

Rogers Corporation R03210 Woven-Glass Reinforced PTFE Laminate

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

Material Notes:

Features and Benefits: Woven glass reinforcement - Improves rigidity for easier handling
Uniform electrical and mechanical performance - ideal for complex multi-layer high frequency structures
Low dielectric loss - high frequency performance can be used in applications exceeding 20 GHz
Low in-plane expansion coefficient (match to copper) - suitable for use with epoxy multi-layer board hybrid designs and allows for more reliable surface mounted assemblies
Excellent dimensional stability - high production yields
Economically priced - cost effective volume manufacturing
Surface smoothness- allows for finer line etching tolerances
Lead-free process compatible
Uses: Automotive collision avoidance systems
Automotive global positions satellite antennas
Wireless telecommunications systems
Microstrip patch antennas for wireless communications
Direct broadcast satellites
Datalink on cable systems
Remote meter readers
Power backplanes
LMDS and wireless broadband
Base station infrastructure
Information provided by Rogers Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Rogers-Corporation-R03210-Woven-Glass-Reinforced-PTFE-Laminate.php

Physical Properties	Metric	English	Comments
Density	3.00 g/cc	0.108 lb/in ³	
Water Absorption	<= 0.10 %	<= 0.10 %	D24/23; IPC-TM-2.4.8
Thickness	635 - 1270 microns	25.0 - 50.0 mil	Range of Thicknesses Available

Mechanical Properties	Metric	English	Comments
Tensile Modulus	3.56 GPa	517 ksi	TD; ASTM D638
	3.99 GPa	578 ksi	MD; ASTM D638
Peel Strength	1.93 kN/m	11.0 pli	Copper; 1 oz. EDC After Solder Float; IPC-TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	7.22 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	X, Y- Direction; ASTM D3386-94
	@Temperature -55.0 - 288 $^\circ\text{C}$	@Temperature -67.0 - 550 $^\circ\text{F}$	
	34.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	18.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Z-Direction; ASTM D3386-94
	@Temperature -55.0 - 288 $^\circ\text{C}$	@Temperature -67.0 - 550 $^\circ\text{F}$	
Specific Heat Capacity	0.790 J/g- $^\circ\text{C}$	0.189 BTU/lb- $^\circ\text{F}$	Calculated
Thermal Conductivity	0.810 W/m-K	5.62 BTU-in/hr-ft ² - $^\circ\text{F}$	ASTM C518
	@Temperature 80.0 $^\circ\text{C}$	@Temperature 176 $^\circ\text{F}$	
Decomposition Temperature			TGA; ASTM D3850

Thermal Properties	500 °C Metric	932 °F English	Comments
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+9 ohm-cm	1.00e+9 ohm-cm	Cond. A; IPC 2.5.17.1
Surface Resistance	1.00e+9 ohm	1.00e+9 ohm	Cond. A; IPC 2.5.17.1
Dielectric Constant	9.7 - 10.7	9.7 - 10.7	Clamped stripline, Z-direction; IPC-TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
	10.8	10.8	Differential Phase Length Method, Z-Direction
	@Frequency 8.00e+9 - 4.00e+10 Hz	@Frequency 8.00e+9 - 4.00e+10 Hz	
Dissipation Factor	0.0027	0.0027	IPC-TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	

Descriptive Properties	Value	Comments
Dimensional Stability	0.8 mm/m	ASTM D257, Cond. A; X, Y-direction
Thermal Coefficient of Dielectric Constant	-459 ppm/°C	IPC-TM-650 2.5.5.5; 10 GHz; 0°C to 100°C; Z-Direction

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