POLYIMIDE FILM/PHASE CHANGE TPC-N-PI

phase change coating, highly dielectric

TPC-N-PI is a thermally conductive film with an electrically insulator made of Devinall TH Polyimide which is coated with a thermally conductive phase changing compound on both sides thus optimising the thermal path e.g. between electronic packages and heat sinks. During warm-up the phase change coating starts filling up surface-specific roughnesses and unevenesses and expels any air enclosures from micro structures even at low pressure. The wettening of the contact areas is further on improved by volumetric material expansion of approximately 10 to 15% at increasing temperature. Thus the total thermal resistance is minimised. The material is characterised by its very high dielectric properties.

Release 03 / 2020

Technical Data Sheet

PROPERTIES

- Optimal thermal contact
- High dielectric strength
- Silicone-free
- No dry up, pump-out migration
- No run-out through thixotropic properties
- Process reliable coating thickness
- Ideal replacement of messy thermal grease

AVAILABILITY

- Sheet 305 x 495 / 610 x 495 mm
- Roll 495 mm x 152 m
- Non tacky (TPC-NXXX-PI)
- Tacky on one side with PSA (TPC-NXXX-PI-A1)
- With adhesive strips on request
- Thicker phase coating (25 µm)
- Die cut parts
- Kiss cut parts

APPLICATION EXAMPLES

Thermal link of:

- MOSFETs or IGBTs
- Diodes
- A.C. converter
- Uninsulated power modules

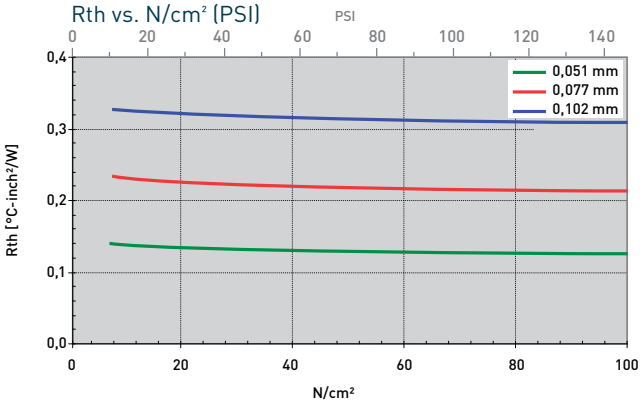
For use in Automotive motor control units / Power supplies / Traction drives / Telecom appliances

PROPERTY	UNIT	TPC-N051-PI	TPC-N077-PI	TPC-N102-PI
MATERIAL		Devinall TH Polyimide film with phase change coating on both sides	Devinall TH Polyimide film with phase change coating on both sides	Devinall TH Polyimide film with phase change coating on both sides
Colour		Light orange	Light orange	Light orange
Thickness Devinall TH	µm	25 ±4	51 ±8	77 ±12
Thickness Phase Change (per side)	µm	13	13	13
Total Thickness	µm	51	77	102
Tensile Strength	kpsi	19.7	19.7	19.7
UL Flammability Devinall TH (Equivalent)	UL 94	V0	V0	V0
RoHS Conformity	2015/863/EU	Yes	Yes	Yes
THERMAL				
Resistance[1] @ 150 PSI	°C-inch²/W	0.126	0.215	0.311
Resistance[1] @ 30 PSI	°C-inch²/W	0.130	0.220	0.315
Resistance[1] @ 10 PSI	°C-inch²/W	0.143	0.237	0.332
Thermal Conductivity Devinall TH	W/mK	0.36	0.36	0.36
Phase Change Temperature	°C	ca. 60	ca. 60	ca. 60
ELECTRICAL				
Breakdown Voltage	kV AC	5.4	9.0	13.5
Volume Resistivity	Ohm - cm	1.0×10^{16}	1.0×10^{16}	1.0×10^{16}
Dielectric Constant	@ 25°C	4.0	4.0	4.0

Measurement technique according to: [1] ASTM D 5470. All data without warrenty and subject to change. Please contact us for further data and information.
Shelf life adhesive: 6 months when stored in original packaging at room temperature and 50% relative humidity.

Thicknesses: Devinall TH Polyimide: 25 µm / 51 µm / 76 µm. Total Thicknessess: 51 µm / 77 µm / 102 µm

Rth vs. N/cm² (PSI)



HALA Contec GmbH & Co. KG / Hans-Böckler-Straße 15 / D-73230 Kirchheim u.T. / Fon +49 7021 73141-0 / Fax +49 7021 73141-99 / contec@hala-tec.de / www.hala-tec.de