



## N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250

### RF Connectors Technical Data Sheet



TC-250-NM-LP

### Times Microwave Systems Connector Specification

#### Configuration

- N Male Connector
- 50 Ohms
- Straight Body Geometry
- Connector Interface Types: SPP-250-LLPL, SPO-250, SPF-250
- Low PIM Design

#### Features

- Max. Operating Frequency 6 GHz
- Good VSWR of 1.35:1
- PIM levels lower than -160 dBc
- Silver Plated Phosphor Bronze Contact
- 196  $\mu$ m contact plating

#### Applications

- General Purpose Test
- Custom Cable Assemblies
- Distributed Antenna Systems (DAS)
- Wireless Communications
- Low PIM Applications

#### Description

Times Microwave's TC-250-NM-LP type N male connector offered by Pasternack with solder/solder attachment for Times' SPP-250-LLPL, SPO-250 and SPF-250 is part of our full line of RF components available for same-day shipping. Times Microwave's type N male connector operates up to a maximum frequency of 6 GHz and offers good VSWR of 1.35:1. The Times type N male connector also has low passive intermodulation of -160 dBc.

Times Microwave's type N male connector TC-250-NM-LP 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 assemblies for you and ship same-day.

#### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		6	GHz
VSWR			1.35:1	
Insertion Loss			0.25	dB
Passive Intermodulation			-160	dBc
Operating Voltage (DC)			1,000	Vdc
Inner Conductor DC Resistance			1	mOhms
Outer Conductor DC Resistance			1.5	mOhms
Insulation Resistance	5,000			MOhms

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250 TC-250-NM-LP](#)



## N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250

### RF Connectors Technical Data Sheet

#### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 3	3 to 6				GHz
VSWR, Max	1.25:1	1.35:1				

Electrical Specification Notes:  
Insertion Loss is  $0.1 \cdot \sqrt{f(\text{GHz})}$

#### Mechanical Specifications

##### Size

Length	1.13 in [28.7 mm]
Width/Dia.	0.94 in [23.88 mm]
Mating Torque	7.08 to 9.74 in-lbs [0.80 to 1.10 Nm]

#### Material Specifications

Description	Material	Plating
Contact	Phosphor Bronze	Silver 196 $\mu$ in
Insulation	PTFE	
Body	Brass	Tri-Metal 118 $\mu$ in
Coupling Nut	Brass	Tri-Metal 118 $\mu$ in
Gasket	Silicone Rubber	

#### Environmental Specifications

##### Temperature

Operating Range	-55 to +155 deg C
Humidity	IP67
Shock	US MIL-STD 202G
Vibration	US MIL-STD 202G
Thermal Shock	US MIL-STD 202G

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

#### Plotted and Other Data

Notes:

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250 TC-250-NM-LP](#)



## N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250

### RF Connectors Technical Data Sheet



TC-250-NM-LP

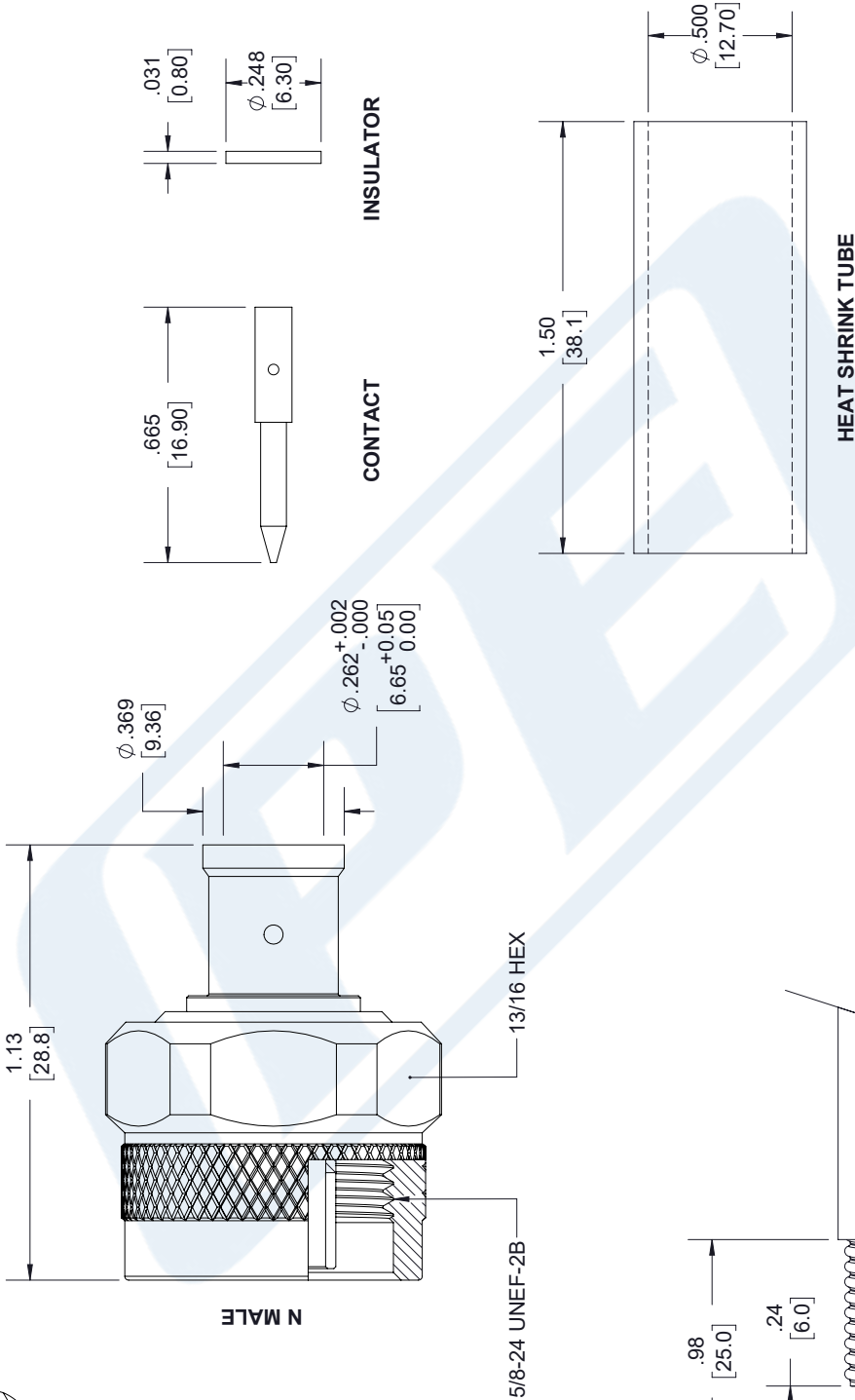
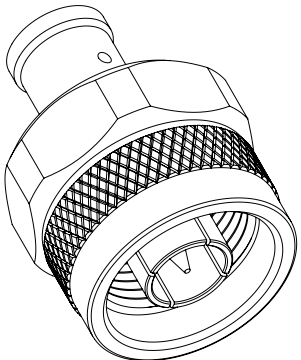
N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250 from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Low PIM Connector Solder Attachment for SPP-250-LLPL, SPO-250, SPF-250 TC-250-NM-LP](https://www.pasternack.com/n-male-spp-250-llpl-spo-250-connector-tc-250-nm-lp)

URL: <https://www.pasternack.com/n-male-spp-250-llpl-spo-250-connector-tc-250-nm-lp.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PCR TC-250-NM-LP	5/29/2020	S. ELLIS



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

TOLEANCES:

.X = ± .2	[5.08]	FRACTIONS	± 1/32
.XX = ± .02	[.51]	ANGLES	± 1°
.XXX = ± .005	[.13]	CABLE LENGTH (L)	TOLERANCES:
L ≤ 12 [305] = +1 [25] / -0			
12 [305] < L ≤ 60 [1524] = +2 [51] / -0			
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0			
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0			
300 [7620] < L = +5% / L / -0			

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION

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SHEET 1 OF 1

SCALE N/A

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SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	K. DANG	TC-250-NM-LP
REV	REV		A



# N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

## RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

### Times Microwave Systems Connector Specification

#### Configuration

- N Male Connector
- 50 Ohms
- Right Angle Body Geometry
- Connector Interface Types: SPO-250, SPF-250, SPP-250-LLPL
- Low PIM Design

#### Features

- Max. Operating Frequency 6 GHz
- Good VSWR of 1.35:1
- PIM levels lower than -160 dBc
- Silver Plated Brass Contact
- 200  $\mu$ m contact plating

#### Applications

- General Purpose Test
- Custom Cable Assemblies
- Distributed Antenna Systems (DAS)
- Wireless Communications
- Low PIM Applications

#### Description

Times Microwave's TC-250-NM-RA-LP type N male right angle connector offered by Pasternack with solder/solder attachment for Times' SPO-250, SPF-250 and SPP-250-LLPL is part of our full line of RF components available for same-day shipping. Times Microwave's type N male connector operates up to a maximum frequency of 6 GHz and offers good VSWR of 1.35:1. The Times type N male connector also has low passive intermodulation of -160 dBc. Its right angle body geometry allows for easier connections in tight spaces.

Times Microwave's type N male right angle connector TC-250-NM-RA-LP 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 assemblies for you and ship same-day.

#### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		6	GHz
VSWR			1.35:1	
Insertion Loss			0.25	dB
Passive Intermodulation			-160	dBc
Operating Voltage (DC)			2,500	Vdc
Insulation Resistance	5,000			MOhms

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL TC-250-NM-RA-LP](#)



# N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

## RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 3	3 to 6				GHz
VSWR, Max	1.1:1	1.35:1				

Electrical Specification Notes:  
Insertion Loss is  $0.1 \cdot \sqrt{FGHz}$

### Mechanical Specifications

#### Size

Length	1.01 in [25.65 mm]
Width/Dia.	0.94 in [23.88 mm]
Height	1.53 in [38.86 mm]
Mating Torque	15.05 in-lbs [1.70 Nm]

### Material Specifications

Description	Material	Plating
Contact	Brass	Silver 200 $\mu$ in
Insulation	PTFE	
Body	Brass	Tri-Metal 80 $\mu$ in
Coupling Nut	Brass	Tri-Metal 80 $\mu$ in
Gasket	Silicone	

### Environmental Specifications

#### Temperature

Operating Range	-55 to +125 deg C
Shock	MIL-STD 202G, Method 213, Condition I
Vibration	MIL-STD 202G, Method 204, Condition B
Thermal Shock	MIL-STD 202G, Method 107, Condition B

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

### Plotted and Other Data

Notes:

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL TC-250-NM-RA-LP](#)



## N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL

### RF Connectors Technical Data Sheet



TC-250-NM-RA-LP

N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL 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.

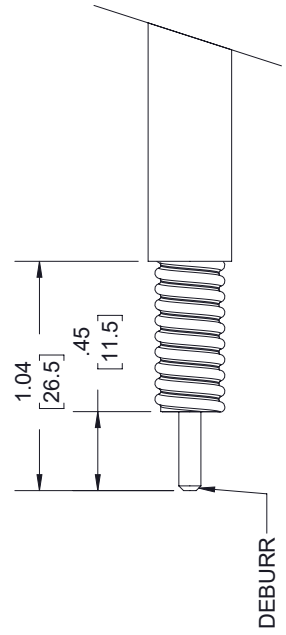
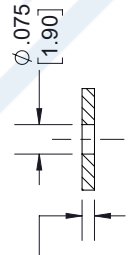
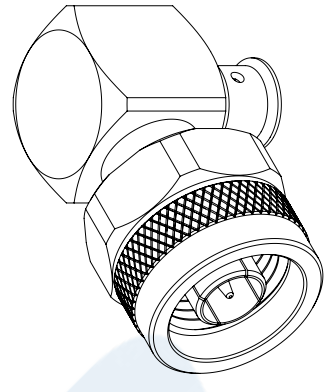
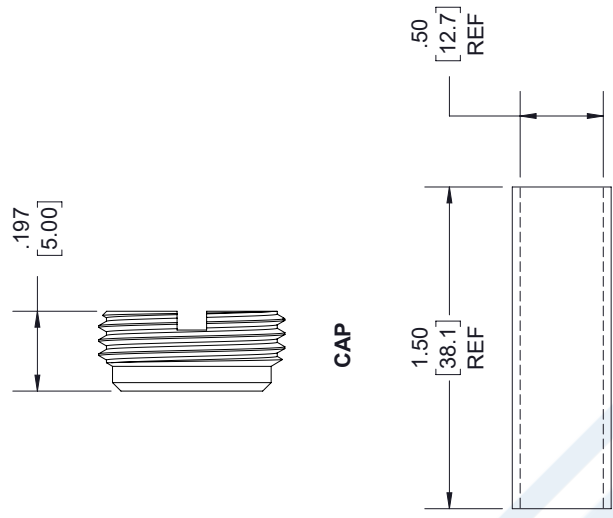
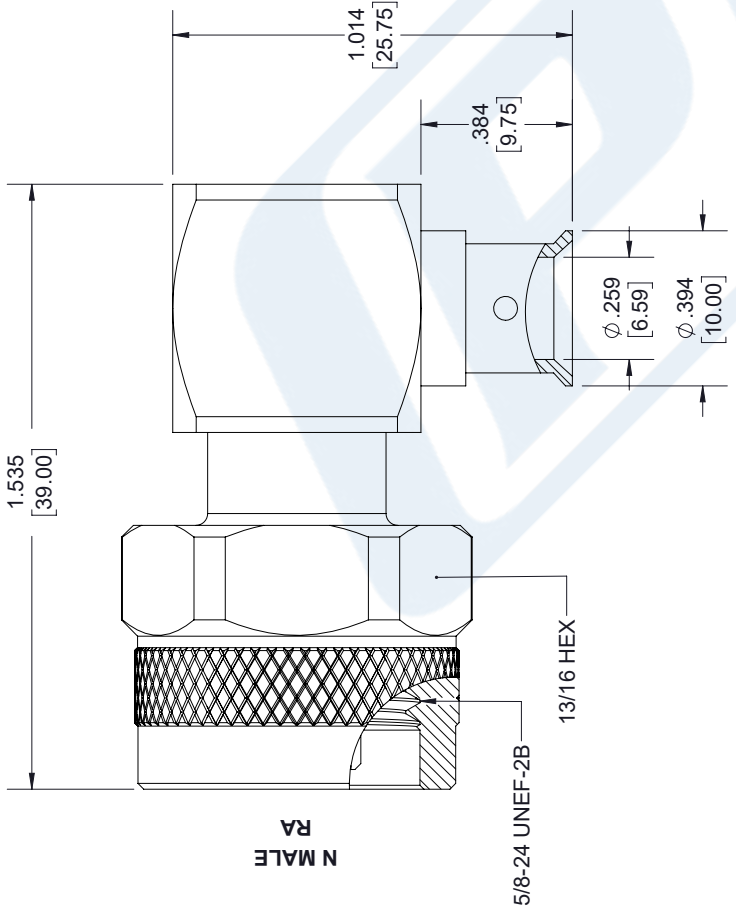
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [N Male Right Angle Low PIM Connector Solder Attachment for SPO-250, SPF-250, SPP-250-LLPL TC-250-NM-RA-LP](https://www.pasternack.com/n-male-spo-250-spf-250-connector-tc-250-nm-ra-lp-p.aspx)

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**TIMES** MICROWAVE SYSTEMS **TC-250-NM-RA-LP CAD Drawing**  
 N Male Right Angle Low PIM Connector Solder Attachment  
 for SPO-250, SPF-250, SPP-250-LLPL

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	03/04/19	S. SELLIS



**STRIPPING DIMENSIONS**

- NOTES:
- CABLE ATTACHMENT:
    - OUTER: SOLDER.
    - INNER: SOLDER.

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

TOLERANCES:

.X = ±.2 [5.08] FRACTIONS ± 1/32  
 .XX = ±.02 [.51] ANGLES ± 1°  
 .XXX = ±.005 [.13] CABLE LENGTH (L) TOLERANCES:  
 L ≤ 12 [305] = +1 [25] / -0  
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ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

**PE PASTERNAK**  
 an INFINITO brand

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THIRD-ANGLE PROJECTION

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SHEET 1 OF 1  
 SCALE N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	K. DANG	TC-250-NM-RA-LP
REV	A		



## Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket

### RF Cables Technical Data Sheet

PE-1/4SFHC

#### Configuration

- Low Loss Corrugated Cable
- 1 Shield(s)

#### Features

- Low Passive Intermodulation
- Solid copper outer conductor provides the highest possible RF shielding
- Excellent return loss performance
- Highly foamed dielectric provides low attenuation
- Superflexible helically corrugated copper outer conductor enables a small bending radius

#### Description

Our corrugated cables and Low PIM connector combinations result in cable assemblies with excellent Passive Intermodulation performance. Solid copper outer conductors provide the highest possible RF shielding. This Superflexible cable features excellent return loss performance. The highly foamed dielectric and optimized dimensions of these cables result in excellent low attenuation values. The Superflexible helically corrugated copper outer conductor allows for a small bending radius.

#### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		20.4	GHz
Cutoff Frequency		25		GHz
Impedance		50		Ohms
Velocity of Propagation		82		%
Shielding Effectiveness	120			dB
Dielectric Withstanding Voltage (DC)			900	Vdc
Jacket Spark			2,000	Vrms
Inner Conductor DC Resistance			3.2	Ohms/1000ft
Outer Conductor DC Resistance			2.53	Ohms/1000ft
Nominal Capacitance		24.4 [80.05]		pF/ft [pF/m]
Nominal Inductance		0.059 [0.19]		uH/ft [uH/m]

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket PE-1/4SFHC](#)



## Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket

### RF Cables Technical Data Sheet

PE-1/4SFHC

#### Performance by Frequency Band

Description	F1	F2	F3	F4	F5	Units
Frequency	0.03	0.15	0.45	0.9	1.5	GHz
Attenuation, Typ	0.94	2.14	3.75	5.46	7.26	dB/100ft
	3.08	7.02	12.3	17.91	23.82	dB/100m
Input Power (CW), Max	2,090	924	520	360	278	Watts

Description	F6	F7	F8	F9	F10	Units
Frequency	1.8	2	2.2	2.5	3	GHz
Attenuation, Typ	8.02	8.52	8.99	9.67	10.73	dB/100ft
	26.31	27.95	29.49	31.73	35.2	dB/100m
Input Power (CW), Max	250	238	230	210	190	Watts

#### Mechanical Specifications

Diameter	0.303 in [7.7 mm]
Weight	0.048 lbs/ft [0.07 kg/m]
Number of Bends, Min	20
Min. Bend Radius (Installation)	0.5 in [12.7 mm]
Min. Bend Radius (Repeated)	1 in [25.4 mm]
Tensile Strength	79 lbs [35.83 kg]

#### Construction Specifications

Description	Material and Plating	Diameter
Inner Conductor	Copper Clad Aluminum, 1 Strand	0.074 in [1.88 mm]
Conductor Type	Solid	
Dielectric	PE (F)	0.187 in [4.75 mm]
First Shield	Helically Corrugated Copper Tube	0.25 in [6.35 mm]
Jacket	PE, Black	0.303 in [7.7 mm]

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket PE-1/4SFHC](#)



## Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket

### RF Cables Technical Data Sheet

PE-1/4SFHC

#### Environmental Specifications

##### Temperature

Operating Range

-55 to +85 deg C

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

#### Plotted and Other Data

Notes:

Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket 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.

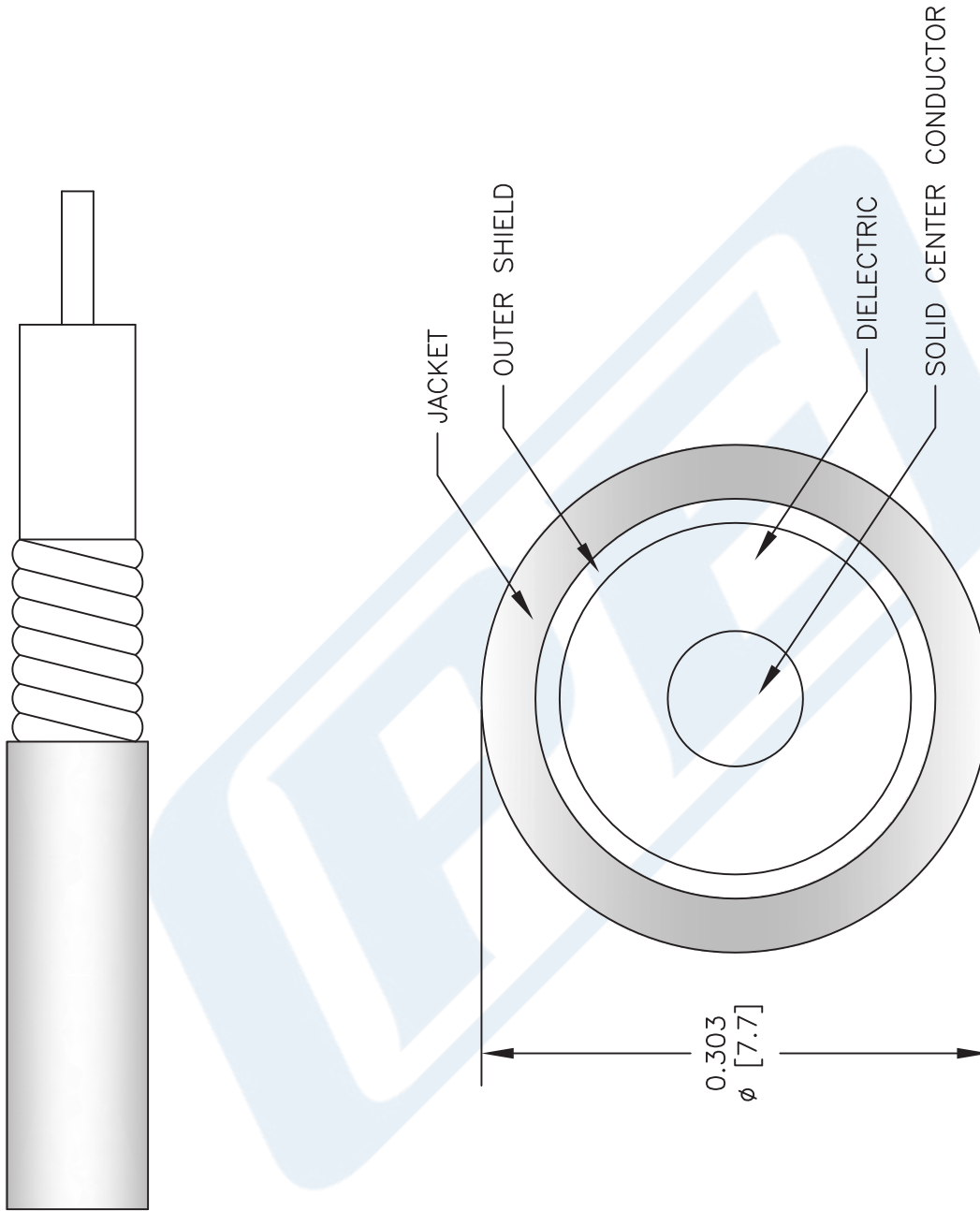
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URL: <https://www.pasternack.com/50-ohm-low-loss-corrugated-1-4-superflexible-helical-coax-pe-1-4sfhc-p.aspx>

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# PE-1/4SFHC CAD Drawing

Low Loss 1/4 Superflexible Helical Corrugated Coax Cable with Black PE Jacket



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].

DWG TITLE  
**PE-1/4SFHC**

FSCM NO. 53919

CAD FILE 092112

SCALE N/A

SIZE A

2233

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