Rogers Corporation XT/duroid™ 8100 0.004" Woven Glass Reinforced Thermoplastic Circuit Material

Category : Polymer , Thermoplastic

Material Notes:

XT/duroid™ 8100 woven glass reinforced thermoplastic circuit materials provide an excellent solution for printed circuit board applications used in demanding environmental conditions. XT/duroid 8100 circuit materials are excellent for high frequency/high speed applications. Both dielectric constant and dissipation factor are stable over a wide range of frequencies.XT/duroid 8100 is thermally stable, with a melt temperature higher than PTFE materials and an estimated relative thermal index (RTI) greater than 210°C. The XT/duroid products possess impressive chemical and radiation resistance.Features and Benefits:Stable dielectric constant and dissipation factor over a wide frequency range - High reliability and uniform electrical properties over frequencyHigh maximum operating temperature - suitable for applications where high temperature stability is requiredExcellent chemical resistance - Ease of processing, Resistant to solvents and reagents used to process circuit boards, and Operates in harsh chemical environmentsEnvironmentally friendly - Halogen free/inherently flame retardant, Lead-free solder capable, low smoke/toxicity1/2 oz. very low profile electrodeposited copper foil claddingTypical Applications:Flex-to-install applicationsLightweight feed manifoldsSemiconductor burn-inConformal circuitryOil and gas explorationInformation provided by Rogers Corporation.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Rogers-Corporation-XTduroid-8100-0004-Woven-Glass-Reinforced-Thermoplastic-Circuit-Material.php

Physical Properties	Metric	English	Comments
Moisture Absorption at Equilibrium	0.21 %	0.21 %	D24/23; IPC-TM-650 2.6.2.1
	0.32 %	0.32 %	D48/50; ASTM D570
Thickness	102 microns	4.00 mil	

Mechanical Properties	Metric	English	Comments
Tensile Strength	190 MPa	27600 psi	RT; ASTM D638
Tensile Modulus	7.86 GPa	1140 ksi	RT; ASTM D638
Peel Strength	1.10 kN/m	6.30 pli	Copper; IPC-TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	19.0 µm/m-°C @Temperature 0.000 - 150 °C	10.6 µin/in-°F @Temperature 32.0 - 302 °F	X-Direction; IPC-TM-650 2.1.41
	21.0 µm/m-°C @Temperature 0.000 - 150 °C	11.7 µin/in-°F @Temperature 32.0 - 302 °F	Y-Direction; IPC-TM-650 2.1.41

Thermal Properties	Metric	English	Comments
	76.0 µm/m-°C @Temperature 0.000 - 150 °C	42.2 µin/in-°F @Temperature 32.0 - 302 °F	Z-Direction; IPC-TM-650 2.1.41
Thermal Conductivity	0.300 W/m-K	2.08 BTU-in/hr-ft²-°F	ASTM C518
Maximum Service Temperature, Air	>= 210 °C	>= 410 °F	pending UL RTI
Glass Transition Temp, Tg	176 °C	349 °F	TMA; ASTM D3850
Flammability, UL94	V-0 @Thickness 0.102 mm	V-0 @Thickness 0.00400 in	pending

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	Condition A; Z direction; IPC 2.5.17.1
Surface Resistance	1.00e+12 ohm	1.00e+12 ohm	Condition A; X, Y direction; IPC 2.5.17.1
Dielectric Constant	3.27 - 3.37 @Frequency 1.00e+10 Hz	3.27 - 3.37 @Frequency 1.00e+10 Hz	Z direction; IPC-TM-650 2.5.5.5.1
	3.32 @Frequency 8.00e+9 - 4.00e+10 Hz	3.32 @Frequency 8.00e+9 - 4.00e+10 Hz	Z direction; Differential Phase Length Method
Dielectric Strength	89.4 kV/mm	2270 kV/in	Z Direction; IPC-TM-650 2.5.6.2
Dissipation Factor	0.0038 @Frequency 1.00e+10 Hz	0.0038 @Frequency 1.00e+10 Hz	Z direction; IPC-TM-650 2.5.5.5.1

Descriptive Properties	Value	Comments
Dimensional Stability	-0.01 mm/m	Y-CMD; IPC-TM-650, 2.4.39A; 150°C bake
	-0.025 mm/m	X-MD; IPC-TM-650, 2.4.39A; 150°C bake
T260	pass	
Thermal Coefficient of Dielectric Constant	9 ppm/°C	IPC-TM-650 2.5.5.5.1; -100°C to 250°C
Time to Delamination (T-288)	pass	

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