Mounting Recommendations for RCEC 500, RCEC 750, and RCMC Resistors

By Benjamin Larcher

ASSEMBLY DIAGRAM

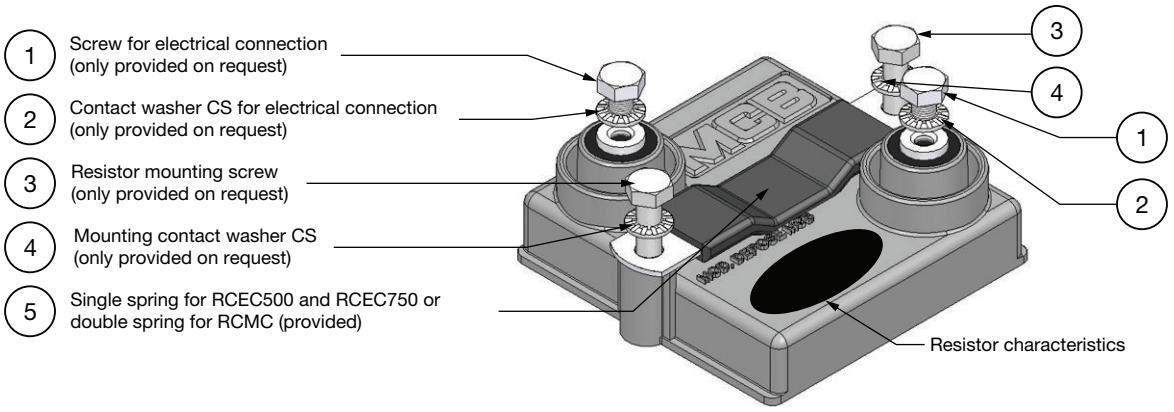

Fig. 1

MECHANICAL INTERFACE SET UP

Make sure that the dissipation area of the heatsink has been properly set up to ensure expected performances. The maximum flatness defect must not exceed 0.05 mm. The interface between the heatsink and the resistor has to be free of any holes, scratches, flaws, or foreign objects. Heatsink contact surface roughness has to be less than Ra 6.3 µm.

Mount the resistor on the heatsink following operations 1, 2, 3, and 4.

OPERATION 1

Clean both the heatsink (Fig. 2) and the resistor (Fig. 3) with an ethanol-soaked wipe.

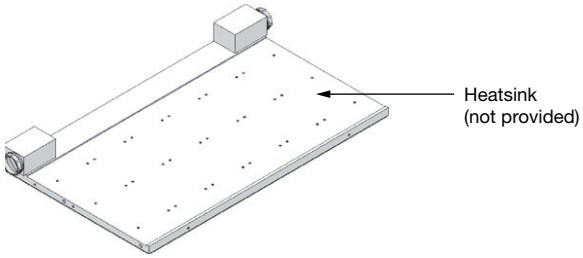

Fig. 2

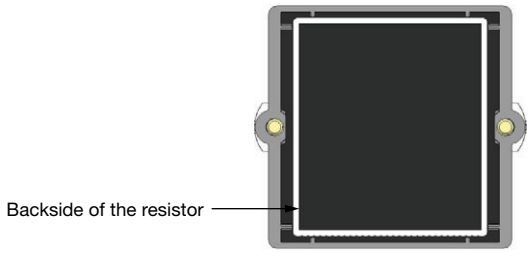

Fig. 3

APPLICATION NOTE

For technical questions, contact: mcbfixedresistors@vishay.com

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OPERATION 2

Use a thermal interface material, such as a thermal paste, between the heatsink and resistor to ensure proper power dissipation. A thermal interface material thickness of 0.05 mm max. and thermal resistance ≤ 0.025 °C/W are required. In order to manage this step correctly, apply some thermal paste on the backside of the resistor (Fig. 4). Take care to keep a 90° angle (Fig. 5) between the backside surface of the resistor and the plastic squeegee (Fig. 6).

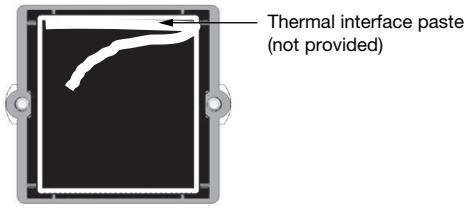


Fig. 4

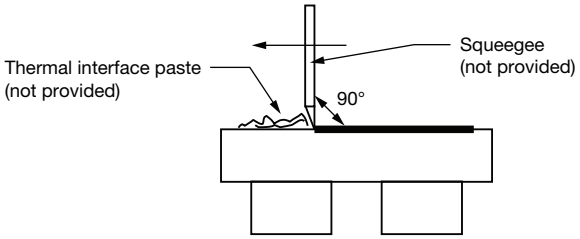


Fig. 5

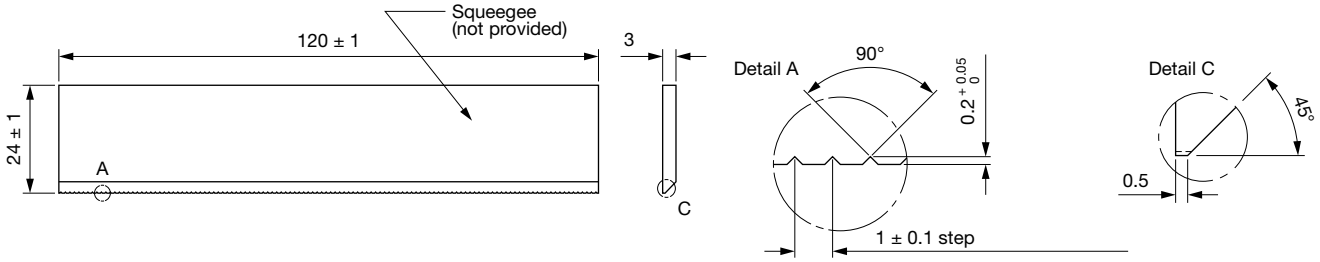
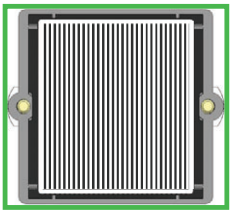


Fig. 6

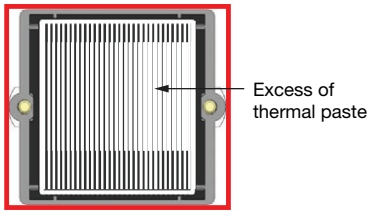
OPERATION 3

Check that the active area of the resistor has been fully covered up with thermal interface material (Fig. 7). Avoid any excess (Fig. 8) or lack of thermal paste on the active area (Fig. 9).



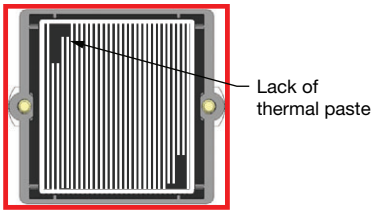
OK

Fig. 7



NOT OK

Fig. 8



NOT OK

Fig. 9

OPERATION 4

Transmit a rotational movement of ± 5° to 10° (Fig. 10) to the resistor after putting it on the heatsink.

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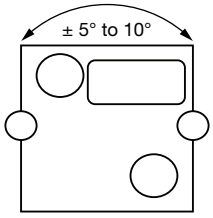


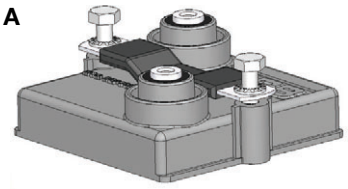
Fig. 10

You must use the following equipment (Fig. 1):

- M4 x 25 mm resistor mounting screws, minimum advised screw length, 2 x (3)
- M4 mounting contact washers CS, 2 x (4)
- Double / single spring supplied by Vishay MCB, 1 x (5)

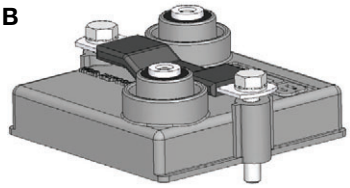
Make sure that the threading depth matches with the used screws (step A). Apply a preliminary hand tightening on each screw (3) until they touch the spring (5) (step B). Then apply the nominal tightening torque of 2 Nm (step C).

Step A



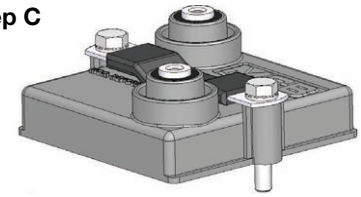
Before hand tightening

Step B



After hand tightening

Step C



After nominal torque tightening

ELECTRICAL INTERFACE SET UP

You must use the following equipment (Fig. 1):

- M4 / M5 x 6 mm screws for electrical connection, minimum advised screw length, 2 x (1)
- Contact washers CS for electrical connection, 2 x (2)

Apply a nominal tightening torque of 2 Nm on the electrical connections.

APPLICATION NOTE