Rogers Corporation TMM® TMM101 Ceramic Thermoset Polymer Composite

Category : Polymer , Thermoset

Material Notes:

TMM® Thermoset microwave materials are ceramic thermoset polymer composites designed for high plate-thru-hole reliability stripline and microstrip applications. The electrical and mechanical properties of TMM laminates combine many of the benefits of both ceramic and traditional PTFE microwave circuit laminates, without requiring the specialized production techniques common to these materials.Features:Wide range of dielectric constants. Ideal for single material systems on a wide variety of applications.Excellent mechanical properties. Resists creep and cold flow.Exceptionally low thermal coefficient of dielectric constant.Coefficient of thermal expansion matched to copper. High reliability of plated through holes.Resistant to process chemicals. No damage to material during fabrication and assembly processes.Thermoset resin for reliable wirebonding. No specialized production techniques required. TMM 10 and 10i laminates can replace alumina substrates.Lead-free process compatibleTypical Applications:RF and Microwave CircuitryGlobal Positioning Systems AntennasPower Amplifiers and CombinersPatch AntennasFilters and CouplerDielectric Polarizers and LensesSatellite Communication SystemsChip TestersInformation provided by Rogers Corporation.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Rogers-Corporation-TMM-TMM101-Ceramic-Thermoset-Polymer-Composite.php

Physical Properties	Metric	English	Comments
Specific Gravity	2.77 g/cc	2.77 g/cc	ASTM D792
Water Absorption	0.13 % @Thickness 3.17 mm	0.13 % @Thickness 0.125 in	D/48/50; ASTM D570
	0.16 % @Thickness 1.27 mm	0.16 % @Thickness 0.0500 in	D/48/50; ASTM D570
Thickness	381 - 12700 microns	15.0 - 500 mil	Range of Standard Thicknesses

Mechanical Properties	Metric	English	Comments
Flexural Modulus	12.4 GPa	1800 ksi	Estimated; X, Y direction; Condition A; ASTM D790
Peel Strength	0.877 kN/m	5.00 pli	X, Y direction; after solder float 1 oz. EDC; IPC-TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	19.0 µm/m-°C @Temperature 0.000 - 140 °C	10.6 µin/in-°F @Temperature 32.0 - 284 °F	X-, Y-Direction; ASTM D3386
	20.0 µm/m-°C @Temperature 0.000 - 140 °C	11.1 µin/in-°F @Temperature 32.0 - 284 °F	Z-Direction; ASTM D3386

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.720 J/g-°C	0.172 BTU/lb-°F	calculated
Thermal Conductivity	0.760 W/m-K @Temperature 80.0 °C	5.27 BTU-in/hr-ft²-°F @Temperature 176 °F	ASTM C518
Decomposition Temperature	425 °C	797 °F	TGA; ASTM D3850

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+14 ohm-cm	2.00e+14 ohm-cm	ASTM D257
Surface Resistance	4.00e+13 ohm	4.00e+13 ohm	ASTM D257
Insulation Resistance	>= 2.00e+12 ohm	>= 2.00e+12 ohm	C/96/60/95; ASTM D257
Dielectric Constant	9.555 - 10.045 @Frequency 1.00e+10 Hz	9.555 - 10.045 @Frequency 1.00e+10 Hz	Z direction; iPC-TM-650 2.5.5.5
Dissipation Factor	0.0020 @Frequency 1.00e+10 Hz	0.0020 @Frequency 1.00e+10 Hz	Z direction; IPC-TM-650 2.5.5.5

Descriptive Properties	Value	Comments
Thermal Coefficient of Dielectric Constant	-43 ppm/°C	Estimated; IPC-TM-650 2.5.5.5; -55°C to 125°C

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com
Email : sales@lookpolymers.com
Tel : +86 021-51131842
Mobile : +86 13061808058
Skype : lookpolymers
Address : United North Road 215,Fengxian District, Shanghai City,China