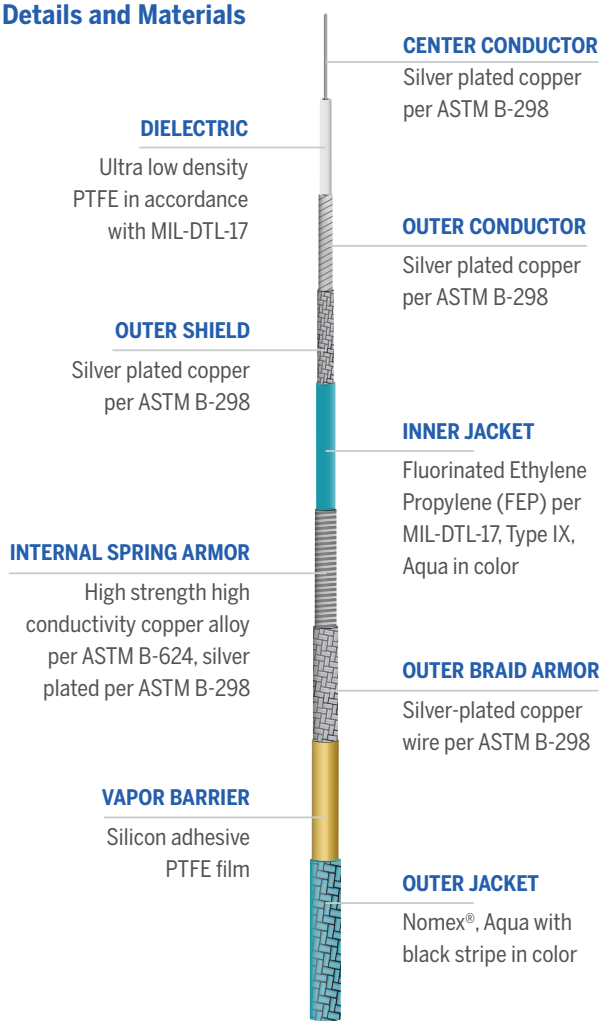
MKR300C

UTiFLEX®

MKR300C builds on Micro-Coax's trusted UTiFLEX® microwave cable with advanced ruggedization for superior flexibility and abrasion resistance. This makes it the perfect choice for demanding production test labs and environments requiring exceptional mechanical strength and long-term reliability. These cables are designed to endure rigorous use while maintaining consistent, high-frequency performance, offering excellent crush, torque, and kink resistance to meet the toughest testing requirements.

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

Details and Materials



CENTER CONDUCTOR
Silver plated copper per ASTM B-298

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

OUTER CONDUCTOR
Silver plated copper per ASTM B-298

OUTER SHIELD
Silver plated copper per ASTM B-298

INNER JACKET
Fluorinated Ethylene Propylene (FEP) per MIL-DTL-17, Type IX, Aqua in color

INTERNAL SPRING ARMOR
High strength high conductivity copper alloy per ASTM B-624, silver plated per ASTM B-298

OUTER BRAID ARMOR
Silver-plated copper wire per ASTM B-298

VAPOR BARRIER
Silicon adhesive PTFE film

OUTER JACKET
Nomex®, Aqua with black stripe in color

Mechanical/Physical Properties

Jacket Diameter	in	0.201
	mm	5.11
Weight	grams/ft	≤ 51.0
	grams/m	≤ 167.3
Min Static Bend Radius	in	1.250
	mm	31.75
Flex Life - Snake[3]	cycles	150,000
Center Conductor Strands		7

Electrical Properties

Velocity of Propagation	(%)	81.0
RF Shielding	(dB) at 1 GHz	≥ 100
Capacitance	pF/ft	26.90
	pF/m	88.24
Cutoff Frequency	GHz	30.42
Corona Extinction Voltage	VRMS @ 60Hz	3500
Dielectric Withstanding Voltage	VRMS @ 60Hz	5000
Insertion Loss Stability	% Change[2]	≤ 5
K1	Ft (m)	8.02 (0.263)
K2	Ft (m)	0.11 (0.004)

Maximum Attenuation[1], Power, and VSWR[6,7]

(at 20°C and Sea Level)

Frequency GHz	Attenuation dB/100ft	dB/m	Power Watts (CW)	VSWR
0.5	6.0	0.19	1357	1.35
1	8.0	0.27	957	1.35
5	19.0	0.61	422	1.35
10	27.0	0.87	296	1.35
18	36.0	1.18	218	1.35
26.5	44.0	1.45	178	1.45

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MICRO·COAX
AN AMPHENOL COMPANY

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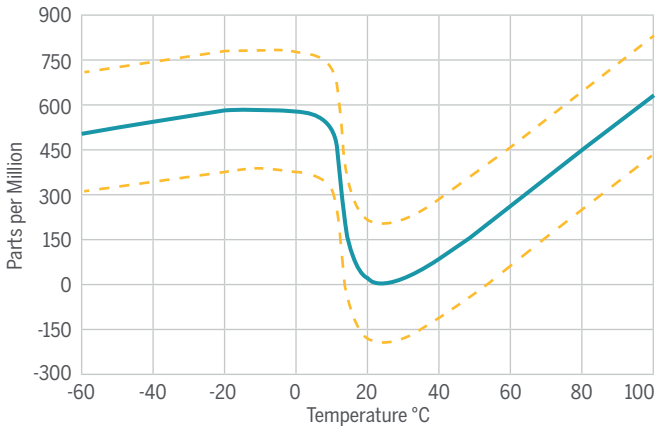
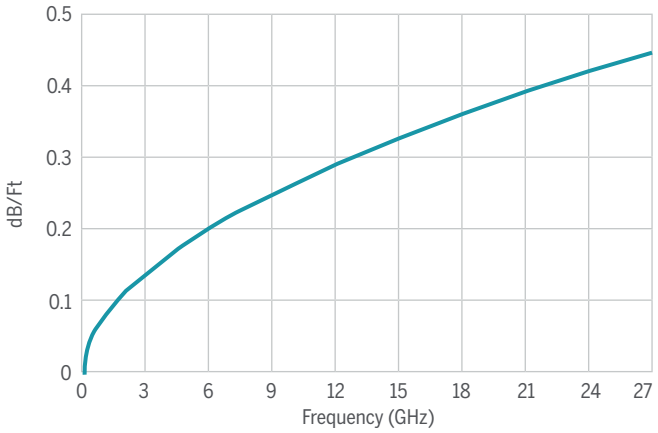
Environmental Properties

Thermal Shock	MIL-STD-202, Method 107, 20 Cycles, -65 to 125 °C (cable and SMA connectors only)
Aging Stability	MIL-DTL-17, Paragraph 4.8.16, +125 °C for 168 hours (cable and SMA 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.
Low Pressure	SAE-AS-13441, Method 1004.1
Humidity	MIL-STD-810, Method 108, Procedure 1 and 2
Salt Fog	MIL-STD-810, Method 509, Procedure 1
Sand and Dust	MIL-STD-810, Method 510, Procedure 1
Stress Crack Resistance	MIL-DTL-17, Paragraph 4.8.17
Cold Bend Test	MIL-DTL-17, Paragraph 4.8.19

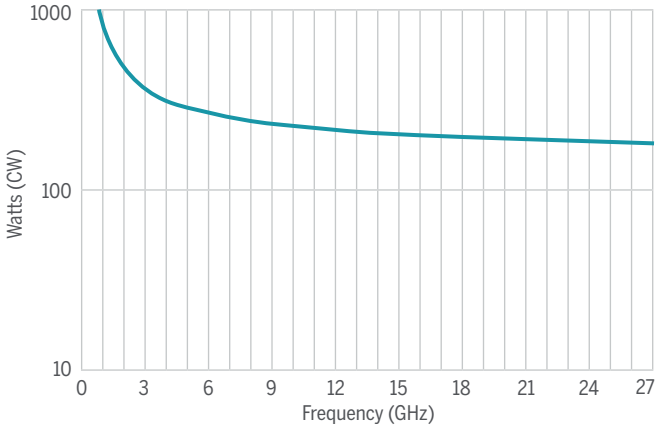
Typical Phase Change vs. Temperature[4]



Maximum Insertion Loss



Maximum Power Handling



Notes

1. Attenuation (db/100Ft) = K1.√F + K2.F 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. Connect both ends of cable to flex (snake) machine. The movement of the flex machine arm from 36 to 18 inches, stopping, and then returning to 36 inches shall be 1 flex cycle.
4. Not used.
5. Cable assemblies of equal length and connectors made from the same cable manufacturing lot shall phase track within 200 PPM of each other.
6. Test Plots required with Shipment (Attenuation and VSWR).
7. VSWR testing to be performed on 20-foot minimum lengths with gating used to remove connector contributions. Minimum frequency points shall be 1601.

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