

MERCURYWAVE 9350

MERCURYWAVE 9350B

RF and Microwave Laminate & Prepreg

Benefits

- Well-controlled Dk/Df electrical properties
- Stable dielectric performance over a wide frequency range
- RF Substrate Technology
- Available in a variety of constructions

Applications

- Base Station Equipment
- Automotive
- Satellite Communication
- Guidance and Radar
- Broadband RF Antennas



Mercurywave 9350 and Mercurywave 9350B are non-PTFE, high frequency, low resin systems material tailored to the needs of the RF and Microwave market. With low loss electrical properties and high thermal reliability, it offers greater flexibility and freedom to design high performance RF and Microwave substrates.

Excellent Electrical Properties

- Controlled Dk/Df electrical properties for both laminate and prepregs
- Stable Dk/Df versus frequency when tested over various environmental conditions
- Low insertion loss
- Low passive intermodulation “PIM”

Thermal and Mechanical Properties

- Excellent thermal dissipation
- Low Z-axis expansion
- Withstands multiple 260°C assembly reflow cycles
- High Peel Strength
- High Tg material

Processing

- 120 minutes press at 193°C and 275-350 psi.

Specifications

- UL 94V-0, Rating of 50°C Maximum Operating Temperature (MOT)
- Meets and exceeds IPC-4101/29, IPC-4103/240 specifications
- UL file number: E36295

Properties	Conditions	Typical Value	Unit	Test Method
Electrical Properties				
Dielectric Constant	@ 2.5 GHz	3.7		
	@ 10 GHz	3.5		IPC-TM-650.2.5.5.5
Dissipation Factor	@ 2.5 GHz	0.004		
	@ 10 GHz	0.004		IPC-TM-650.2.5.5.5
Volume Resistivity	C - 96 / 35 / 90	7.0 x 10 ⁷	MΩ - cm	IPC-TM-650.2.5.17.1
	E - 24 / 125	7.4 X 10 ⁶		
Surface Resistivity	C - 96 / 35 / 90	6.6 X 10 ⁵	MΩ	IPC-TM-650.2.5.17.1
	E - 24 / 125	4.7 x 10 ⁶		
Electric Strength		5.9x10 ⁴ (1500)	V/mm (V/mil)	IPC-TM-650.2.5.6.2
Thermal Properties				
*Glass Transition Temperature (Tg)	DMA(°C) (Tan d Peak)	>200	°C	IPC-TM-650.2.4.24.3
Degradation Temperature (TGA)	Degradation Temp (TGA) (5% wt. loss)	360	°C	IPC-TM-650.2.3.40
T-260	Time to delamination @ 260°C	200	minutes	IPC-TM-650.2.4.24.1
Thermal Conductivity		0.50	W/mK	ASTM E1461
Mechanical Properties				
Peel Strength	1 oz (35μ) Cu After Solder Float	1.22 (7.0)	N/mm (lbf/inch)	IPC-TM-650.2.4.8
X / Y CTE	-40°C to + 125°C	10 / 14	ppm/°C	IPC-TM-650.2.4.41
Z Axis CTE Alpha 1 / Alpha 2 (55% RC)	50°C to Tg / Tg to 260°C	48 / 245	ppm/°C	IPC-TM-650.2.4.24
Z Axis Expansion (43% RC)	50°C to 260°C	2.5	%	IPC-TM-650.2.4.24
Young's Modulus (X / Y)		2.1 ¹⁰ / 2.5 ¹⁰ (3.0 / 3.7)	GN/m ² (psi x 10 ⁶)	ASTM D3039
Poisson's Ratios (X / Y)		0.14 / 0.17		
Chemical / Physical Properties				
Moisture Absorption		0.15	wt. %	IPC-TM-650.2.6.2.1

* DMA is the preferred method for measuring Tg - other methods may be less accurate.

- All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a company representative directly
- Mercurywave 9350 and Mercurywave 9350B can be manufactured in laminate thickness from 2 mil (0.05 mm) and up.
- Mercurywave 9350 and Mercurywave 9350B are available in most common panel sizes.
- Please contact AGC for availability of any other constructions, copper weights glass styles including very low profile copper and RTFOIL®

