MTP Series Mounting Instructions

Proper mounting and exchanger surface preparation are generally very important to optimize the heat transfer from module to heatsink. The following procedure is recommended.

Heatsink Preparation

The contact surface of the heatsink must be flat, with a recommended tolerance of < 0.03mm (1.18 mil) and a leveling depth of < 0.02mm (0.79 mil), according to DIN/ISO 1302. In general, a milled or machined surface is satisfactory if prepared with tools in good working condition. The heatsink mounting surface must be clean, with no dirt, corrosion, or surface oxides. It is very important to keep the mounting surface free from particles exceeding in thickness 0.05mm (2 mils), provided thermal compound is used

Visual Inspection

Inspect the power module to insure that the contact surface of the base is clean, that there are no lumps or bulges on the base plate that could damage the base or reduce heat transfer across the surfaces.

Thermal Compound

Coat uniformly the heatsink mounting surfaces and power module base plate with a good quality thermal compound. Screen printing of the compound is recommended. Data sheet's thermal resistance refers to a 0.1mm thick, uniform layer of thermal compound. The thermal conductivity of the compound should not be less than 1.5 W/mK. Apply uniform pressure on the package to force the compound to spread over the entire contact area.

Module Fastening

Bolt the module to the heatsink using the two fixing holes. An even amount of torque should be applied for each individual mounting screw. M4 screws should be used with lock washers. A torque wrench, accurate in the specified range, must be used in mounting module, in order to achieve optimum results. The first mounting screw should be tightened to one third of the recommended torque, the second screw should then be tightened to the same torque. Full tightening of both of the screws can then be completed applying the recommended torque (please see in the Data Sheet). Over tightening the mounting screws may lead to deformation of the package, which would hence increase the thermal resistance and damage the semiconductors. After a period of about 3 hours, check the torque with a final tightening in opposite sequence to allow the spread of the compound.