

Features & Benefits

- TSP is a kind of thermal interface material that has several advantages over traditional silicon-based materials
- Excellent Thermal Conductivity
- Low Thermal Resistance
- High Voltage Strength
- Easy to process
- Broad operating temperature
- Thermal curing at elevated temperature
- RoHS compliant, Halogen free & lead-free process
- Available in roll, sheet, or custom part form
- The insulator is made by a unique polymer composite that combine epoxy resin and high thermal conductivity filler. The thermal conductivity is much higher than the traditional silicone or epoxy filled glass fiber pads.
- The differentiating technology of TCLAD Thermal Interface Materials resides in the dielectric formulation. This datasheet highlights the performance characteristics of TCLAD TSP 3 & 8.

Applications

- Power Electronics
- Automotive
- Component to heatsink
- IMS PCB to heatsink
- LED module

Configurations

- Roll
- Sheet
- Custom piece part
- Packaging
- o Bulk
- o Tray
- \circ $\,$ Tape and Reel
- PET Release Film Thickness 50μm





		Technical	Data
--	--	-----------	------

TSP-3 / TSP-8 Thermal Set Pad

ltem	Thickness	Unit	Value Method					
Thermal Properties								
Thermal Condu	uctivity	W/m-K	3	8	TO-220			
Thermal Resistance	200µm (8mil)	°C-in²/W	0.21	0.15	ASTM D5470			
Electrical Properties								
Dielectric Constant		-	7.04	8.04	IPC- TM-650 2.5.5.3			
Dielectric Loss Tangent		-	0.0232	0.0294	IPC- TM-650 2.5.5.1			
Surface Resistance		Ω	1013	1013	IPC- TM-650 2.5.17.1			
Volume Resistivity		Ω-cm	1013	1013	IPC-TM-65 2.5.17.1			
Breakdown Voltage 200µm (8mil)		KVAC	>6	>6	JIS 2110 (Si oil)			
Mechanical Properties								
Color		-	Gray Visua		Visual			
Peel Strength @ 25°C		Kg/cm	>1.5	>1.5	JIS C 6481			
Hardness		Shore A	96	96	ASTM D- 2240A			
Density		g/cm ³	2.69	2.72	ASTM D792			
Flexibility		Radius, mm	I	I				
Chemical	Properties							
Water Absorpt	tion	% Wt.	<0.01	<0.01	IPC TM-650 2.6.2.1			
Out-Gassing Total Mass Loss		% Wt.	<0.1	<0.01	ASTM E595			
Collect Volatile Condensable Material		% Wt.	< 0.1	<0.1	ASTM E595			
Curing								
Curing temperature		°C	120	120				



TCLAD Inc. 1600 Orrin Rd, Prescott WI 54021 +1 715-5898 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 LUEU OF ALL WARRANTIES OR IMPLIED, INCLUDING THE IMPLIED WARRENTIES OF MARRET ABUITY AND FITNESS FOR PURPOSE. Sellers' and manufacturers' only obligation shall be to replace such quantity of the product proved to be defective. Before using, 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, INCEDENTAL, OR CONSEQUENCIAL, 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 ruless in an agreement signed by the officers of the seller and manufacturer. All marks used above are trademarks and/or registered trademarks of TCLAD lnc and its affiliates in the U.S., Germany and elsewhere. © 2021 TCLAD lnc. All rinbts reserved US

Made at our Taiwan or Kunshan China factory

Rev 2023 D20-001