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## SUBJECT: RECOMMENDATION of THERMAL COMPOUND APPLYING METHOD for RA series RoHS COMPLIANCE PRODUCTS

### GENERAL:

In order to keep high reliability of the equipment, it is better to keep the module temperature low. The case temperature of the module is recommended to keep lower than 90 deg. C under all conditions, and to keep lower than 60 deg. C under standard conditions.

Therefore, when the module is mounted onto a heat sink of equipment, thermal compound to get heat sinking should be applied between the module's fin and the heat sink. Following thermal compound is recommended. "G746 Shinetsu Chemical Industry Co., Ltd." or equivalent.

This Application note shows the applying method of thermal compound to MITSUBISHI RA series RoHS compliance products.

Please note, this method is only general recommendation. Each user can apply thermal compound by using each applying method as equivalent as ours.

### 1. Apply the Suitable Amount of Thermal Compound.

Apply thermal compound to the backside of module flange or mounted area of module on the chassis. Control the amount of compound for each module package size by using "screen mask" or alternative. (see following table)

| Package type | Flange size (mm) | Minimum amount of compound (mm <sup>3</sup> ) |
|--------------|------------------|---|
| H46S         | 30 x 7.4         | 15  |
| H11S         | 60.5 x 11        | 100   |
| H2S          | 66 x 17          | 120   |
| H2M          | 66 x 17          | 70  |

Examples of applying thermal compound

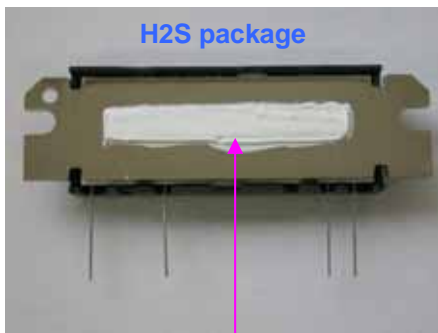


Thermal compound size:  
L10 x W3.0 x t 0.5mm

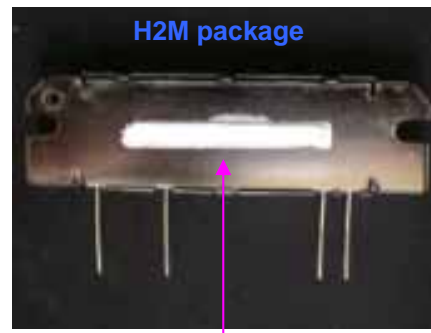


Thermal compound size:  
L40 x W5.0 x t 0.5mm

## Recommendation of Thermal Compound Applying Method for RA series AN-GEN-042-C



Thermal compound size:  
L40 x W6.0 x t 0.5mm



Thermal compound size:  
L35 x W4.0 x t 0.5mm

### 2. Tighten the Screw Alternately.

Mounting the modules should be given careful instruction and their procedures monitored at regular intervals. Since the flanges are punched from a roll of material, there can sometimes be a small “roll – up” at the end of the mounting flange. If the mounting hardware were tightened completely at one end first, it is easy to see that the other end could be “lifted” off the mounting surface well in excess of the allowable flange bending tolerance. And this method will also occur uneven thickness of thermal compound. This should be avoided by first lightly alternately snubbing down the mounting hardware “finger-tight.” Next, the hardware can be torqued to its final specification again in at least to sequential steps.

### 3. Keep the Pasted Area.

To get good (lower) thermal resistance between flange and chassis, pasted area of thermal compound should be keep more than 80% of dented area on back side of the flange. Please check the figure of thermal compound on the flange after tightened to chassis.

Examples of thermal compound figure

