Rogers Corporation XT/duroid™ 8000 Thermoplastic Laminate, Circuit Material

Category : Polymer , Thermoplastic

Material Notes:

XT/duroid™ 8000 thermoplastic circuit materials provide an excellent solution for printed circuit board applications used in demanding environmental conditions. XT/duroid 8000 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 8000 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 explorationChip packaging substratesInformation provided by Rogers Corporation.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Rogers-Corporation-XTduroid-8000-Thermoplastic-Laminate-Circuit-Material.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.55 g/cc	1.55 g/cc	ASTM D792
Moisture Absorption at Equilibrium	0.20 %	0.20 %	D24/23; IPC-TM-650 2.6.2.1
Thickness	50.8 microns	2.00 mil	
Outgassing - Total Mass Loss	0.010 %	0.010 %	CVCM; ASTM E595
	0.090 %	0.090 %	TML; ASTM E595
	0.090 %	0.090 %	WVR; ASTM E595

Mechanical Properties	Metric	English	Comments
Tensile Strength	100 MPa	14500 psi	RT; ASTM D638
Elongation at Break	4.0 %	4.0 %	ASTM D638
Tensile Modulus	8.27 GPa	1200 ksi	RT; ASTM D638
Peel Strength	0.877 kN/m	5.00 pli	Copper; IPC-TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	18.0 µm/m-°C @Temperature 0.000 - 150 °C	10.0 µin/in-°F @Temperature 32.0 - 302 °F	X-Direction; IPC-TM-650 2.1.41

Thermal Properties	Metric	English	Comments
	23.0 µm/m-°C @Temperature 0.000 - 150 °C	12.8 µin/in-°F @Temperature 32.0 - 302 °F	Y-Direction; IPC-TM-650 2.1.41
	68.0 µm/m-°C @Temperature 0.000 - 150 °C	37.8 µin/in-°F @Temperature 32.0 - 302 °F	Z-Direction; IPC-TM-650 2.1.41
Thermal Conductivity	0.350 W/m-K	2.43 BTU-in/hr-ft²-°F	ASTM C518
Maximum Service Temperature, Air	>= 200 °C	>= 392 °F	pending UL RTI
Flammability, UL94	V-0 @Thickness 0.0508 mm	V-0 @Thickness 0.00200 in	pending

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	Condition A and C96/35/90; IPC 2.5.17.1
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	Condition A and C96/35/90; IPC 2.5.17.1
Dielectric Constant	3.18 - 3.28 @Frequency 1.00e+10 Hz	3.18 - 3.28 @Frequency 1.00e+10 Hz	Z direction; IPC-TM-650 2.5.5.5.1
Dielectric Strength	177 kV/mm	4500 kV/in	IPC-TM-650 2.5.6.2
Dissipation Factor	<= 0.0035 @Frequency 1.00e+10 Hz	<= 0.0035 @Frequency 1.00e+10 Hz	Z direction; IPC-TM-650 2.5.5.5.1

Descriptive Properties	Value	Comments
Dimensional Stability	-0.04	MD; IPC-TM-650, 2.2.4; After bake 120°C
	-0.1	CMD; IPC-TM-650, 2.2.4; After bake 120°C
T260	pass	
Thermal Coefficient of Dielectric Constant	7 ppm/°C	IPC-TM-650 2.5.5.5.1; -50°C to 150°C
Time to Delamination (T-288)	pass	

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