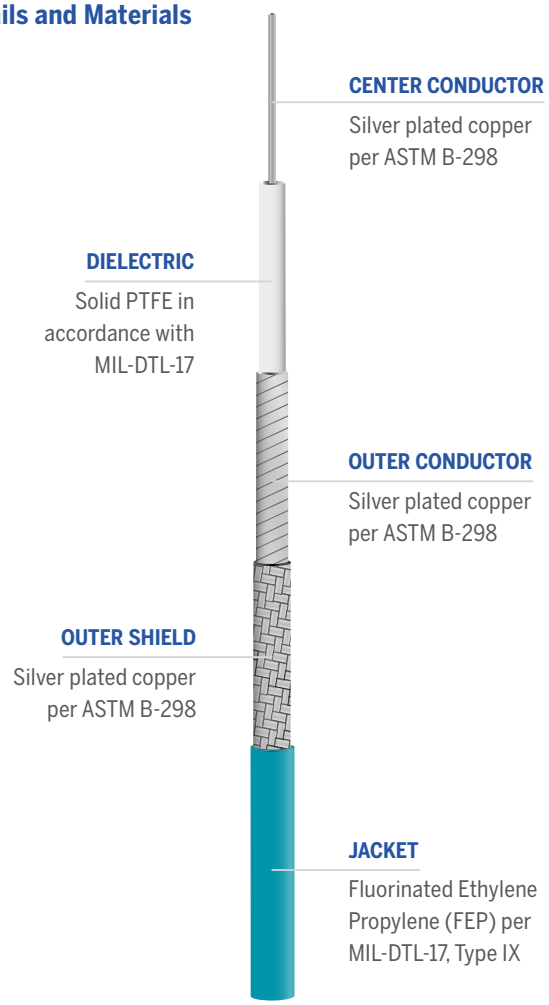
HFE175D

M-FLEX®

M-FLEX® Microwave Coaxial Cables are designed to accept semi-rigid cable type connectors. Unlike other single or double-braided "RG"-type flexible cables, M-FLEX HFE175D is based on MIL-DTL-17 microwave cable construction but deliberately made larger to minimize insertion loss with a precision helically-wrapped, silver-plated, copper-foil inner shield which allows for outstanding flexibility while providing 100% coverage.

Impedance 50 Ohms | **Operating Temperature** -65°C to +125°C | **RoHS** Compliant

Details and Materials



Mechanical/Physical Properties

Jacket Diameter	in	0.175
	mm	4.45
Weight	grams/ft	≤ 16.3
	grams/m	≤ 53.4
Min Static Bend Radius	in	0.500
	mm	12.70
Center Conductor Strands		1

Electrical Properties

Velocity of Propagation	(%)	70
RF Shielding	(dB) at 1 GHz	≥ 100
Capacitance	pF/ft	29.10
	pF/m	95.47
Maximum Frequency	GHz	18
Corona Extinction Voltage	VRMS @ 60Hz	1900
Dielectric Withstanding Voltage	VRMS @ 60Hz	5000
Insertion Loss Stability	% Change[2]	≤ 5
K1	Ft (m)	9.84 (0.323)
K2	Ft (m)	0.86 (0.028)

Maximum Attenuation[1], Power and VSWR

(at 20°C and Sea Level)

Frequency GHz	Attenuation dB/100ft	dB/m	Power	VSWR
0.5	8	0.26	929	≤ 1.25:1
1	11	0.36	645	≤ 1.25:1
5	27	0.89	268	≤ 1.25:1
10	40	1.31	180	≤ 1.25:1
18	58	1.90	127	≤ 1.25:1

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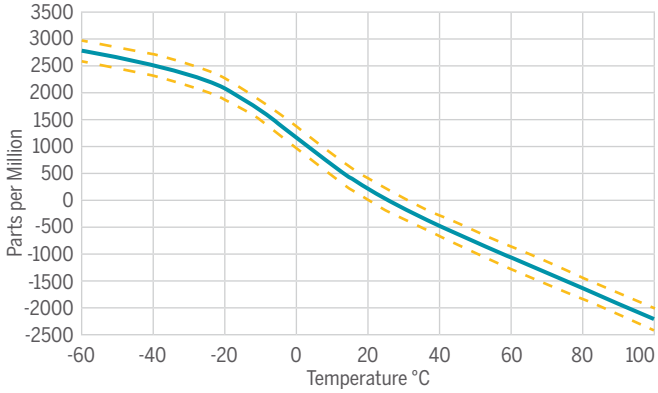
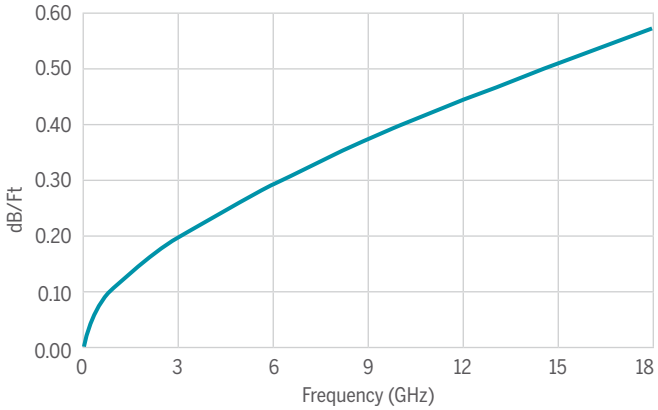
Environmental Properties

Thermal Shock	MIL-STD-202, Method 107, 20 Cycles, -65 to 125 °C (cable and SMA connectors only)
Aging Stability	Not Applicable for MIL-DTL-17, Type IX Jackets
Vibration	MIL-STD-202, Method 204, Test Condition B
High Pressure	Pressure increased ≤ 10 bar/min to 100 +/- 2 bar for 12 hrs
Humidity	MIL-STD-810, Method 507.5, Procedure I and II
Salt Fog	MIL-STD-810, Method 509
Sand and Dust	MIL-STD-810, Method 510, Procedure I
Stress Crack Resistance	MIL-DTL-17, Paragraph 4.8.17
Cold Bend Test	MIL-DTL-17, Paragraph 4.8.19

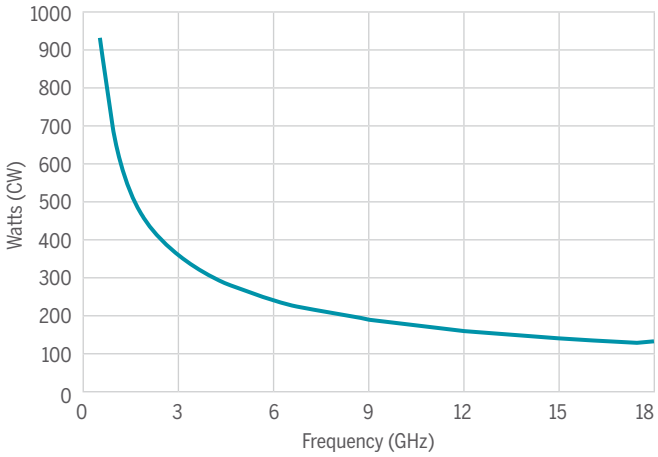
Typical Phase Change vs. Temperature[4]



Maximum Insertion Loss



Maximum Power Handling



Notes

1. Maximum Attenuation (db./100Ft) = K1√F + K2F where F is Frequency in GHz.
2. Insertion Loss change, while vibrated at a frequency of 6 Hz and an amplitude of 1 inch.
3. Snake test. One end of a 3-ft sample is fixed. The other end is moved inward along the axis of the sample forcing the cable into a "U" shape. It then returns to straight configuration for one flex cycle.
4. Cable assemblies of equal length and connectors made from the same cable manufacturing lot shall phase track within 200 PPM of each other.

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