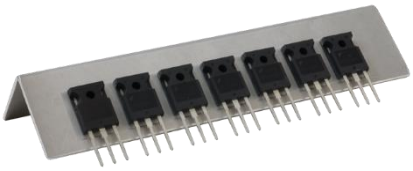
Tgard™ TNC-4
Thermally Conductive Insulators



HIGH THERMAL AND DIELECTRIC PERFORMANCE INSULATOR

Tgard™ TNC-4 is an electrically insulating, thermally conductive, heat curable adhesive insulator. It consists of a thin electrically insulating PI film coated on both sides with a thermally conductive polymer composite material. It can be used to permanently attach IC or other electronic packages to heatsink.

FEATURES AND BENEFITS

- Eliminates mechanical fasteners
- Provides more consistent thermal performance
- Allows for tighter component location with power supply

APPLICATIONS

- Automotive Electronics
- Power modules
- Switching mode power supplies

PROPERTY	TEST METHOD	TYPICAL VALUES
Post-cured Breakdown Voltage(VAC)	ASTM D149	6000
Post-cured Thermal Resistance °Cin²/W	ASTM D5470 Modified	< 0.3
Thickness inch(mm)		0.005(0.127)
Post-cured Lap Shear	ASTM D3163 Modified	> 600 psi
Color	Visual	Black
Operating Temperature		-60°C to 180°C

USA: +1.866.928.8181

Europe: +49.8031.24600

Asia: +86.755.2714.1166

www.laird.com

THR-DS-Tgard-TNC4 011725

Tgard™ TNC-4
Thermally Conductive Insulators

APPLICATION PROCEDURE


Fig. 1

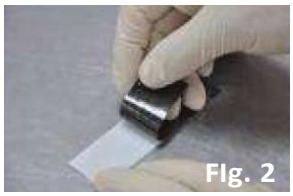


Fig. 2


Fig. 3

1. Clean bonding surface with alcohol or other solvents and make heat-sink clean (Fig. 1).

2. Peel off one liner from the TNC-4 adhesive tape (Fig 2). Place the TNC-4 on heatsink surface and peel off the other side liner, then put the parts at 100°C for 5 minutes as pre-curing (Fig .3) . Please note the whole assembly process should be done within 12 hours after pre curing .

3. Taken out the parts from oven to cool down and then place the TO component on TNC exposed side (Fig4) . During cooling down process, should avoid contamination of the TNC surface.

4. Cure the assembly with 25 psi-35psi pressures (Figure 5) at 150°C for 20 minutes or more minutes . Time is at least 20 minutes when part temp is above at 150°C and can shorten curing time at higher temperature , During curing process, the assembly should be on a horizontal and flat surface and IC parts should be up towards . And the Assembly could not be slanting during the curing process and before being cooled down. , using pressure pads/foams to apply pressure uniformly on both sides (Fig. 6).

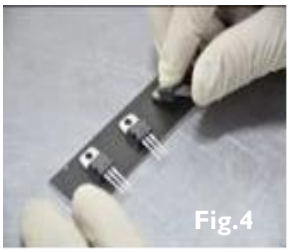


Fig.4


Fig.5

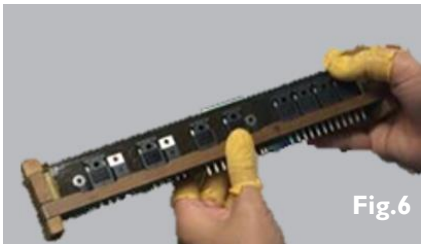
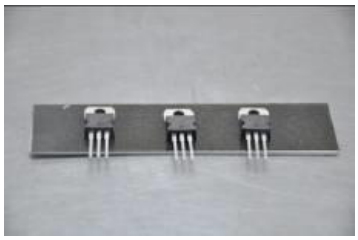
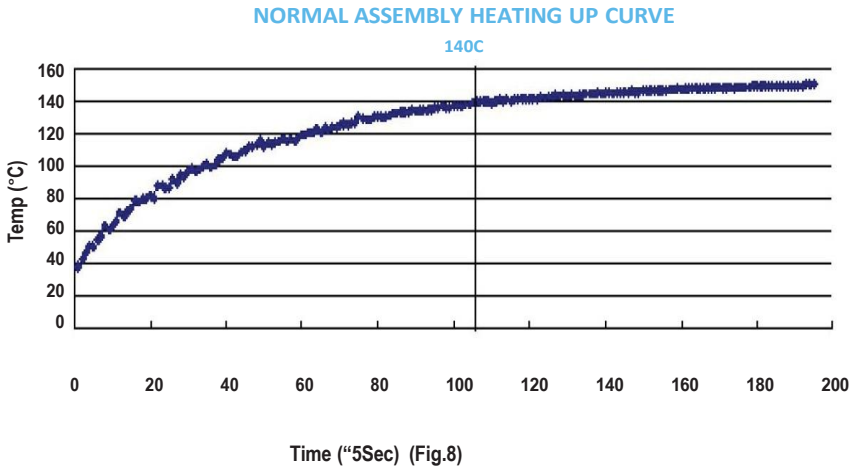


Fig.6

5. The Assembly could not be slanting during the curing process and before being cooled down. Normally heating up curve of assembly (3 components on aluminum heatsink, one piece, based on normal heating oven.)(Fig.7) is shown in the chart below(Fig.8). Please select your heating curve according to your assemblies.





Storage & Delivery

The storage and transportation temperature should be controlled below 5°C to 25°C with 5 months shelf-life from date of manufacture .

Before use, the material need thaw back to room temperature if store at cool condition.

USA: +1.866.928.8181

Europe: +49.8031.24600

Asia: +86.755.2714.1166

www.laird.com