

Features & Benefits

- SFP-3 (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-3 is a sandwich structure, which includes layers of upper release film, prepreg, and lower release film
- SFP-3 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-3.

*Product thermal conductivity based on 2oz cu x 100µm SFP-3 x 1.5mm Al

Applications

- LED headlight & foglamps
- Other Applications where ceramic based components are used where improved solder joint reliability is required.

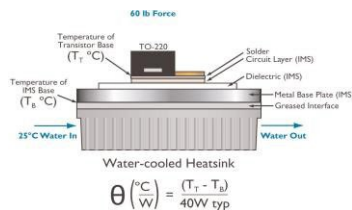
Configurations

Characteristics	SFP-3
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	3 *	TO-220
Dielectric Thermal Conductivity		W/m-K	1.7	ASTM D5470
Thermal Resistance	100µm (4mil)	°C/W	<0.12	ASTM D5470
Thermal Impedance	100µm (4mil)	°C/W	0.33	TO-220
Electrical Properties				
Dielectric Constant		-	4.4	IPC-TM-650 2.5.5.9
Dissipation Factor	100µm (4mil)	1MHz	0.171	IPC-TM-650 2.5.5.9
Capacitance	100µm (4mil)	pF	28.1	IPC-TM-650 2.5.5.9
Volume Resistivity		Ω-cm	10 ¹⁵	IPC-TM-650 2.5.17.1
Surface Resistivity		Ω/sq	10 ¹³	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 (lb/in)	1.4 (7.8)	IPC TM-650 2.4.8
Glass Transition (Tg)		°C	140	IPC TM-650 2.4.25
CTE in X,Y,Z Axis <Tg		µm/m°C	25	IPC TM-650 2.4.25
CTE in X,Y,Z Axis >Tg		µm/m°C	32	IPC TM-650 2.4.25
Decomposition Temperature (2% loss)		°C	350	IPC TM-650 2.4.24.6
Decomposition Temperature (5% loss)		°C	380	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

TCLAD

US sales.us@tclad.com
 APAC sales.asia@tclad.com
 Europe sales.eu@tclad.com
www.tclad.com



All statements, technical information and recommendations herein are based on tests we believe to be reliable, and THE FOLLOWING IS MADE IN LIEU OF ALL WARRANTIES OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MARKET ABILITY AND FITNESS FOR PURPOSE. Sellers' and manufacturers' only obligation shall be to replace such quantity of the product proved to be defective. Before use, user shall determine the suitability of the product for its intended use, and the user assumes all risk and liability whatsoever in connection therewith. NEITHER SELLER NOR MANUFACTURER SHALL BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY LOSS OR DAMAGE DIRECT, INCIDENTAL, OR CONSEQUENTIAL, INCLUDING LOSS OF PROFITS OR REVENUE ARISING OUT OF THE USE OR THE INABILITY TO USE THE PRODUCT. No statement, purchase order or recommendation by seller or purchaser not contained herein shall have any force or effect unless in an agreement signed by the officers of the seller and manufacturer. All marks used above are trademarks and/or registered trademarks of TCLAD Inc and its affiliates in the U.S., Germany and elsewhere. © 2021 TCLAD Inc. All rights reserved. US

