TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

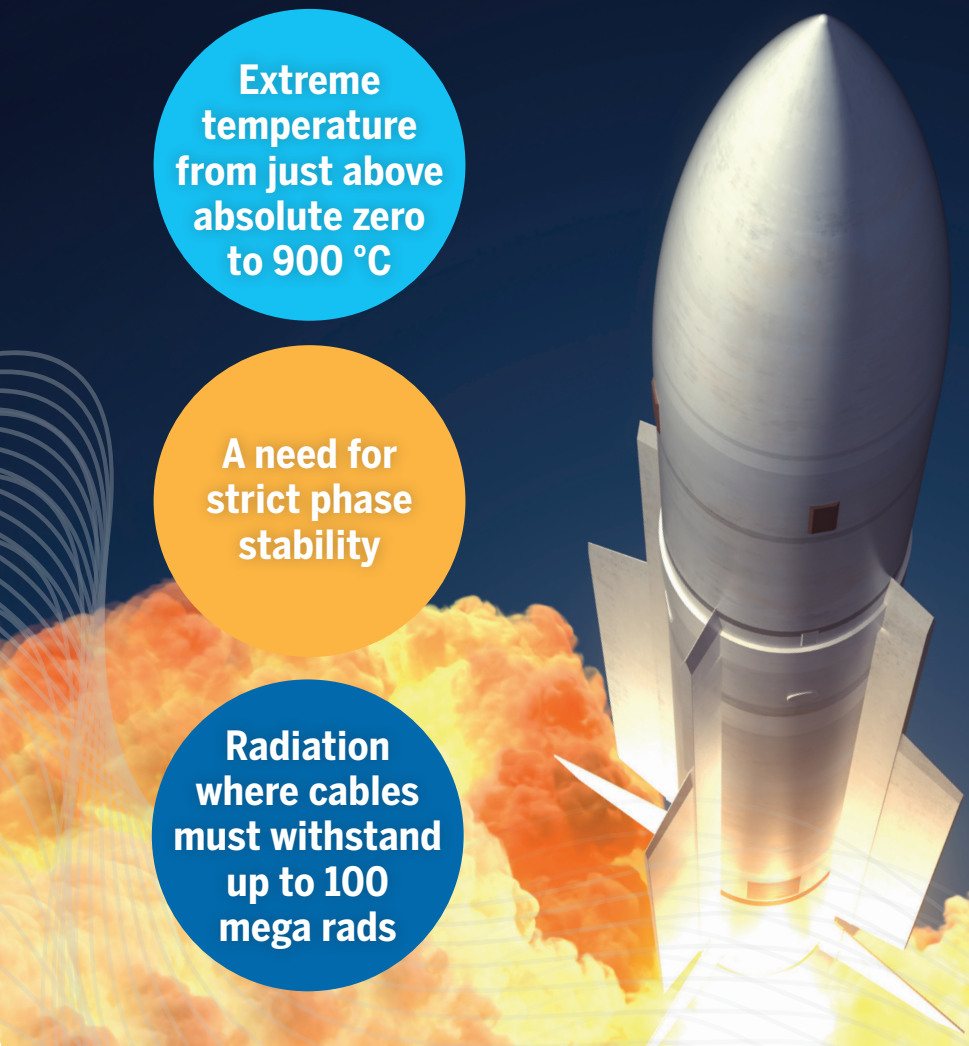
SiO2

SiO2 is a silicon dioxide dielectric cable designed for specific applications when low-density high-velocity PTFE isn't ideal. These are extreme environmental applications with requirements of:

Extreme temperature from just above absolute zero to 900 °C

A need for strict phase stability

Radiation where cables must withstand up to 100 mega rads



IDEAL FOR:

- **Hypersonic missiles**
- **Deep space**
- **Radar systems**
- **Rockets**
- **Particle colliders**
- **Quantum computing**
- **Decoys**

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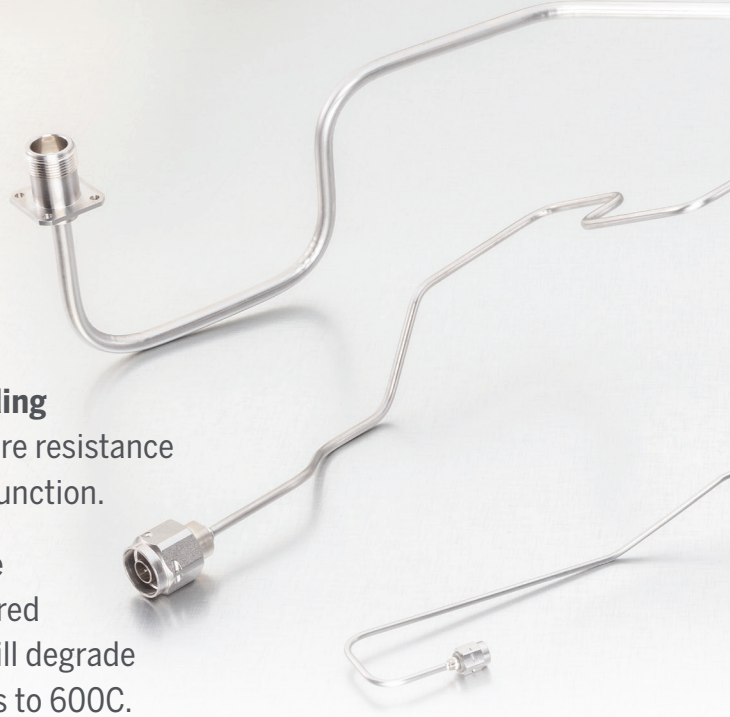
The exceptional performance of SiO2 in extreme environments stems from it's unique construction.

- **304L SS jacket** is a material designed to resist radiation and perform in extreme temperatures.

- Connectors use a unique termination style: **laser welding** instead of soldering. Laser welding increases temperature resistance and provides a hermetic seal at the connector to cable junction.

- SiO2 connectors utilize **glass to metal seals** to create a hermetic seal at the interface. A hermetic seal is required as the SiO2 dielectric is a desiccant and performance will degrade with moisture ingress. Cables rated to 900C, connectors to 600C.



Impedance 50 Ohms

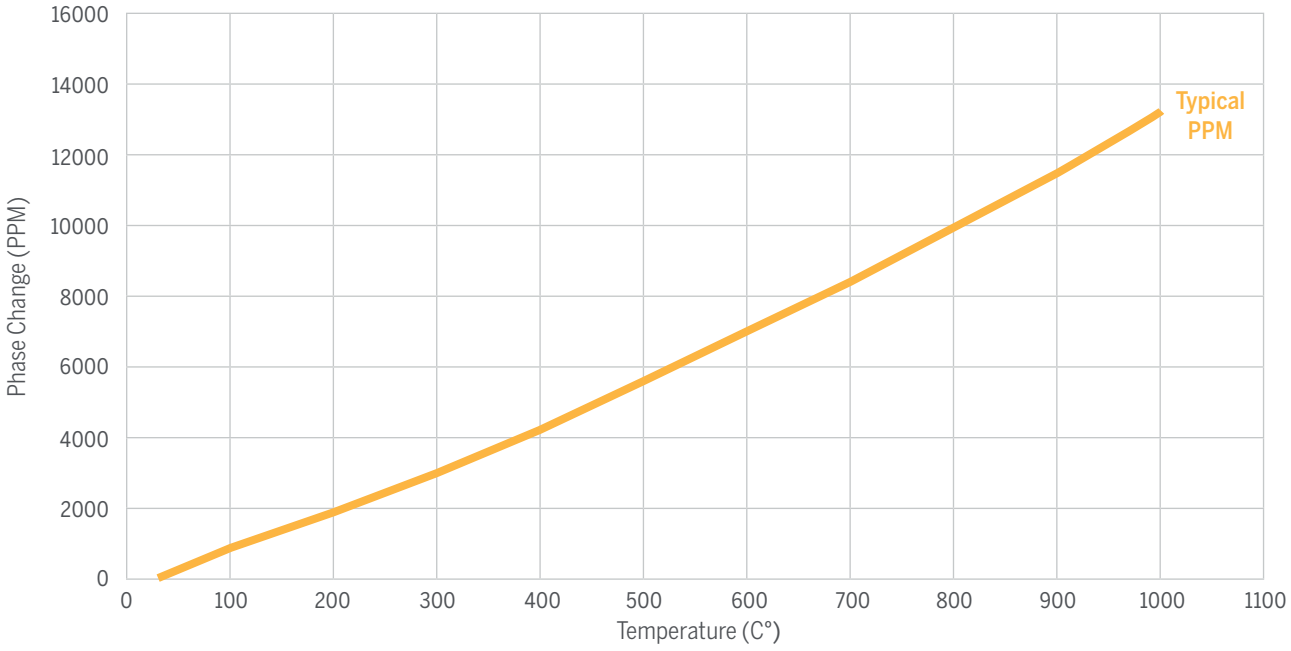
Op Temp -454 to +1832°F -270 to +900°C

Specifications

	Units	.090	.125	.141	.270
Maximum Operating Frequency	GHz	40	36	36	18
Velocity of Propagation	%	80.00%	80.00%	80.00%	80.00%
Dielectric Constant	NA	1.56	1.56	1.56	1.56
Capacitance	pF/ft (pF/m)	26.02 (85.37)	25.39 (83.3)	25.59 (83.96)	26.20 (85.96)
Shielding Effectiveness	dB	-110	-110	-110	-110
Diameter	in (mm)	0.090 (2.286)	0.125 (3.175)	0.141 (3.581)	0.270 (6.858)

All stated values are to be taken as nominal

Phase Change VS Temperature (SiO2 0.090")



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