COAX Cable

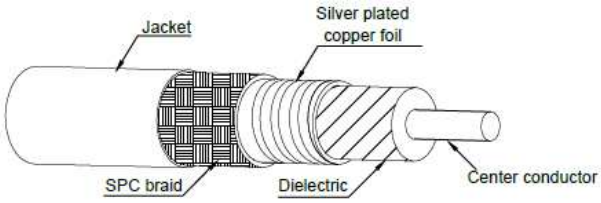
MICROWAVE CABLE

Summary

Microwave coaxial cable has excellent insertion loss performance. This is accomplished through unique cable design that the low dielectric constant, low-loss tangent, and consistency of expanded PTFE dielectric.
A basic cable construction is shown below.

1. Inner Conductor: Solid or Strand Sliver Plated Copper
2. Insulation: Wrapped Low Density PTFE
3. Outer Conductor: Sliver Plated Copper
4. Shielding: Sliver Plated Copper Braiding
5. Outer Jacket: Nom. FEP

The low dielectric constant of the ePTFE dielectric (about 1.4) allows the use of center conductors with nearly twice the surface area as those used in solid PTFE cables, while still maintaining a characteristic impedance of 50 ohms. This provides a significant decrease insertion loss and enables higher transmission power. Our low loss tangent further reduces insertion loss, particularly as the frequency of operation is increased. Capacitance is nominally 25pF/ft.



The conforming nature of the ePTFE dielectric allows for the use of an electrical shield with 100% coverage. This shield consists of helically wrapped, overlapped, silver-plated copper foil. The overlaps are in intimate contact with each other and with the ePTFE dielectric. The result is minimized signal leakage from the cable and less resistance to signal flow on its inside surface, both of which further reduce cable insertion loss. Additionally, on some cables a standard braided mechanical shield is placed over the electrical shield to increase crush resistance, torque resistance, and connector pull strength.

A variety of jacket materials are available depending on the use environment. Our standard jacket material is FEP.

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Cable Construction and Cable Type						
Product PN	LSMC089	LSMC120	LSMC141	LSMC190	LSMC290	LSMC320
Conductor	Solid	Solid	Solid	Solid	Solid	Solid
Conductor Diameter	0.5mm	0.7mm	0.9mm	1.4mm	2.1mm	2.4mm
Dielectric	ePTFE	ePTFE	ePTFE	ePTFE	ePTFE	ePTFE
Braid Diameter	2.0mm	2.7mm	3.3mm	4.3mm	6.7mm	7.2mm
Overall Diameter	2.2mm	3.1mm	3.6mm	4.8mm	7.4mm	8.1mm
Weight	16g/m	26g/m	33g/m	53g/m	127g/m	146g/m
Vp(%)	82.5%	83%	84.5%	85%	85%	85%
Shielding Efficient	＞90dB	＞90dB	＞90dB	＞90dB	＞90dB	＞90dB
Operation Temp.	-55~165	-55~165	-55~165	-55~165	-55~165	-55~165

Attenuation Performance (dB/m)						
Frequency (GHz)	LSM086	LSM120	LSM141	LSM190	LSM290	LSM320
2GHz	0.88	0.65	0.52	0.32	0.22	0.20
4GHz	1.27	0.93	0.75	0.48	0.31	0.29
6Ghz	1.57	1.16	0.94	0.59	0.38	0.35
8GHz	1.88	1.35	1.08	0.7	0.45	0.40
10GHz	2.07	1.52	1.20	0.79	0.50	0.46
12GHz	2.33	1.66	1.32	0.83	0.53	0.49
14GHz	2.50	1.79	1.42	0.91	0.62	0.51
16GHz	2.68	1.93	1.52	0.86	0.62	0.61
18GHz	2.85	2.06	1.63	1.05	0.63	0.62