

SFR-12 Solvent Free Resin Coated Copper

Features & Benefits

- SFR-12 (Solvent Free Resin Coated Copper) is a type 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.
- SFR-12 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 SFR-12 TRC 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 SFR-12.

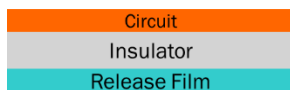
*Product thermal conductivity based on 2oz cu x 100µm SFR-12 x 1.5mm Al

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

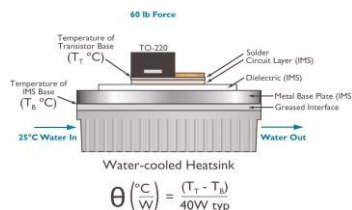
Configurations

Characteristics	SFR-12
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 inquiries, please contact your local sales agent or directly to 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	12 *	TO-220 Method
Dielectric Thermal Conductivity		W/m-K	3.2	ASTM D5470
Thermal Resistance	100µm (4mil)	°C/W	<0.08	ASTM D5470
Thermal Impedance	100µm (4mil)	°C/W	0.09	TO-220 Method
Electrical Properties				
Dielectric Constant		-	4.21	IPC-TM-650 2.5.5.9
Dissipation Factor	100µm (4mil)	1MHz	0.011	IPC-TM-650 2.5.5.9
Capacitance	100µm (4mil)	pF	38.1	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)	1.3 (7.2)	IPC TM-650 2.4.8
Glass Transition (Tg)		°C	150	IPC TM-650 2.4.25
CTE in X,Y/Z Axis <Tg		µm/m°C	15	IPC TM-650 2.4.25
CTE in X,Y/Z Axis >Tg		µm/m°C	18	IPC TM-650 2.4.25
Youngs Modulus		GPa	18	ASTM D638
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

