

Rogers Corporation RT/duroid® 5880LZ Lightweight, High Frequency PTFE Laminate

Category : Polymer , Thermoplastic , Fluoropolymer , PTFE , Polytetrafluoroethylene (PTFE), Glass Filled, Molded

Material Notes:

RT/duroid® 5880LZ filled PTFE composites are designed for exacting stripline and microstrip circuit applications. The unique filler results in a low density, lightweight material for high performance weight sensitive applications. The very low dielectric constant of RT/duroid 5880LZ laminate is uniform from panel to panel and is constant over a wide frequency range. Its low dissipation factor extends the usefulness of RT/duroid 5880LZ to Ku-band and above. RT/duroid 5880LZ laminates are easily cut, sheared and machined to shape. They are resistant to all solvents and reagents, hot or cold, normally used in etching printed circuits or in plating edges and holes. Available with a range of copper cladding options. Features: Lowest dielectric constant available Low Z-axis CTE Lightweight / low density Uniform electrical properties over a wide frequency range Lead free process compatible Typical Applications: Airborne Antenna Systems Lightweight feed networks Military Radar Systems Missile Guidance Systems Point to Point Digital Radio Antennas Information provided by Rogers Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Rogers-Corporation-RTduroid-5880LZ-Lightweight-High-Frequency-PTFE-Laminate.php

Physical Properties	Metric	English	Comments
Density	1.40 g/cc	0.0506 lb/in ³	ASTM D792
Moisture Absorption at Equilibrium	0.22 %	0.22 %	ASTM D570
Thickness	254 - 2540 microns	10.0 - 100 mil	Range of thicknesses available
Outgassing - Total Mass Loss	0.010 %	0.010 %	TML; ASTM E595
	0.010 %	0.010 %	CVCM; ASTM E595
	0.020 %	0.020 %	WVR; ASTM E595

Mechanical Properties	Metric	English	Comments
Peel Strength	>= 0.701 kN/m	>= 4.00 pli	Copper; IPC-TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	41.5 µm/m-°C	23.1 µin/in-°F	Z-Direction; IPC-TM-650 2.4.41
	43.0 µm/m-°C	23.9 µin/in-°F	Y-Direction; IPC-TM-650 2.4.41
	44.0 µm/m-°C	24.4 µin/in-°F	X-Direction; IPC-TM-650 2.4.41
Specific Heat Capacity	0.950 J/g-°C	0.227 BTU/lb-°F	calculated
Thermal Conductivity	0.330 W/m-K	2.29 BTU-in/hr-ft ² -°F	Z direction; ASTM C518
	@Temperature 80.0 °C	@Temperature 176 °F	

Thermal Properties	Metric	English	Comments
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Electrical Properties	Metric	English	Comments
Volume Resistivity	2.10e+13 ohm-cm	2.10e+13 ohm-cm	Condition A; IPC 2.5.17.1
Surface Resistance	2.60e+12 ohm	2.60e+12 ohm	Condition A; IPC 2.5.17.1
Dielectric Constant	1.92 - 2.0	1.92 - 2.0	Z direction; Process; IPC-TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
Dielectric Constant	1.96	1.96	Z direction; Design; Differential Phase Length Method
	@Frequency 8.00e+9 - 4.00e+10 Hz	@Frequency 8.00e+9 - 4.00e+10 Hz	
Dielectric Strength	11.2 kV/mm	285 kV/in	IPC-TM-650 2.5.6.2
Dissipation Factor	0.0019	0.0019	Z direction; IPC-TM-650 2.5.5.3
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
Dissipation Factor	<= 0.0027	<= 0.0027	Z direction; IPC-TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	

Descriptive Properties	Value	Comments
Dimensional Stability	2 - 3 mm/m	X, Y direction; IPC-TM-650 2.4.39A
Thermal Coefficient of Dielectric Constant	22 ppm/°C	Z direction; IPC-TM-650 2.5.5.5

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