

PRODUCT DESCRIPTION

The Tgard™ K3000 series are die-cut parts of a high thermal and dielectric performance material. This product consists of DuPont™ Kapton® polyimide film of a specified thickness with the option to have an adhesive laminated to one side, ensuring sufficient tackiness on mating surfaces between the heating components and the heatsink.

This product line is designed as a thermal conductivity film with superior electrical insulation and mechanical toughness characteristics combination for suitable use in Battery Systems, Power Electronics, eMobility Infrastructure and other automotive applications.

FEATURES & BENEFITS

- High thermal conductivity film
- High breakdown voltage range
- Resistant to tears and punctures
- Superior electrical insulation

APPLICATION

- Automotive electronics
- Power conversion equipment
- Power module and electronics
- Battery charger and systems

PROPERTY	TEST METHOD	Tgard™ K3038	Tgard™ K3050	Tgard™ K3075
Typical Physical Properties				
Dielectric Breakdown Voltage* ¹ Probe 50mm AC	ASTM D149	6000 volts AC	6000 volts AC	8000 volts AC
Volume resistivity (ohm-cm)	ASTM D257	>10 ¹⁵	>10 ¹⁵	>10 ¹⁵
Dielectric constant @20GHz	ASTM D150	4.0	4.0	4.0
UL flammability rating (film)	UL 94	V0	V0	V0
Thermal Resistance (@50Psi) A0; °C-in ² /W (uncoated)* ²	ASTMD5470	0.25	0.40	0.44
Thermal Resistance (@50Psi) A0; °C-in ² /W (coated)	ASTMD5470	0.06	0.09	0.12
Thermal Resistance (@50psi) A1; °C-in ² /W (uncoated)	ASTM D5470	0.67	0.69	0.73
Operation temperature * ³ With Adhesive	Laird	-40°C to 125°C	-40°C to 125°C	-40°C to 125°C
Film Thickness mil (micron)	Laird	1.5(38)	2(50)	3(75)
Total Thickness (mm) with adhesive ± 15%	Laird	0.09	0.105	0.130
Peel strength* ⁴ 180°(gf/25mm)	Laird Modified	1500	1700	2000

*1 DBV: A1 version ; Ramp 20 sec, Probe 50 mm, Hi-Limit: 5mA, dwell time: 0.5s.

*2 Rth test at uncoated surface of tester.

*3 Measured with adhesive laminated standard parts ; Contact local site for special adhesive

*4 Adhesion test : Adhesive laminated product ; Peel speed 300mm/ min

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www.laird.com



Configurations available:

Die-cut parts and roll form with adhesive laminated

Standard options:

Request no adhesive with “A0” suffix. Request adhesive on one side with “A1” suffix. Double-sided adhesive is not available.

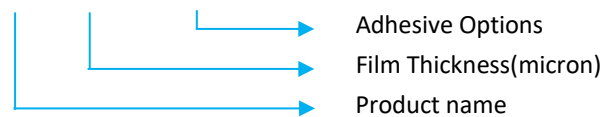
Standard product is to use acrylic based adhesive to aid in the assembly process not a structural adhesive meant to bond two surfaces.

Please contact the regional manufacturing site for your special options.

Data for design engineer guidance only. Observed performance varies in application. Engineers are reminded to evaluate the material in application

Product Part Number System

Tgard 30XX , A0 or A1 options, Total Thickness, die cut size



Example 1: Tgard™ K3050 A0 = 50 micron film thick Tgard™ K3000 product

Example 2: Tgard™ K3075 A1, 0.105 mm, 27*6 mm = 75 micron film thick Tgard™ K3000 product with one side adhesive , 0.105 mm thickness , size 27mm *6 mm

Storage condition

Store in dry and less humidity conditions (0°-35°C ; <75%RH)

Shelf-life

12 months from the date of product shipment when stored at above conditions