



With the right connections,
anything is possible.

Thermal VAC Test Cables to 50 GHz

Thermal-Vacuum Cables For Altitude & Thermal Testing

- Low Outgassing
- Phase Stable
- Thermal Stability -100 to +150 C°
- Vented Connectors
- Ideal for High Bay Testing
- Rugged Construction

MegaPhase Thermal VAC microwave test cables are manufactured specifically for customers testing space and airborne systems and components. This phase stable cable is ideal for high bay testing of RF payloads, and applications in the severe environment of thermal vacuum chambers, altitude chambers, thermal shock, or any other application requiring thermal stability.

Electrical Data

Maximum Frequency:

50 GHz

Impedance:

50 Ω nominal

Propagation Velocity:

69% nominal

Time Delay:

1.47 ns/ft (4.82 ns/m)

Shielding Effectiveness:

-110 dB minimum (cable only)

Dielectric Withstanding Voltage:

10 kV at 60 Hz

Capacitance:

29.0 pF/ft (95.1 pF/m)

Mechanical Data

Finished Outer Diameter:

0.285 in (0.724 cm)

Static Bend Radius:

1.5 in (3.81 cm)

Weight with Standard Jacket/Armor:

0.05 lbs/ft (0.067 kg/m)

Crush Resistance:

250 lbs/linear in (44.6 kg/linear cm)

Operating Temp. Range:

-67 to 392° F (-55 to 200° C)

Cable Construction

Inner Conductor: Solid Ag-plated Cu

Dielectric: PTFE

Outer Conductor: GrooveTube® Cu

Standard Finish: Viton

(a wide variety of other protective finishes and armors available)

Available Connectors

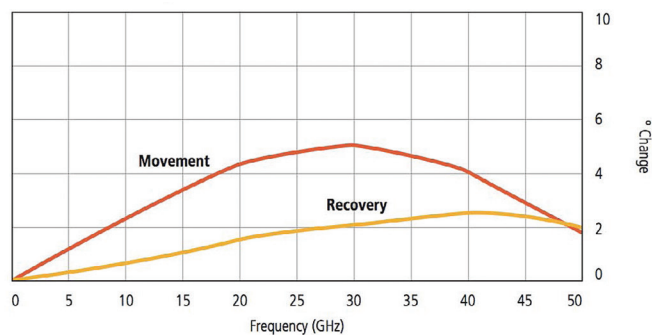
1.85mm, 2.4mm, 2.92mm, 3.5mm,
7mm, 7-16 DIN, BNC, SMA, TNC,
Type N, ZMA, ZN

(maximum frequency dependent on cable;
other connectors available)

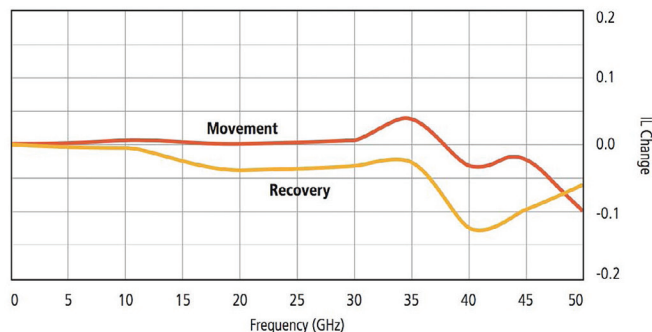


Thermal VAC Test Cables to 50 GHz (continued)

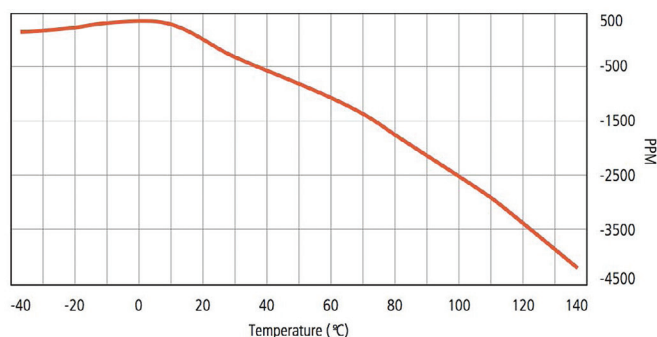
Phase Change vs. Flexure



Insertion Loss vs. Flexure



Phase Change vs. Temperature



Specifications

Frequency		Part No.	Attenuation		Conn. Loss dB	VSWR
GHz	Band		dB/ft	dB/m		
0.3	UHF	TV4	0.062	0.203	0.006	1.10
0.5			0.082	0.268	0.009	
0.8			0.106	0.348	0.012	
1.0	L		0.120	0.394	0.014	1.15
2.0	S		0.178	0.585	0.024	
2.4			0.199	0.652	0.027	
3.0			0.227	0.744	0.032	
4.0	C		0.270	0.885	0.040	1.20
6.0		TV8	0.347	1.138	0.055	
8.0	0.417		1.367	0.070	1.25	
10.0	X	TV18	0.482	1.580		0.084
12.4	Ku		0.555	1.822		0.101
15.0			0.631	2.070		0.118
18.0		0.715	2.345	0.139		
20.0	K	TV26	0.769	2.522	0.152	1.30
22.0			0.821	2.695	0.165	
24.0			0.873	2.865	0.178	
26.5			0.937	3.073	0.194	
28.0	Ka	TV34	0.974	3.196	0.204	1.35
30.0			1.024	3.358	0.217	
32.0			1.072	3.518	0.230	
34.0			1.121	3.676	0.243	1.40
36.0		TV40	1.168	3.833	0.256	
40.0			1.262	4.141	0.281	1.45
45.0	Q	TV50	1.377	4.158	0.313	
50.0	V		1.490	4.888	0.344	1.50

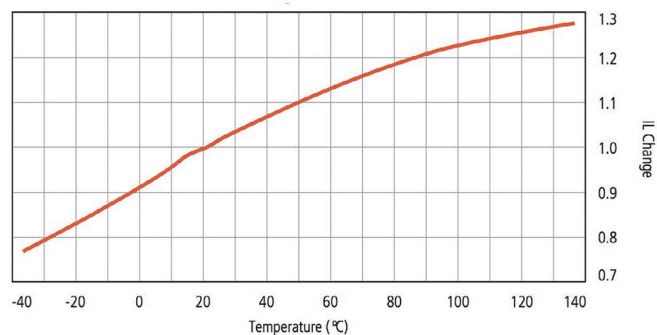
Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss)
 Attenuation at any frequency = $(0.10506 \times \sqrt{\text{freq GHz}}) + (0.01494 \times \text{freq GHz})$



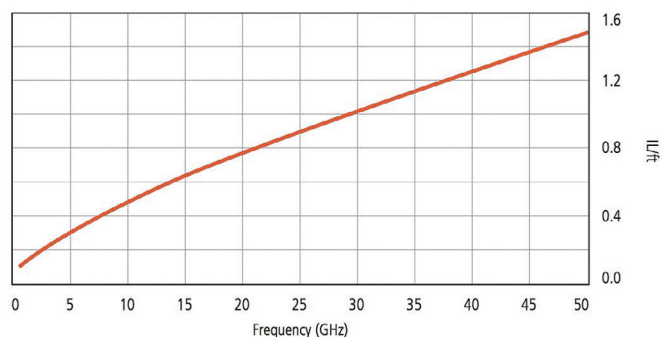
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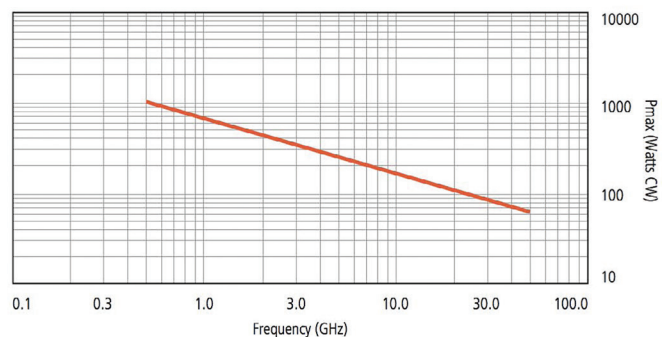
Insertion Loss vs. Temperature



Insertion Loss



Cable CW Power Handling



Note: Data at ambient temperature and sea level. Power handling of a cable assembly is also connector dependent and includes variables such as altitude, temperature and system VSWR. See website for connector power handling standards, including altitude, temperature and VSWR derating.