

Altitude T-Vac™



Thermal-Vacuum Test Cables for Altitude and Severe Environments

MegaPhase high density dielectric T-Vac series cable assemblies are manufactured using our industry renowned GrooveTube® technology. These cables are aimed at applications with vacuum chambers, climatic chambers, thermal shock chambers and vibration/shock equipment. These low outgassing cables employ a Viton outer jacket and offer significant benefits including super flexibility, high impact crush resistance, and an extensive temperature operating range. MegaPhase offers a wide range of connectors which can be vented to ensure fast pressure adaptation in environments where outgassing is a concern.

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)

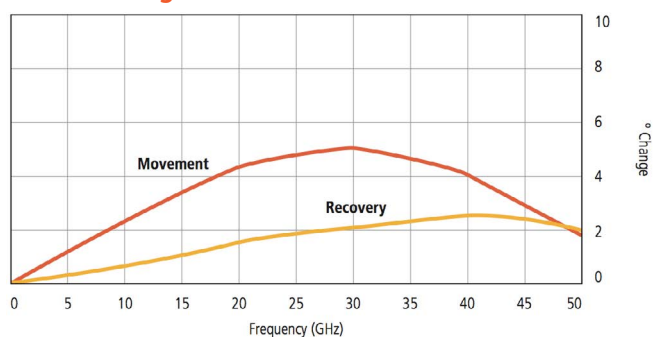
Available Connectors

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

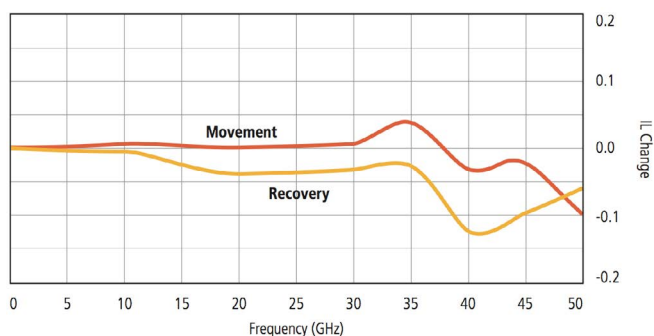
(maximum frequency dependent on cable; other connectors available)

Altitude T-Vac™ (cont'd)

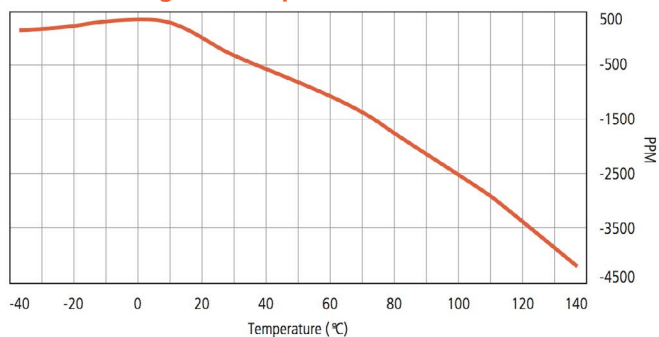
Phase Change vs. Flexure



Insertion Loss vs. Flexure



Phase Change vs. Temperature



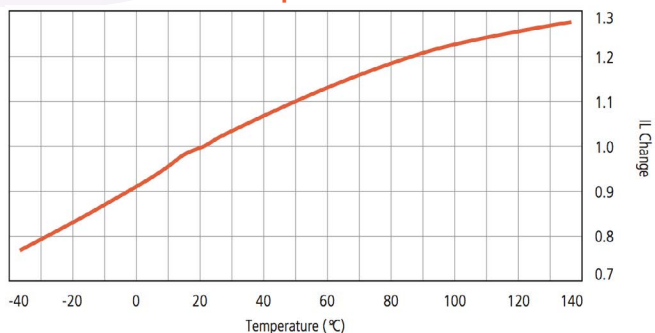
Specifications

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	C		0.227	0.744	0.032	1.20
4.0			0.270	0.885	0.040	
6.0			0.347	1.138	0.055	
8.0	X	TV8	0.417	1.367	0.070	1.25
10.0			0.482	1.580	0.084	
12.4	Ku	TV18	0.555	1.822	0.101	1.30
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	1.35
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	1.40
30.0			1.024	3.358	0.217	
32.0			1.072	3.518	0.230	
34.0			1.121	3.676	0.243	
36.0			1.168	3.833	0.256	
40.0	TV40	1.262	4.141	0.281	1.45	
45.0	Q	1.377	4.158	0.313		
50.0	V	TV50	1.490	4.888	0.344	1.50

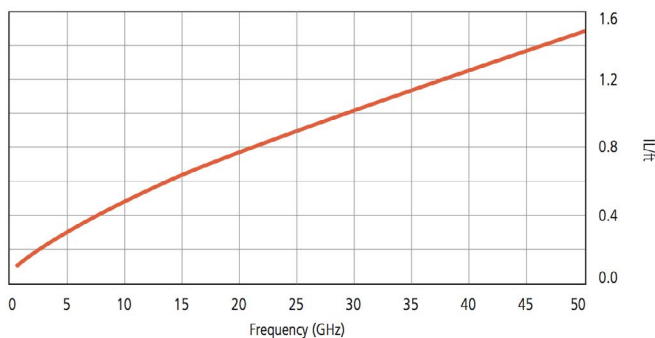
Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss) Attenuation at any frequency = $(0.10506 \times \sqrt{\text{freq GHz}}) + (0.01494 \times \text{freq GHz})$

Altitude T-Vac™ (cont'd)

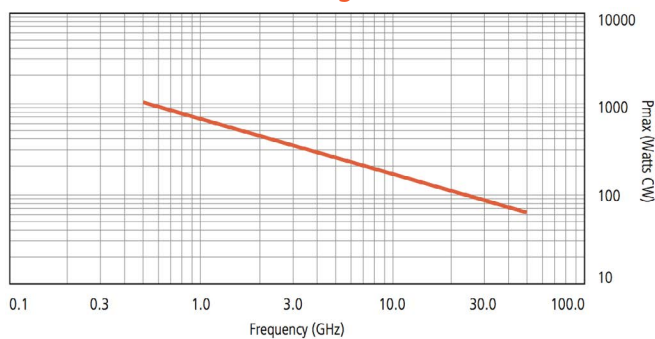
Insertion Loss vs. Temperature



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.