



NP-822

■ FEATURES

- Extremely Low Loss Tangent
- Excellent Dimensional Stability
- Product Performance Uniformity

■ APPLICATIONS:

- Military Radar Feed Networks
- Low Loss Base Station Antennas
- Digital Radio Antennas
- Commercial Phased Array Networks
- Missile Guidance Systems
- Filters, Couplers, LNAs

■ PERFORMANCE LIST

Characteristics	Unit	Conditioning	Typical Values	SPEC	Test Method
Permittivity	Process	10GHz/23°C	2.20	-	2.5.5.5
	Design		2.20		Differential phase length
Loss Tangent	-	10GHz/23°C	0.0008	-	2.5.5.5
			0.0009		SPDR
Thermal Coefficient of ϵ_r	ppm/°C	10 GHz -50 to 150 °C	80		IPC-TM-650 2.5.5.13
Volume resistivity	MΩ-cm	C-96/35/90	10 ⁹	10 ⁶ ↑	IPC-TM-650 2.5.17
Surface resistivity	MΩ	C-96/35/90	10 ⁸	10 ⁴ ↑	IPC-TM-650 2.5.17
Arc resistance	SEC	D-48/50+D-0.5/23	180↑	60 ↑	IPC-TM-650 2.5.1
Dielectric breakdown	KV	D-48/50	45↑	20 ↑	IPC-TM-650 2.5.6
Td (5% weight loss)	°C	TGA, 10°C/min	540	500 ↑	ASTM D3850
CTE (z) (50 - 260°C)	ppm/°C	TMA	357	N/A	IPC-TM-650 2.4.24
CTE (x,y) (50 - 260°C)	ppm/°C	TMA	20-30	N/A	IPC-TM-650 2.4.24
Thermal stress	SEC	288°Cx10" solder dipping	300 ↑	10↑	IPC-TM-650 2.4.13.1
Peel strength 1 oz	lb/in	288°Cx10" solder floating	10-12	6↑	IPC-TM-650 2.4.8
Moisture absorption	%	D-24/23	0.02	0.15↓	IPC-TM-650 2.6.2.1
Density (Specific Gravity)	g/cm ³		2.1	2.05~2.15	ASTM D792
Flammability	-	C-48/23/50	V-0	V-0	UL94
Thermal Conductivity	W/mK		0.25	0.2↑	ASTM F 433
Dimensional stability X-Y axis	%	E-0.5/170	0.01-0.03	0.05↓	IPC-TM-650 2.4.39
Passive Intermodulation	dBc		-158	<-153	: IEC-62037

NOTE:The average value in the table refers to samples of 0.030" 1/1.

PRODUCT SIZE & THICKNESS

THICKNESS INCH (mm)	THICKNESS TOLERANCE INCH (mm)	COPPER CLADDING OZ (μm)	PANEL SIZE	
			INCH	mm
0.010(0.25)	±0.0010 (0.025)			
0.020(0.50)	±0.0015 (0.038)	0.5 (17) HTE,RTF	48 x 36	1220 x 914
0.030(0.76)	±0.0020 (0.050)	1.0 (35) HTE,RTF	24 x 18	610 x 457
0.060(1.52)	±0.0030 (0.076)	2.0 (70) HTE,RTF	12 x 18	305 x 457
0.125(3.18)	±0.0060 (0.154)			