

Premix Thermoplastics PREBOARD E1025 Standard Epoxy Circuit Boards

Category : Polymer , Thermoset , Epoxy

Material Notes:

Standard epoxy (FR4) circuit boards do not lend themselves for high frequency applications due to the poor dielectric properties. For that reason PTFE is used predominately. This is an expensive material and difficult to process. PREBOARD is a novel thermoplastic based PCB laminate that offers great cost savings without sacrificing on the desired properties. Low dissipation factor leads to high gain in the antennas. Dielectric properties match well and even outperform PTFE. As a non filled laminate PREBOARD is fully homogenous so that consistent properties are achieved through the whole panel even at high frequencies. Temperature stability in processing and long term stability in service at elevated temperatures are good. Low moisture absorption is also good. PREBOARD is offered as custom sized panels according to customer specifications. Also thin films made of the same material are available and marketed under the name PREFLEX. Thus the same material can also be used in rigid/flex boards. The material lends itself also well for injection moulding and is available for that purpose in granules sold under the name PREPERM. This enables the production of 3D circuit boards to customer specification. Normally low temperature solders are recommended. Soldering with standard non lead solders has been demonstrated with fixtures. Key features: Low and stable dissipation factor Low and stable dielectric constant Low water absorption High Tg Recyclable and RoHS compliant Easier to process than PTFE Good thermal resistance Low CTE in all directions Flame retardant UL 94-V0 Applications: cellular phone base stations, cell phone antenna frames and similar antennas and other RF and microwave devices. Also halogen free flame retardant UL-V0 grade is available. Information from Premix OY

Order this product through the following link:

http://www.lookpolymers.com/polymer_Premix-Thermoplastics-PREBOARD-E1025-Standard-Epoxy-Circuit-Boards.php

Physical Properties	Metric	English	Comments
Density	1.06 g/cc	0.0383 lb/in ³	ASTM D792
Water Absorption	0.40 %	0.40 %	TM650 2.6.2.1

Mechanical Properties	Metric	English	Comments
Tensile Strength	60.0 MPa	8700 psi	ISO 527
Tensile Modulus	2.30 GPa	334 ksi	ISO 527
Flexural Modulus	2.20 GPa	319 ksi	ISO 178

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	27.8 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
Glass Transition Temp, Tg	207 $^\circ\text{C}$	405 $^\circ\text{F}$	TM650 2.4.25
	210 $^\circ\text{C}$	410 $^\circ\text{F}$	

Electrical Properties	Metric	English	Comments
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Volume Resistivity Electrical Properties	2.00e+8 ohm-cm Metric	2.00e+8 ohm-cm English	TM650 2.5.17.1 Comments
Surface Resistance	2.00e+8 ohm	2.00e+8 ohm	TM650 2.5.17.1
Dielectric Constant	2.55 @Frequency 1.00e+9 - 1.00e+10 Hz	2.55 @Frequency 1.00e+9 - 1.00e+10 Hz	TM650 2.5.5.9
Dissipation Factor	0.0010 @Frequency 1.00e+9 - 1.00e+10 Hz	0.0010 @Frequency 1.00e+9 - 1.00e+10 Hz	

Descriptive Properties	Value	Comments
Copper Peel Strength (N/mm)	1	IPE-TM650 2.4.8
Dimensional Stability (%)	<0.2	150°C/2h

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