Technical Data

SFRG-8 Solvent Free Resin Coated Copper

Features & Benefits

- SFRG-8 (Solvent Free Resin Glass-Fiber Reinforced Coated Copper) is a kind of resin coated copper which provides the advantage of high thermal conductivity and reliability. This Semi-finished material is good for single and multilayer thermal conductive printed circuit board applications.
- SFRG-8 is a sandwich structure, which includes a layer of copper, prepreg, and lower release film
- Excellent thermal conductivity
- High Electrical Strength
- Lead-free solder compatible
- RoHS compliant and environmentally green
- Available in rolls
- TCLAD SFRG-8 minimizes thermal impedance and conducts heat more efficiently than standard FR-4 PCB printed wiring boards (PWB's) or IMS.
- The differentiating technology of Thermal Clad resides in the dielectric. This datasheet highlights the performance characteristics of TCLAD SFRG-8.

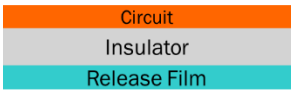
*Product thermal conductivity is based on 2oz cu x 100µm SFRG-8 x 1.5mm Al

Applications

- Traditional multilayer PCBs that have hot spots that need to be dissipated
- High power density applications which required low thermal resistance
- Power conversion, Inverter, DC/DC, AC/DC
- Industrial motor drives
- Solid State Relays

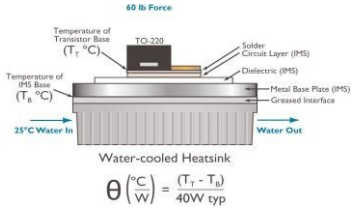
Configurations

Characteristics	SFRG-8
• Panel Size [mm]	500 x 600 etc.
• Prepreg Thickness [µm]	50,80,100,150 etc.
• Circuit [oz]	1,2,3 etc.



We provide custom solutions for your applications. For Further questions, please contact your local sales agent or directly TCLAD sales in your region.

Test Thermal Performance of Insulated Metal Substrate (IMS®) TO-220 Set-up



Item	Thickness	Unit	Value (Typ.)	Method
Thermal Properties				
Product Thermal Conductivity		W/m-K	7.6 *	TO-220 Method
Dielectric Thermal Conductivity		W/m-K	1.85	ASTM D5470
Thermal Resistance	100µm (4mil)	°C/W	0.09	ASTM D5470
Thermal Impedance	100µm (4mil)	°C/W	0.15	TO-220 Method
Electrical Properties				
Dielectric Constant		-	6.1	IPC-TM-650 2.5.5.9
Dissipation Factor	100µm (4mil)	1MHz	0.016	IPC-TM-650 2.5.5.9
Capacitance	100µm (4mil)	pF	20.8	IPC-TM-650 2.5.5.9
Volume Resistivity		Ω-cm	10^{13}	IPC-TM-650 2.5.17.1
Surface Resistivity		Ω/sq	10^{15}	IPC-TM-650 2.5.17.1
Breakdown Voltage		AC KV/mm	>30	ASTM D149
Mechanical Properties				
Color		-	Off-White	Visual
Peel Strength @ 25°C		Kg/cm (lbf/in)	1.4 (7.8)	ASTM D286
Glass Transition (Tg)		°C	150	ASTM E1356
CTE in X,Y/Z Axis <Tg		µm/m°C	28	ASTM D3386
CTE in X,Y/Z Axis >Tg		µm/m°C	35	ASTM D3386
Youngs Modulus		GPa	30	ASTM D638
Decomposition Temperature (2% loss)		°C	350	IPC TM-650 2.4.24.6
Decomposition Temperature (5% loss) °C		°C	400	IPC TM-650 2.4.24.6
Chemical Properties				
Water Vapor Retention		%	< 0.5	ASTM E595
Out-Gassing Total Mass Loss		%	< 0.1	ASTM E595
Collect Volatile Condensable Material		%	< 0.1	ASTM E595
Agency Ratings & Durability- UL: E121882				
UL Flammability		-	V-0	UL 94

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RoHS compliant