Technical Data

SFP-12 Solvent Free Prepreg

Features & Benefits

- SFP-12 (Solvent Free Prepreg) provides the advantage of high thermal conductivity and reliability. This Sem-finished material is good for single and multilayer thermal conductive printed circuit board applications.
- SFP-12 is a sandwich structure, which includes layers of upper release film, prepreg, and lower release film
- SFP-12 has no fiberglass which allows for improved thermal performance in layers where fiberglass reinforcement is not required.
- Excellent thermal conductivity
- High Electrical Strength
- Lead-free solder compatible
- RoHS compliant and environmentally green
- Available in rolls
- TCLAD TCP minimizes thermal impedance and conducts heat more efficiently than standard printed wiring boards (PWB's).
- The differentiating technology of Thermal Clad resides in the dielectric. This datasheet highlights the performance characteristics of TCLAD SFP-12.

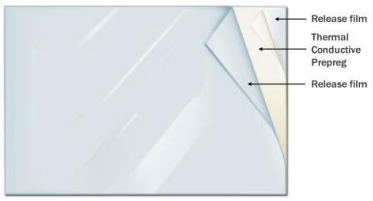
*Product thermal conductivity based on 2oz cu x 100µm SFP-8 x 1.5mm Al

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

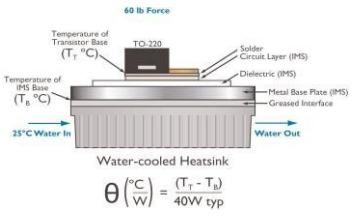
Configurations

Characteristics	SFP-12
Roll width [mm]	510,520 etc.
Prepreg Thickness [µm]	50,80,100,150 etc.
Release Film Thickness [µm]	50



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	12 *	TO-220
Dielectric Thermal Conductivity		W/m-K	3.2	ASTM D5470
Thermal Resistance	100µm (4mil)	°C/W	0.06	ASTM D5470
Thermal Impedance	100µm (4mil)	°C/W	0.08	TO-220
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		KVAC	>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
Decomposition Temperature (2% loss)		°C	370	IPC TM-650 2.4.24.6
Decomposition Temperature (5% loss)		°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

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