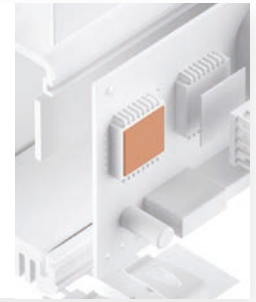


# POLYIMIDE FILM/PHASE CHANGE TPC-N-PI HALA

phase change coating, highly dielectric

TPC-N-PI is a thermally conductive film with an electrically insulator made of Devinal 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 unevennesses and expels any air enclosures from micro structures even at low pressure. The wetting 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

### 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

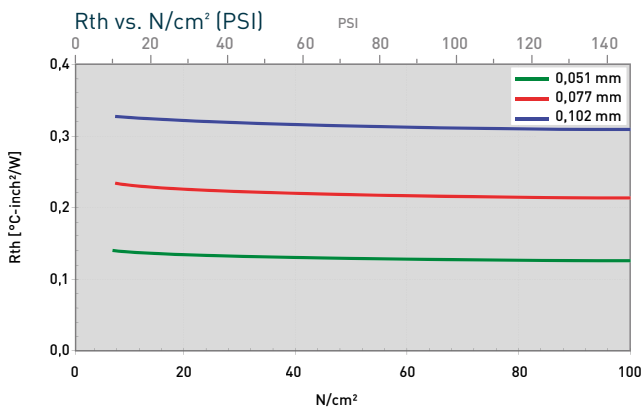
- Thermal link of:
- MOSFETs or IGBTs
  - Diodes
  - A.C. converter
  - Uninsulated power modules
- For use in Automotive motor control units / Power supplies / Trac-tion drives / Telecom appliances

Technical Data Sheet

PROPERTY	UNIT	TPC-N051-PI	TPC-N077-PI	TPC-N102-PI
<b>MATERIAL</b>				
Colour		Light orange	Light orange	Light orange
Thickness Devinal TH	µm	25 <sup>+0.06</sup> / <sub>-0.05</sub>	51 <sup>+0.09</sup> / <sub>-0.07</sub>	76 <sup>+0.11</sup> / <sub>-0.09</sub>
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 Devinal TH (Equivalent)	UL 94	V0	V0	V0
RoHS Conformity	2015/863/EU	Yes	Yes	Yes
<b>THERMAL</b>				
Resistance <sup>1</sup> @ 150 PSI	°C-inch <sup>2</sup> /W	0.126	0.215	0.311
Resistance <sup>1</sup> @ 30 PSI	°C-inch <sup>2</sup> /W	0.130	0.220	0.315
Resistance <sup>1</sup> @ 10 PSI	°C-inch <sup>2</sup> /W	0.143	0.237	0.332
Thermal Conductivity Devinal TH	W/mK	0.36	0.36	0.36
Phase Change Temperature	°C	ca. 60	ca. 60	ca. 60
<b>ELECTRICAL</b>				
Breakdown Voltage	kV AC	5.4	9.0	13.5
Volume Resistivity	Ohm - cm	1.0 x 10 <sup>16</sup>	1.0 x 10 <sup>16</sup>	1.0 x 10 <sup>16</sup>
Dielectric Constant	@ 25°C	4.0	4.0	4.0

Measurement technique according to: ASTM D 5470. All data without warranty 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: Devinal TH Polyimide: 25 µm / 51 µm / 76 µm. Total Thicknesses: 51 µm / 77 µm / 102 µm



All technical data and information are without warranty and believed to be reliable and accurate, corresponding to the latest state of the art. Since the products are not provided to conform with mutually agreed specifications and their use and processing are unknown we cannot guarantee results, freedom from patent infringement, or their suitability for any application. Product testing by the applicant is recommended. We reserve the right of changes.