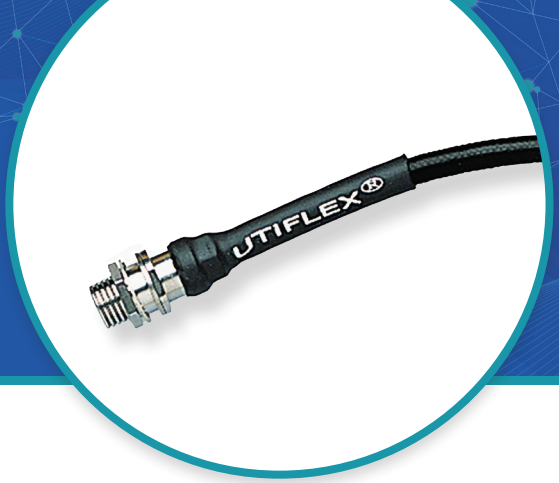
MCJ088D

UTiFLEX®



The MCJ088D coaxial solutions are optimized for spaceflight applications. They provide the lightest weight, lowest insertion loss, and best radiation resistance in a flexible cable construction. The cables utilize our ARACON® for the outer shield, an ultra-low-density PTFE for the dielectric, and a ETFE jacket.

Impedance 50 Ohms | **Operating Temperature** -65°C to +165°C | **RoHS** Compliant

Details and Materials

CENTER CONDUCTOR
Silver plated copper-clad steel per ASTM B-501

DIELECTRIC
Ultra Low density PTFE in accordance with MIL-DTL-17

OUTER CONDUCTOR
Silver plated copper per ASTM B-298

OUTER SHIELD
Silver plated poly-para-phenylene terephthalamide

JACKET
ETFE-Fluoropolymer, black in color, in accordance with ASTM D-3159

Mechanical/Physical Properties

Jacket Diameter	in	0.088
	mm	2.24
Weight	grams/ft	≤ 3.6
	grams/m	≤ 11.8
Min Static Bend Radius	in	0.250
	mm	6.35
Dynamic Flex Life - Snake[3]	cycles	25,000
Center Conductor Strands		1

Electrical Properties

Velocity of Propagation	(%)	80
RF Shielding	(dB) at 1 GHz	≥ 100
Capacitance	pF/ft	25.46
	pF/m	83.53
Maximum Frequency	GHz	65
Corona Extinction Voltage	VRMS @ 60Hz	1000
Dielectric Withstanding Voltage	VRMS @ 60Hz	5000
Insertion Loss Stability	% Change[2]	≤ 5
K1	Ft (m)	20.30 (0.666)
K2	Ft (m)	0.11 (0.004)

Maximum Attenuation[1], Power and VSWR

(at 20°C and Sea Level)

Frequency GHz	Attenuation dB/100ft	dB/m	Power	VSWR
0.5	14	0.47	290	≤ 1.20:1
1	21	0.69	205	≤ 1.20:1
5	46	1.51	91	≤ 1.20:1
10	66	2.17	64	≤ 1.20:1
18	89	2.92	48	≤ 1.20:1
26.5	108	3.54	39	≤ 1.25:1
40	133	4.36	32	≤ 1.25:1

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MICRO·COAX
AN AMPHENOL COMPANY

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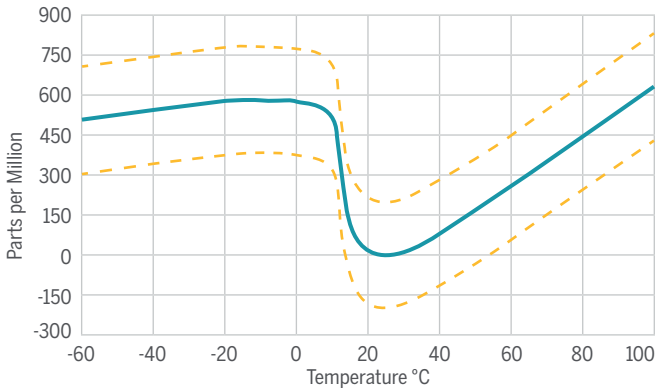
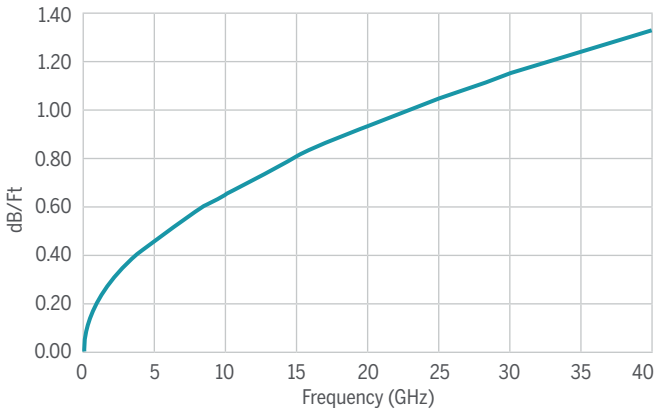
Environmental Properties

Thermal Shock	MIL-STD-202, Method 107, 20 Cycles, -65 to 165 °C (cable and SMA connectors only)
Aging Stability	MIL-DTL-17, Paragraph 4.8.16 +165 deg C for 168 hours (cable and connectors only)
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	100 Mrads

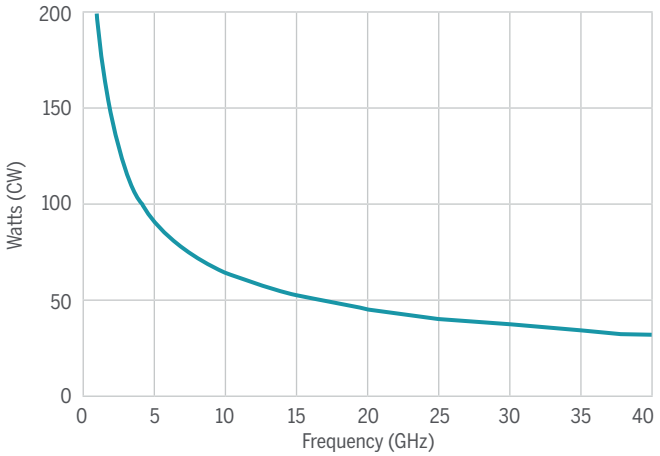
Typical Phase Change vs. Temperature[4]



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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