

N9000-13 RF

PTFE Performance Blended Laminate

Benefits

- Blended PTFE / Epoxy Material
- Does not use ceramic fillers
- Optimized PTFE processing
- UL 94-V0 rating

Applications

- Antennas
- LNB's
- Hybrid RF Multilayers
- Avionics
- Military



N9000-13 RF is a PTFE Performance Blended product which combines the RF electrical properties of PTFE with the competitive performance features of AGC's proprietary N4000-13 epoxy.

Blended material offers the mechanical performance of a thermoset epoxy with the electrical performance of PTFE

- Lead-free assembly compatibility
- Excellent for cost-sensitive applications such as LNB's, In-building antennas and automotive telematics
- Does not use expensive and abrasive ceramic fillers
- CAF Resistant

Optimized N9000 PTFE processing

- Conventional PTFE processing
- Most epoxy prepregs will adhere for hybrid multilayer applications

Specifications

- UL 94V-0
- UL file number: E36295

Standard constructions for a wide range of applications

Dielectric Constant*	Dissipation Factor*	Laminate Core Thickness
3.00	0.0040	0.020", 0.030", 0.060"
3.20	0.0045	0.020", 0.030", 0.060"
3.38	0.0046	0.020", 0.030", 0.060"
3.50	0.0055	0.020", 0.030", 0.060"

*All Dk and loss testing performed according to IPC TM 650 testing methods at 10 GHz.

Properties	Conditions	Typical Value	Unit	Test Method
Electrical Properties				
Dielectric Constant @ 10 GHz	N9300-13 RF	3.00		IPC-TM-650.2.5.5.5
	N9320-13 RF	3.20		
	N9338-13 RF	3.38		
	N9350-13 RF	3.48		
Dissipation Factor @ 10 GHz	N9300-13 RF	0.0040		IPC-TM-650.2.5.5.5
	N9320-13 RF	0.0045		
	N9338-13 RF	0.0046		
	N9350-13 RF	0.0055		
Volume Resistivity	C - 96 / 35 / 90	x 10 ⁸	MΩ - cm	IPC-TM-650.2.5.17.1
	E - 24 / 125	X 10 ⁹		
Surface Resistivity	C - 96 / 35 / 90	X 10 ⁶	MΩ	IPC-TM-650.2.5.17.1
	E - 24 / 125	x 10 ⁷		
Electric Strength		4.8x10 ⁴ (1300)	V/mm (V/mil)	IPC-TM-650.2.5.6.2
Thermal Properties				
*Glass Transition Temperature (Tg)	DMA(°C) (Tan d Peak)	>245	°C	IPC-TM-650.2.4.24.3
Degradation Temperature (TGA)	Degradation Temp (TGA) (5% wt. loss)	350	°C	IPC-TM-650.2.3.40
T-260	Time to delamination @ 260°C	30+	minutes	IPC-TM-650.2.4.24.1
Mechanical Properties				
Peel Strength	1 oz (35μ) Cu After Solder Float	1.60 (9.1)	N/mm (lbf/inch)	IPC-TM-650.2.4.8
X / Y CTE	-40°C to + 125°C	13 / 20	ppm/°C	IPC-TM-650.2.4.41
Z Axis Expansion (43% RC)	50°C to 260°C	TBD	%	IPC-TM-650.2.4.24
Chemical / Physical Properties				
Moisture Absorption		0.07	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
- N9000-13 RF is available in most common panel sizes.
- Please contact AGC for availability of constructions, copper weights and glass styles.

