

TVAC

- Thermal Vacuum Testing Cable Assemblies

Typical Applications

- Thermal vacuum chambers connection and testing for RF components
- Vacuum chambers connection and testing for satellites
- Connection for vacuum chambers and testing equipments

Utilizing low-outgassing materials conforming with NASA ASTM E-595, Maxwellon TVAC cable assemblies are dedicated to thermal vacuum testing applications.

Unique Venting Hole + Complex Impedance Structure design provides double protection to your system.

The excellent phase and amplitude stability provide you better accuracy in testing.

An extreme wide operation temperature range from (-55°C to +165°C) confers it capacity to endure harsh environment simulations.

Advantages

- Conform with NASA standard ASTM E-595 on low-outgassing
- Excellent phase and amplitude stability
- Extremely low loss
- High Power Handling
- Vented connectors
- Wide temperature range





TVAC- Cable Specifications



	Description	Materials
1	Center conductor	Silver Plated Copper
2	Dielectric	LD PTFE
3	Outer conductor	Silver Plated Copper Foil
4	InnerTape	LD PTFE
5	Outer shield	Silver Plated Copper
6	Jacket	Black FEP

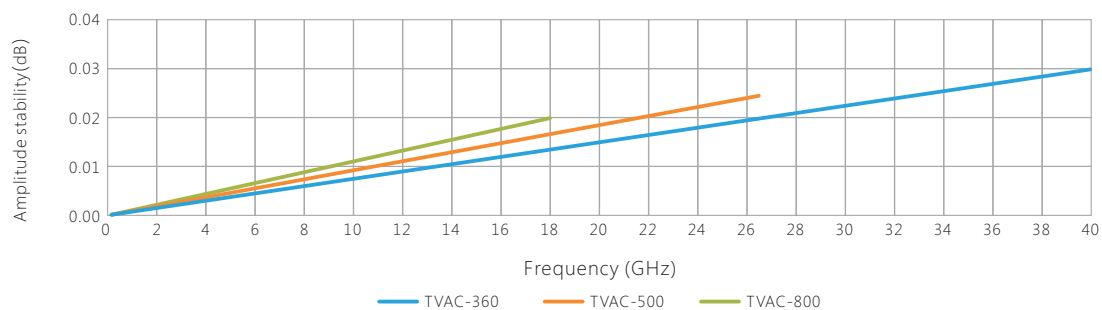
	TVAC-360			TVAC-500			TVAC-800		
Physical & Mechanical Specifications									
Dimensions	mm	Inch		mm	Inch		mm	Inch	
Center Conductor	1.02	0.040		1.45	0.057		2.30	0.091	
Dielectric	2.80	0.110		4.00	0.157		6.25	0.246	
Outer Conductor	3.00	0.118		4.20	0.165		6.57	0.259	
Interlayer	3.24	0.128		4.40	0.173		6.73	0.265	
Outer Shield	3.50	0.138		4.80	0.189		7.24	0.285	
Jacket	3.80	0.150		5.30	0.209		7.80	0.307	
Bend Radius: installation	19	0.748		27	1.043		39	1.535	
Bend Radius: repeated	38	1.50		53	2.09		80	3.15	
Weight	32 g/m	0.022	lbs/ft	63 g/m	0.042	lbs/ft	131 g/m	0.088	lbs/ft
Temperature Range	T:-55°C/165°C (-67°F/329°F)								
Electrical Specifications									
Impedance	50 Ohms			50 Ohms			50 Ohms		
Velocity of Propagation	82%			82%			82%		
Dielectric Constant	1.49			1.49			1.49		
Shielding Effectiveness	> 90 dB			> 90 dB			> 90 dB		
Time Delay	4.06 nS/m	1.24 nS/Ft		4.06 nS/m	1.24 nS/Ft		4.06 nS/m	1.24 nS/Ft	
Capacitance	81.4 pF/m	24.8 pF/Ft		81.4 pF/m	24.8 pF/Ft		81.4 pF/m	24.8 pF/Ft	
Inductance	0.19 uH/m	0.057 uH/Ft		0.18 uH/m	0.055 uH/Ft		0.19 uH/m	0.057 uH/Ft	
Operating Frequency	40 GHz			26.5 GHz			18 GHz		
Voltage Withstand	900 DC			1500 DC			3600 DC		
Peak Power	2.0 kW			5.6 kW			32.4 kW		
Attenuation & Power Handling	Attenuation (+25°C Ambient) & Power Handling (+40°C Ambient; Sea Level; VSWR 1:1)								
Frequency (MHz)	dB/100 m	dB/100 Ft	kW	dB/100 m	dB/100 Ft	kW	dB/100 m	dB/100 Ft	kW
300	17.3	5.3	0.940	12.5	3.8	1.608	8.0	2.4	3.341
500	22.4	6.8	0.726	16.2	4.9	1.243	10.4	3.2	2.579
900	30.2	9.2	0.539	21.8	6.6	0.923	14.0	4.3	1.912
1000	31.9	9.7	0.511	23.0	7.0	0.875	14.8	4.5	1.812
1500	39.2	12.0	0.415	28.2	8.6	0.712	18.2	5.5	1.472
2000	45.5	13.9	0.359	32.7	10.0	0.615	21.1	6.4	1.269
3000	56.0	17.1	0.291	40.2	12.3	0.500	26.0	7.9	1.029
4000	64.9	19.8	0.251	46.6	14.2	0.431	30.2	9.2	0.886
5000	72.9	22.2	0.224	52.2	15.9	0.385	33.9	10.3	0.788
6000	80.1	24.4	0.203	57.4	17.5	0.350	37.3	11.4	0.716
8000	93.1	28.4	0.175	66.6	20.3	0.302	43.4	13.2	0.615
10000	104.7	31.9	0.156	74.8	22.8	0.268	48.9	14.9	0.547
12000	115.3	35.1	0.141	82.3	25.1	0.244	53.9	16.4	0.496
12400	117.3	35.8	0.139	83.8	25.5	0.240	54.9	16.7	0.487
13500	122.7	37.4	0.133	87.6	26.7	0.229	57.5	17.5	0.465
15000	129.8	39.6	0.126	92.6	28.2	0.217	60.8	18.5	0.440
18000	143.0	43.6	0.114	101.9	31.1	0.197	67.1	20.5	0.398
24000	166.9	50.9	0.098	118.7	36.2	0.169			
26500	176.1	53.7	0.093	125.2	38.2	0.160			
40000	220.5	67.2	0.074						
Attenuation at Frequency	dB/100 m=K1×sqrt(FMHz)+K2×FMHz								
K1	0.9915499			0.7156867			0.4563799		
K2	0.0005549			0.0003280			0.0003280		



TVAC - Test Data

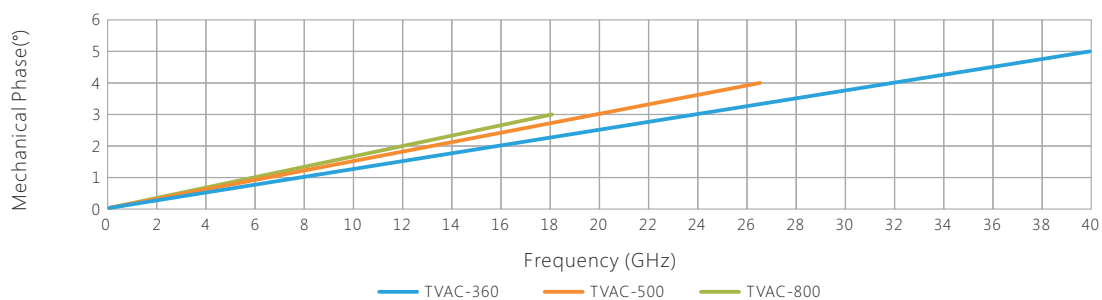
Typical Value Of Mechanical Amplitude Stability

Rotate for one cycle along the minimum repeated bending diameter

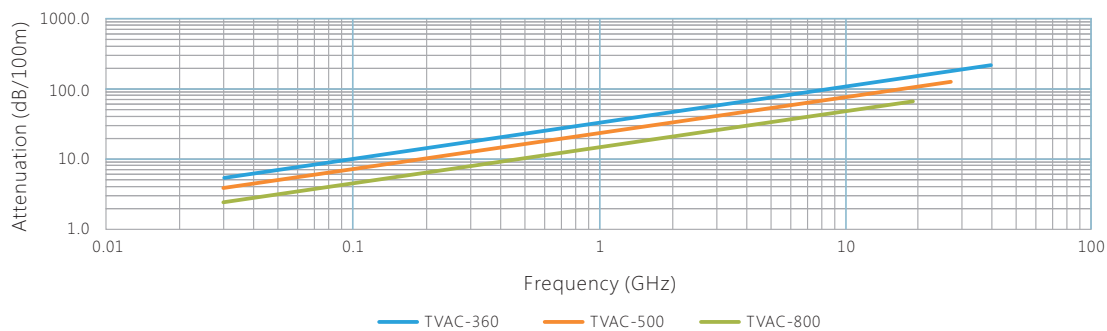


Typical Value Of Mechanical Phase Stability

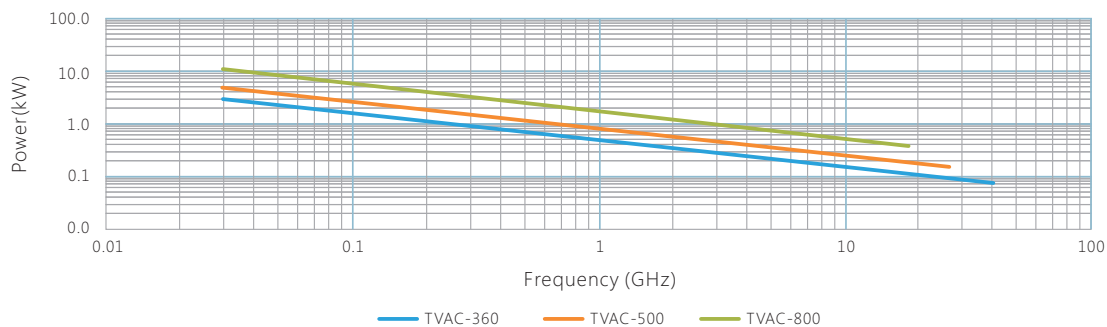
Rotate for one cycle along the minimum repeated bending diameter



Frequency & Attenuation



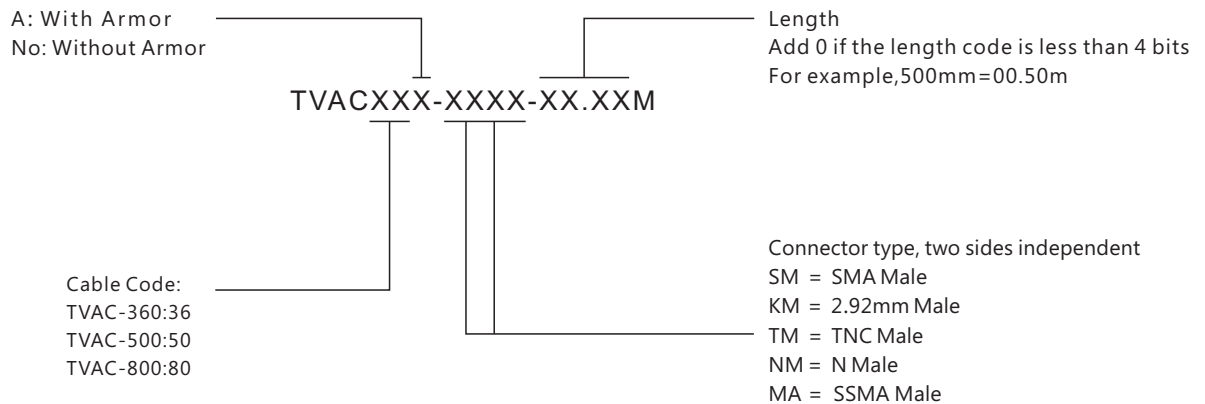
Frequency & Power



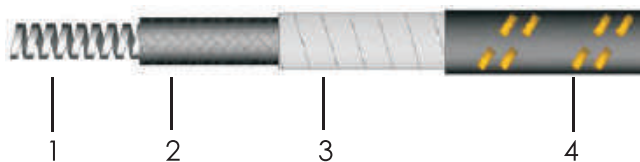


TVAC-Connector and Assembly

Assembly Selection Information



Optional Connectors						
Connector	Type	TVAC-360	TVAC-500	TVAC-800	OF(GHz)	VSWR
SMA	Male	✓	✓	✓	18	1.25
2.92mm	Male	✓			40	1.35
TNC	Male		✓	✓	18	1.25
N Type	Male		✓	✓	18	1.25
SSMA	Male	✓			18	1.3



Description	Materials
1 Armored spring	Stainless Steel Strips
2 Strengthening net	Silver Plated Copper Wire
3 Anti twist layer	PTFE
4 Jacket	PTFE wire(Gray+Yellow)

Armor Type	Inner diameter(mm)	Outer diameter(mm)	Unit mass(g/m)	Cable type
FSK-130	4.2	6.2	54	TVAC-360
FSK-131	5.7	7.8	78	TVAC-500
FSK-133	8.5	10.4	120	TVAC-800

Contact us

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