HIGH-TEMPERATURE PHASE-STABLE RF CABLE

Cable Name: IR36

Part No: VXIR360



40 GHz	3.60 mm
MAX FREQUENCY	OUTER DIAMETER
400°C @ 400 s	**76%**
HIGH-TEMP ENDURANCE	VELOCITY

General Description: The Vinstronics VXIR360 is a compact high-temperature phase-stable RF cable designed for harsh-environment interconnect applications up to 40 GHz. Its silver-plated copper conductor, LD PTFE dielectric, multilayer shielding, and PI + PTFE outer jacket support stable RF transmission, compact routing, and short-term high-temperature exposure up to 400°C for 400 S.

Core Features

- **High-Temperature Endurance**: Short-term exposure capability up to 400°C for 400 S.
- **Phase-Stable RF Performance**: Designed for stationary phase-sensitive interconnect applications.
- **Compact 3.60 mm Cable Format**: Supports tighter routing in space-constrained systems.
- **Multilayer Shielding**: Silver-plated copper tape and braid structure for stable RF transmission.
- **PI + PTFE Outer Jacket**: Provides high-temperature protection and mechanical durability.

Target Applications

- **Extreme Temperature Testing**: For RF interconnects used in thermal test and high-temperature evaluation setups.
- **High-Temperature Onboard RF Links**: For stationary RF paths exposed to elevated thermal stress.
- **High-Density Aerospace Routing**: For compact cable routing in space-constrained airborne platforms.
- **Harsh-Environment RF Interconnects**: For phase-sensitive RF assemblies requiring thermal and mechanical stability.

CONSTRUCTION SPECIFICATION

Item	Name	Material & Process	Diameter mm
1	Center Conductor	**Silver-plated copper**	**0.72**
2	Dielectric	**LD PTFE**	**2.10**
3	Inner Shield	**Silver-plated copper tape**	**2.25**
4	Interlayer	**LD PTFE**	**2.55**
5	Outer Shield	**Silver-plated copper wire**	**3.01**
6	Outer Jacket	**PI + PTFE**	**3.60**

ELECTRICAL CHARACTERISTICS

Operating Frequency	**40 GHz**
Cutoff Frequency	**50 GHz**
Impedance	**50 Ω**
Velocity of Propagation	**76 %**
Shielding Effectiveness	**> 90 dB**
Dielectric Withstanding Voltage	**1000 V.DC**

ATTENUATION AND TRANSMISSION POWER

Frequency (MHz)	1000	2000	3000	6000	8000	10000	12400	18000	26500	40000
Attenuation (dB/100 m)	51.9	74.4	92.1	133.4	156.0	176.4	198.7	244.9	305.5	388.8
Average Power (kW)	0.400	0.279	0.225	0.155	0.133	0.118	0.104	0.085	0.068	0.053

K1 = 1.582929 **K2** = 0.001806 **Formula:** Attenuation = K1 × √F(MHz) + K2 × F(MHz)

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Static Bending Radius	**18 mm**
Dynamic Bending Radius	**36 mm**
Weight	**0.028 kg/m**
Storage Temperature	**-55°C to +125°C**
High-Temp Endurance	**400°C @ 400 s**