLY LENGTH DETERMINED BY ITEM PN AND DESCRIPTION.

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PE DS Rev-D4 Add2

UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE MILLIMETERS.

TOLERANCES:

.X = ±.2 [5]	FRACTIONS ± 1/32
.XX = ±.02 [0.5]	ANGLES ± 1°
.XXX = ±.005 [0.13]	

CABLE LENGTH TOLERANCES:

>12 [305] ≤ 60 [1524]	±.1 [2.5] / -0
>60 [1524] ≤ 120 [3048]	±.2 [5.1] / -0
>120 [3048] ≤ 300 [7620]	±.4 [10.2] / -0
>300 [7620]	±.6 [15.2] / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY. DIMENSIONS OF CRITICAL FEATURES MAY VARY IN SIZE AND LOCATION. COLORS MAY VARY.

		INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5	
Website: <a href="http://www.Pasternack.com">www.Pasternack.com</a> Phone: 1.866.727.8376   1.949.261.1920		SCALE	SHEET
		NONE	1 OF 1
DESCRIPTION <b>SMPM #12 CONTACT SOCKET TO SMPM #12 CONTACT SOCKET CABLE USING PE-P047 COAX WITH HEATSHRINK, LF SOLDER</b>			
SIZE	CAGE CODE	ITEM NO.	REV
A	53919	DMAY	A