

Features & Benefits

- Various range of Thermal Conductivity and Resistance
- High Voltage Breakdown
- Adhesive strength surfaces
- High temperature applications
- Proven Long term reliability
- Thermal Curing at elevated temperature
- RoHS compliant, Halogen free and lead-free process
- Non-silicone based with zero outgassing

Thermal Set Pad is an epoxy base thermal conductive and electrical isolating material (B stage) which requires heat curing that is ideal for high power density application.

Applications

- High power density applications which required low thermal resistance
- Industrial Motor, servo motor and EV motor
- LED modules
- Power Supplies and Semiconductors packaging
- Household appliances and consumer electronics

Configurations and Storage Conditions

The TSP family comes in 3 different thermal performance products:

TSP-3, TSP-8, TSP 12

- Refrigeration <10°C for 3 months from manufacturing date
 - Available in Rolls, Sheets, custom sizes.
 - Packaging in Bulk, Trays or Tape & Reel.

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



Property	Method (Units)	TSP-3 (Typ.)	TSP-8 (Typ.)	TSP-12 (Typ.)
Resin Base	Chemistry	Epoxy	Epoxy	Epoxy
Color	Visual	Gray	Gray	Gray
Hardness	ASTM D2240 (Shore A)	96	96	96
Thermal Conductivity	TO220 (W/mK)	3	8	12
Thermal Conductivity	ASTM D5470 (W/mK)	1.5	2.5	3.0
Thermal Resistance	ASTM D5470 (°C/W)	0.11 (100 μm)	0.08 (100 μm)	0.05 (100 μm)
		0.18 (160 μm)	0.12 (160 μm)	0.08 (160 μm)
		0.21 (200 μm)	0.15 (200 μm)	0.10 (200 μm)
Density	ASTM D792 (g/cm3)	2.69	2.72	3.22
Operating Temperature Range	- (°C)	-40°C to 150°C	-40°C to 150°C	-40°C to 150°C
Breakdown Voltage	ASTM D149 JIS C2110 (AC KV/mm)	20	20	20
Dielectric Constant	IPC-TM-6502.5.5.1	7.04	8.04	8.4
Dielectric Loss Tangent	IPC-TM-6502.5.5.1	0.0232	0.0294	0.0170
Volume Resistivity	IPC-TM-6502.5.17.1 (Ω.cm)	1 x 10 ¹³	1 x 10 ¹³	1 x 10 ¹³
Peel Strength	JIS C6481 (Kgf/cm)	>1.2	>1.2	>1.2
Curing Temperature (Pre-cure if needed)	120 °C	5 min	5 min	5 min
Curing Temperature (Fully cure)	@ 80 °C	4 Hours	4 Hours	4 Hours
	@ 100~ 120 °C	1 Hour	1 Hour	1 Hour
	@ 200 °C	3 min	3 min	3 min
Shelf Life	Storage Temp <10°C (months)	3	3	3
Flame Rating	UL	E541520	E541520	TBD

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