

Rogers Corporation R03203 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 handlingUniform electrical and mechanical performance - ideal for complex multi-layer high frequency structuresLow dielectric loss - high frequency performance can be used in applications exceeding 20 GHzLow in-plane expansion coefficient (match to copper) - suitable for use with epoxy multi-layer board hybrid designs and allows for more reliable surface mounted assembliesExcellent dimensional stability - high production yieldsEconomically priced - cost effective volume manufacturingSurface smoothness- allows for finer line etching tolerancesLead-free process compatible**Uses:**Automotive collision avoidance systemsAutomotive global positions satellite antennasWireless telecommunications systemsMicrostrip patch antennas for wireless communicationsDirect broadcast satellitesDatalink on cable systemsRemote meter readersPower backplanesLMDS and wireless broadbandBase station infrastructureInformation provided by Rogers Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Rogers-Corporation-R03203-Woven-Glass-Reinforced-PTFE-Laminate.php

Physical Properties	Metric	English	Comments
Density	2.10 g/cc	0.0759 lb/in ³	
Water Absorption	<= 0.10 %	<= 0.10 %	D24/23; IPC-TM-2.4.8
Thickness	254 - 1520 microns	10.0 - 60.0 mil	Range of Thicknesses Available

Mechanical Properties	Metric	English	Comments
Tensile Modulus	2.42 GPa	351 ksi	TD; ASTM D638
	2.82 GPa	409 ksi	MD; ASTM D638
Peel Strength	1.79 kN/m	10.2 pli	Copper; 1 oz. EDC After Solder Float; IPC-TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 $\mu\text{m}/\text{m}\cdot\text{C}$	7.22 $\mu\text{in}/\text{in}\cdot\text{F}$	X, Y- Direction; ASTM D3386-94
	@Temperature -55.0 - 288 °C	@Temperature -67.0 - 550 °F	
	58.0 $\mu\text{m}/\text{m}\cdot\text{C}$	32.2 $\mu\text{in}/\text{in}\cdot\text{F}$	Z-Direction; ASTM D3386-94
	@Temperature -55.0 - 288 °C	@Temperature -67.0 - 550 °F	
Specific Heat Capacity	0.950 J/g-°C	0.227 BTU/lb-°F	Calculated
Thermal Conductivity	0.480 W/m-K	3.33 BTU-in/hr-ft ² -°F	ASTM C518
	@Temperature 80.0 °C	@Temperature 176 °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+13 ohm-cm	1.00e+13 ohm-cm	Cond. A; IPC 2.5.17.1
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	Cond. A; IPC 2.5.17.1
Dielectric Constant	2.98 - 3.06	2.98 - 3.06	Clamped stripline, Z-direction; IPC-TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
	3.02	3.02	Differential Phase Length Method, Z-Direction
	@Frequency 8.00e+9 - 4.00e+10 Hz	@Frequency 8.00e+9 - 4.00e+10 Hz	
Dissipation Factor	0.0016	0.0016	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	-13 ppm/°C	IPC-TM-650 2.5.5.5; 10 GHz; 0°C to 100°C; Z-Direction

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