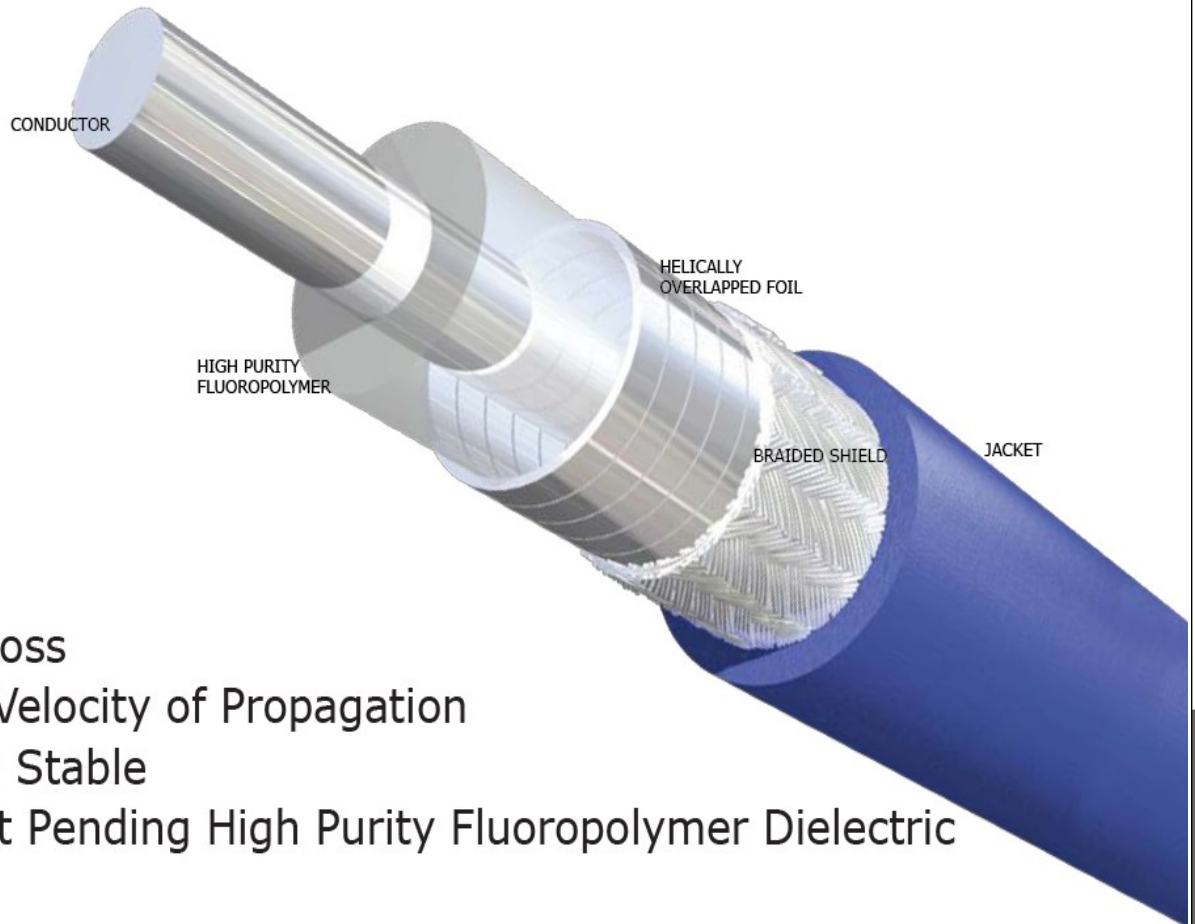


# FEP Flexible Microwave Coaxial Cable

## Solid Core Design



- Low Loss
- 70% Velocity of Propagation
- Phase Stable
- Patent Pending High Purity Fluoropolymer Dielectric

Performance Characteristics			
Temp-Flex P/N	047SC-2901	086SC-2401	141SC-1901
Impedance	50 Ω ± 1 Ω	50 Ω ± 1 Ω	50 Ω ± 1 Ω
Insertion Loss dB/ft			
1 GHZ	0.34	0.20	0.12
10 GHZ	1.18	0.74	0.45
20GHZ	1.77	1.15	0.70
50 GHz	3.13	2.15	1.35
VOP	70%	70%	70%
Capacitance pf/ft	29 pF/ft	29 pF/ft	29 pF/ft
Effective Dielectric Constant	2.1	2.1	2.1

Mechanical Characteristics			
Temp-Flex P/N	047SC-2901	086SC-2401	141SC-1901
OD	0.056" ± 0.003"	0.101" ± 0.005"	0.157" ± 0.005"
	1.42 ± 0.076 mm	2.57 ± 0.127 mm	4.0 ± 0.13 mm
Signal Conductor	0.0113 (29 AWG)	0.0201 (24 AWG)	0.036 (19 AWG)
Insulation	FEP	FEP	FEP
Min. Bend Radius	0.35 inch	0.50 inch	1.0 inch

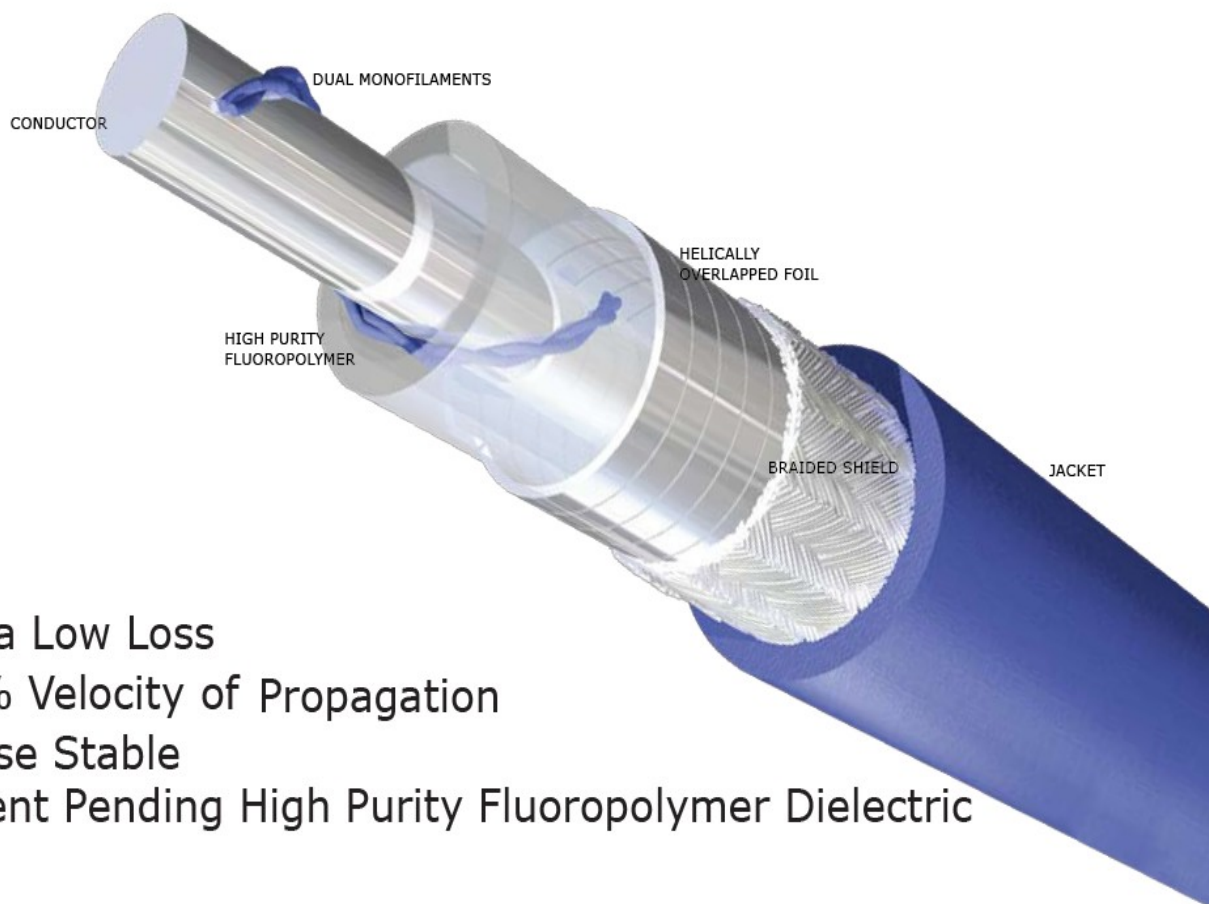


Temp-Flex designs and manufactures specialty insulated wire & cable for the medical, industrial, military & aerospace markets. We can custom design and manufacture your medical wire, coil, twisted pair, high speed coaxial cable, flexible microwave cable, flat ribbon cable, IDC cable, multi-flex cable, matched impedance cable, low inductance power transmission cable and a variety of other wire and cable constructions.

# FEP Flexible Microwave Coaxial Cable

## Dual Monofilament Air Gapped Dielectric

- Patented -



- Ultra Low Loss
- 85% Velocity of Propagation
- Phase Stable
- Patent Pending High Purity Fluoropolymer Dielectric

Performance Characteristics			
Temp-Flex P/N	047-2801	086-2201	141X-1701
Impedance	50 Ω ± 1Ω	50 Ω ± 1Ω	50 Ω ± 1Ω
Insertion Loss dB/ft			
1 GHZ	0.33	0.16	0.10
10 GHZ	1.10	0.62	0.41
20GHZ	1.63	0.96	0.66
50 GHZ	2.85	1.78	1.31
VOP	85%	85%	85%
Capacitance pf/ft	23pF/ft	23.6pF/ft	32.8pF/ft
Effective Dielectric Constant	1.4	1.4	1.4

Mechanical Characteristics			
Temp-Flex P/N	047-2801	086-2201	141X-1701 Under Development
OD	0.056"±0.003"	0.101"±0.005"	0.158"±0.005"
	1.42±0.076 MM	2.57±0.127 MM	4.0±0.13MM
Signal Conductor	0.0126 (0.32MM, 28 AWG)	0.0253 (0.647 MM, 22 AWG)	0.0453 (1.15MM, 17 AWG)
Insulation	FEP	FEP	FEP
Min. Bend Radius	0.35 inch	0.50 inch	1.0 inch



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## Properties of Extruded Insulation Materials

Insulation Materials	FEP	PFA	ETFE	Elasthane™ 550	Elasthane™ 80A
<b>PROPERTY</b>					
<b>Physical Properties</b>					
Specific Gravity	2.15	2.15	1.7	1.16	1.12
Water Absorption (%)	0.01	0.03	0.02	-	-
<b>Thermal Properties</b>					
Temperature Rating (°C) (Continuous Use)	200	260	150	-	-
Melting Point	271	310	271	180	180
<b>Mechanical Properties</b>					
Tensile Strength 73° F (PSI)	3,000	4,000	7,000	8,000	5,800
Ultimate Elongation (%)	300	300	400	490	795
Compress on Strength (kgf/cm <sup>2</sup> )	60	60	109	40	23
Stiffness 73° F (PSI)	95,000	95,000	200,000		
Hardness Durometer	D55	D60	D70	55D	85A
Abrasion Resistance (Instron, 0.005 Radius Blade, 02in/min.)	4.5kg.	4.5kg.	16kg.	-	-
Coefficient of Friction	0.27	0.25	0.23	-	-
<b>Electrical Properties</b>					
Dielectric Constant	2.1	2.1	2.5	5.2	6.7
Dissipation Factor	.0003- .0007	.0001- .0003	.0017- .0070	-	-
Dielectric Strength (V/mil)	600	600	400	385	363
Volume Resistivity (ohms/sq)	>10E+17	>10E+16	>10E+17	-	-
<b>Additional properties</b>					
Flame Rating (UL)	94V-0	94V-0	94V-0	-	-
Weather Resistance	Excellent	Excellent	Excellent	-	-
Chemical Resistance	Excellent	Excellent	Excellent	-	-
Radiation Resistance (Threshold in KGy)	<25	<10	<200	-	-

## Conductor Properties

	Purity % of Composition	Resistivity (Ω /cmf 0°C)		Temp. Coeff. Of Resistance (C - 1 0-100°C)		Tensile Strength (KPSI)		Elongation (Percent)		Melting Point (solidus) °C	Density (g/cm <sup>3</sup> )
		Hard	Annid.	Hard	Annid.	Hard	Annid.	Hard	Annid.		
Constantan	43-45% Ni 55-57% Cu Mn, Fe	315	394	±0.00003	±0.00002	150	80	2	32	1270	8.86
Copper*	99.98% 25% Ag Balance=35N LT	9.44	9.24	0.0041	0.0043	76	32	1.5	46	1083	8.93
35N LT® DFT®-25%Ag**	28% Ag Balance=35N LT	38.4	38.0	0.0031	0.0031	220	150	1.5	20	962	8.95
35N LT-DFT-28%Ag**	28% Ag Balance=35N LT	34.2	33.8	0.0031	0.0031	215	145	1.5	20	962	9.01
35N LT-DFT-33%Ag**	33% Ag Balance=35N LT	30.3	29.9	0.0033	0.0033	200	135	1.5	20	962	9.12
35N LT-DFT-41%Ag**	41% Ag Balance+35N LT	23.9	23.5	0.0034	0.0034	180	125	1.5	20	962	9.29
Gold	99.99% 35% Ni 35% Co 20% Cr 10% Mo	12.8	12.6	0.0038	0.0039	45	20	1.5	36	1053	19.3
MP35N*** 35N LT****	80% Ni 20% Cr	595	620	0.0002	0.0002	362	150	2.8	45	1440	8.43
Nichrome	80% Ni 20% Cr	630	650	0.0001	0.0001	200	100	2	26	1400	8.40
Platinum	99.999%+	59	57.6	0.00386	0.003926	60	24	2	38	1769	21.45
Platinum / Iridium	90% Pt 10% Ir	154	150	0.0012	0.0013	130	55	2	24	1800	21.53
Platinum / Iridium	80% Pt 20% Ir	193	186	0.0007	0.0008	193	100	2	20	1840	21.61
Tungsten*****	99.98%+	39	33	0.0036	0.0048	320	160	1.5	16	3410	19.3
Stainless Steel #316	16-18.5% Cr 10-14% Ni 2-3% Mo Fe, C, MN Si, P, S	470	446	n/a	n/a	250	75	10	40	1375 - 1400	8

\* Copper is also available with Silver plating, Nickel plating and Gold plating.

\*\*DFT R is a registered trade mark of Fort Wayne Research Products Corp.; for more information on these materials please visit [www.fortwaynemetals.com](http://www.fortwaynemetals.com). Please note that the melting point of DFT R is limited by silver core material.

\*\*\*Registered trade mark of SPS technologies. A typical MP35N R/Silver DFT wire material (MP-DFT-Ag) may have variety of tensile value depending upon the amount of cold work and core percentages of the individual wires.

\*\*\*\*35N LT is an ultra-clean, improved fatigue version of ASTM F562 and is a registered trademark of Fort Wayne Products Corp. MP35N and 35N LT conform to the ASTM F562 chemistry specification.

\*\*\*\*\*Tungsten is also available with Gold plating.