Semi-rigid (with solid dielectric) Cable

Cable Type 50 (421-250)

Cut-off Frequency: 19.00 GHz

General	
Cable Model No.	421-250
Cable Code for Cable Assemblies	50
Cable MIL-C17 No.	None
Cut-off Frequency (GHz)	19.00
Electrical	
Impedance (Ohms @ sea level and +25°C)	50 ± 0.5
Velocity of Propagation (in %, ±2 %)	69.50
Capacitance (in pF/m)	95.10
Dielectric Strength (KV_{rms} @ 60 Hz)	7.00
Max. Operating Voltage (KV_{rms} @ 60 Hz and sea level)	3.00
Mechanical	
Semi-rigid Type (Dia. in inches)	0.250
Outer Conductor (Dia. in mm)	6.35
Outer Conductor Material	Aluminum
Outer Conductor Finish	-
Dielectric (Dia. in mm)	5.31
Dielectric Material	solid PTFE
Dielectric Constant	~2.0
Center Conductor Material	copper
Center Conductor Finish	silver-plated
Center Conductor (Dia. in mm)	1.63
Weight (grams/m)	103.00
Minimum Bend Radius, Inside, Static (mm)	9.50
Environmental	
Operating Temperature Range (°C)	-40 to +90

Characteristics:

Additional Information:

- Connector Code details
- Information on armor
- Ordering Information

Comparison of regular PTFE and low-density PTFE:

	Regular PTFE Dielectric	Low-density Dielectric
Mechanical Stability vs. Temperature	**Poor**	**Good** Lower coefficient of thermal expansion results in improved dimensional stability from -100°C to +250°C.
Phase Stability vs. Temperature	**Poor**	**Good** Lower coefficient of thermal expansion results in lower Phase Shift vs. Temperature.
Change in Propagation Time vs. Temperature	**Poor**	**Improved** The change in propagation time 70 - 80% less than when using solid PTFE.

Attenuation	**Higher**	**Lower** Lower dissipation factor of the dielectric, lower dielectric constant, larger center conductor result in lower attenuation.
Power Handling	**Lower**	**Higher** Good temperature stability allows higher operating temperature, and therefore higher power.
Weight	**Higher**	**Lower** Low density dielectric results in lower weight.

Attenuation & Power Graph: