FLEXIBLE RF CABLE / PHASE STABLE CABLE

Cable Name: W51

Part No: VXW510



26.5 GHz
MAX FREQUENCY

1500 V.DC
POWER HANDLING

Enhanced
SHIELDING & DURABILITY

< 750 PPM
PHASE STABILITY

General Description: The Vinstronics VXW510W is a premium, ultra-low loss, phase-stable RF coaxial cable engineered for demanding microwave environments. Featuring a specialized 6-layer construction and LD PTFE dielectric, it delivers exceptional signal integrity up to 26.5GHz. With strict phase stability (<750PPM) and a remarkable 1500 V.DC voltage rating, it is the ideal interconnect solution for advanced aerospace and communication systems.

Core Features

- **Phase Stability:** <750PPM @ -55℃ ~ +85℃ for high signal fidelity.
- **Ultra-Low Loss:** Optimized for precision, long-distance signal transmission.
- **Low PIM:** Outstanding -155dBc performance for minimal interference.
- **High Voltage Rating:** 1500 V.DC architecture for high-intensity requirements.
- **Advanced 6-Layer Design:** Includes LD PTFE interlayer for enhanced protection.

Target Applications

- **Avionics:** Meets stringent weight and environmental stability standards.
- **Phased Array Radar:** Ensures the precise phase consistency crucial for tracking.
- **ECM Systems:** Reliable performance in harsh electromagnetic environments.
- **High-Frequency Interconnects:** Ideal for any strict loss and phase applications.

CONSTRUCTION SPECIFICATION

Item	Material & Process	Diameter mm [in]
1. Inner Conductor	Silver-plated copper	**1.40** [0.055]
2. Dielectric	Low Density PTFE (LD PTFE)	**3.80** [0.150]
3. Inner Shield	Silver-plated copper strip	**3.95** [0.156]
4. Interlayer	Low Density PTFE (LD PTFE)	**4.20** [0.165]
5. Outer Shield	Silver-plated copper wire braiding	**4.65** [0.183]
6. Jacket	PFA / Gray (Customizable)	**5.10** [0.201]

ELECTRICAL CHARACTERISTICS

Operating Frequency	**26.5 GHz**
Cut-off Frequency	**31 GHz**
Impedance	**50 ± 1 Ω**
Velocity of Propagation	**83 %**
Shielding Effectiveness	**>90 dB**
Dielectric Withstanding Voltage	**1500 V.DC**

ATTENUATION AND TRANSMISSION POWER

Frequency (MHz)	**1000**	**2000**	**3000**	**6000**	**8000**	**10000**	**12400**	**18000**	**26500**
Attenuation (dB/100m)	**24.1**	**34.2**	**42.1**	**60.1**	**69.7**	**78.3**	**87.6**	**106.6**	**130.8**
Average Power (kW)	**0.919**	**0.646**	**0.525**	**0.368**	**0.317**	**0.282**	**0.252**	**0.207**	**0.169**

K1 = 0.750400 **K2** = 0.000328 **Formula:** Attenuation = K1 × √F(MHz) + K2 × F(MHz)

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Static Bending Radius	**24 mm** [0.945 in]
Dynamic Bending Radius	**48 mm** [1.890 in]
Weight	**0.058 kg/m** [0.0390 lbs/ft]
Temperature Range	**-55 ~ +165 ℃** [-67 ~ +329 ℉]