

UTIFLEX PRODUCT SPECIFICATION

Part Description

Item Number

Rev.

HFE100D

104215

D

Construction Layers and Standards

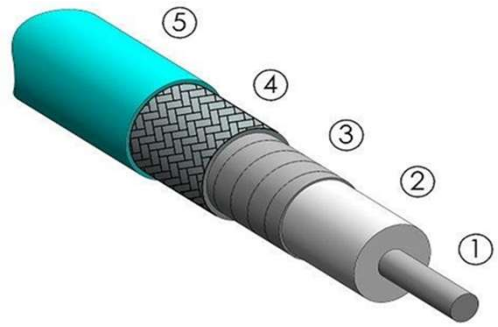
1	Center Conductor	Silver plated copper-clad steel per ASTM B-501
2	Dielectric	Solid PTFE in accordance with MIL-DTL-17
3	Outer Conductor	Silver plated copper per ASTM B-298
4	Outer Shield	Silver plated copper per ASTM B-298
5	Jacket	Fluorinated Ethylene Propylene (FEP) per MIL-DTL-17, Type IX
	Cable Marking	None

Mechanical / Physical Properties

Temperature Range (°C)	-65 / 125
UV Resistance	Excellent
Center Conductor Diameter [inch(mm)]	0.0201 (0.51)
Dielectric Diameter [inch(mm)]	0.065 (1.65)
Outer Conductor Diameter [inch(mm)]	0.0730 (1.85)
Outer Shield Diameter [inch(mm)]	0.083 (2.11)
Jacket Diameter [inch(mm)]	0.100 (2.54) ± 0.004 (0.10)
Jacket Wall Thickness [inch(mm)]	≥ 0.004 (0.102)
Weight [grams/ft (grams/m)]	≤ 5.8 (19.0)
Min Static Bend Radius [inch (mm)]	0.250 (6.35)
Dynamic Flex Life ³ (Cycles)	200,000
Center Conductor Strands	1

Electrical Properties

Impedance (Ohms)	50
Velocity of Propagation (%)	70.5
RF Shielding ((dB) at 1 GHz)	≥ 100
Capacitance [pF/Ft (pF/m)]	28.89 (94.79)
Maximum Frequency (GHz)	40
Corona Extinction Voltage (VRMS @ 60Hz)	2000
Dielectric Withstanding Voltage (VRMS @ 60Hz)	5000
Insertion Loss Stability (% Change) ²	≤ 15
K1 for Ft(m) : K2 for Ft(m)	20.56 (0.674) : 0.88 (0.029)



Environmental Properties

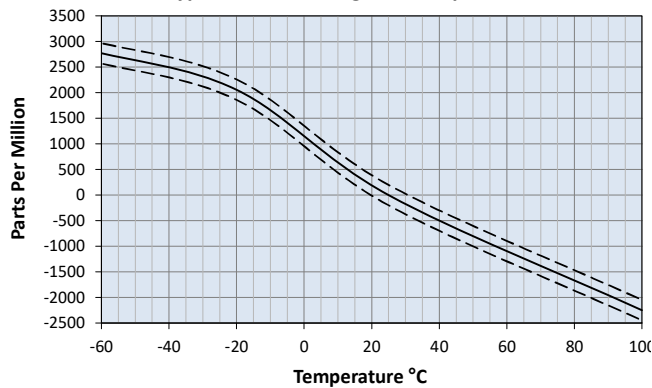
Where applicable after each test, the assembly shall show no damage, insertion loss and VSWR shall remain within the specified limits, and connector interface dimensions remain within the specified limits of MIL-PRF-39012.

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
Outgassing	Less than 1% TML and 0.1% CVCM
Radiation Resistance	30 Mrads
Flammability	14 CFR Part 25, Appendix F, Part I (b) (7), 60° flammability test

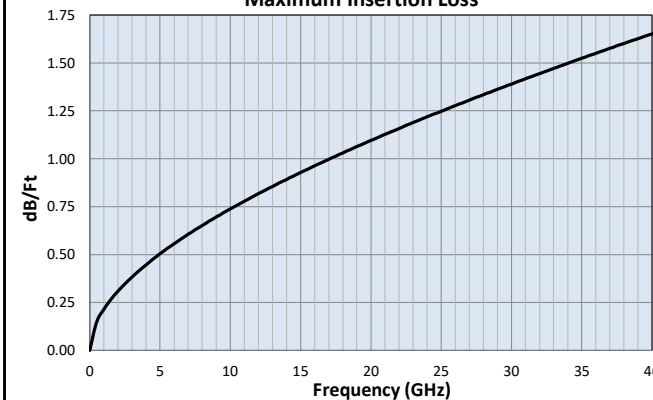
Maximum Attenuation¹, Power, and VSWR¹ at 20°C and Sea Level

Frequency (GHz)	Attenuation		Power Watts (CW)	VSWR
	[(dB/100ft)	(dB./m)]		
0.5	15	(0.49)	159	≤ 1.25:1
1	22	(0.72)	111	≤ 1.25:1
5	51	(1.67)	48	≤ 1.25:1
10	74	(2.43)	33	≤ 1.25:1
18	104	(3.41)	24	≤ 1.25:1
26.5	130	(4.27)	19	≤ 1.25:1
40	166	(5.45)	15	≤ 1.25:1
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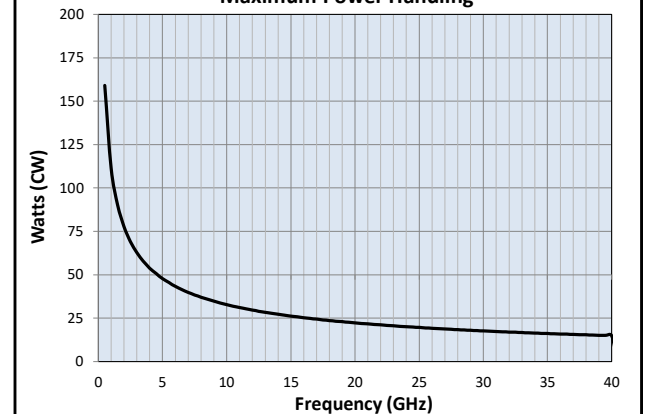
Typical Phase Change vs. Temperature⁴



Maximum Insertion Loss



Maximum Power Handling



Notes:

- Maximum Attenuation (dB./100Ft) = K1F + K2F where F is Frequency in GHz
- Insertion Loss change, while vibrated at a frequency of 6 Hz and an amplitude of 1 inch
- 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.
- Cable assemblies of equal length and connectors made from the same cable manufacturing lot shall phase track within 200 PPM of each other

Rev.	ECO #	DATE	INIT.	APPROVALS		
D	2050895	3/24/2020	DMD	DWN	DMD	3/23/2020
				ENG	DMD	3/24/2020
				QA	RAY	3/24/2020

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