

### LOW COST, MEDIUM PERFORMANCE INSULATOR MATERIAL

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.

### APPLICATIONS

- Permanently bonding cooling devices such as heat sinks to electronic components

PROPERTY	TEST METHOD	TYPICAL VALUES
Post-cured Breakdown Voltage	VAC ASTM D149	6000
Post-cured Thermal Resistance °Cin <sup>2</sup> /W	ASTM D5470 Modified	< 0.3
Thickness inch(mm)		0.005(0.125)
Post-cured Lap Shear	ASTM D3163 Modified	> 600 psi
Color	Visual	Black

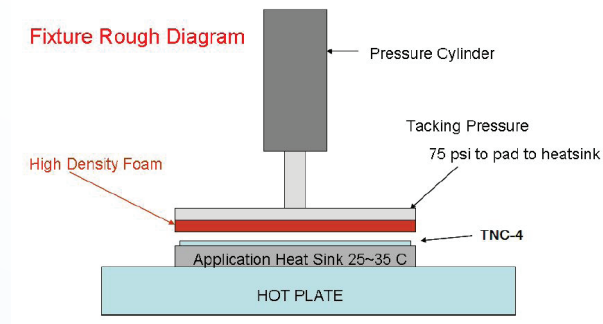
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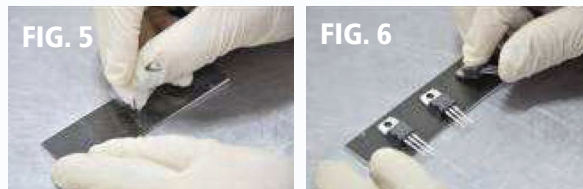
### APPLICATION PROCEDURE

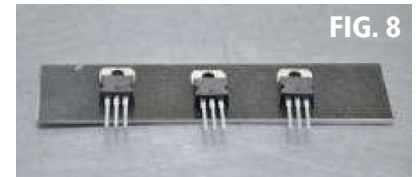
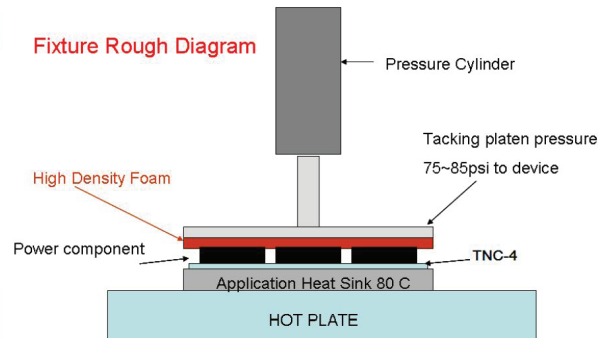


1. Clean bonding surface with alcohol or other solvents and make it clean (Fig. 1).
2. Peel off one liner from the TNC-4 adhesive tape (Fig 2). Place the TNC-4 on heatsink surface (Fig 3).
3. Apply 75 psi pressures for 10 seconds at 25-35°C, using pressure pads/foams to apply pressure uniformly on both sides (Fig. 4). Then Peel off the other liner (Fig. 5). component on the top of TNC-4/heat sink assembly (Fig. 6). Apply 75~85psi over 15 seconds, use pressure pads/foams to apply pressure uniformly on both sides (Fig. 7).



**FIG. 4**

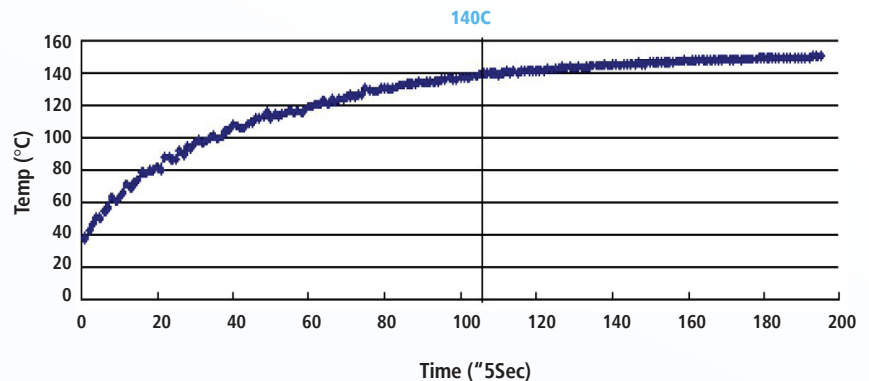




**FIG. 7**

4. Cure the assembly at 150°C for 6 minutes or more minutes. Time is at least 6 minutes when part temp is above 140°C. Choose the curing conditions according to actual products and heat oven conditions. During curing process, the assembly should be on a horizontal and flat surface and IC parts should be up towards (Fig. 8). And 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.) is shown in the chart below. Please select your heating curve according to your assemblies.

### NORMAL ASSEMBLY HEATING UP CURVE



Shelf life : Six months at room temperature (<25C)

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