

APPLICATION NOTE

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Mounting instructions 62mm C-series

IGBT - modules half-bridges and single switches

1. Heat sink

The mounting surface must be clean and free of particles.

Flatness $\leq 25\mu\text{m}$ on a length of 100 mm

This applies as well for mounted modules.

Roughness $R_z \leq 10\mu\text{m}$

2. Thermal compound

Apply approx. 100 μm layer of thermal grease to the module base plate or to the heat sink.

While fastening the module, a rim of thermal compound must be observed around the mounted module.

3. Module mounting

Fixing sequence

- fix all screws 0,5Nm (by hand)
- apply prescribed torque (3 - 6Nm) crosswise

recommended screws

M6 x 16 – 8.8 (at least 6.8)

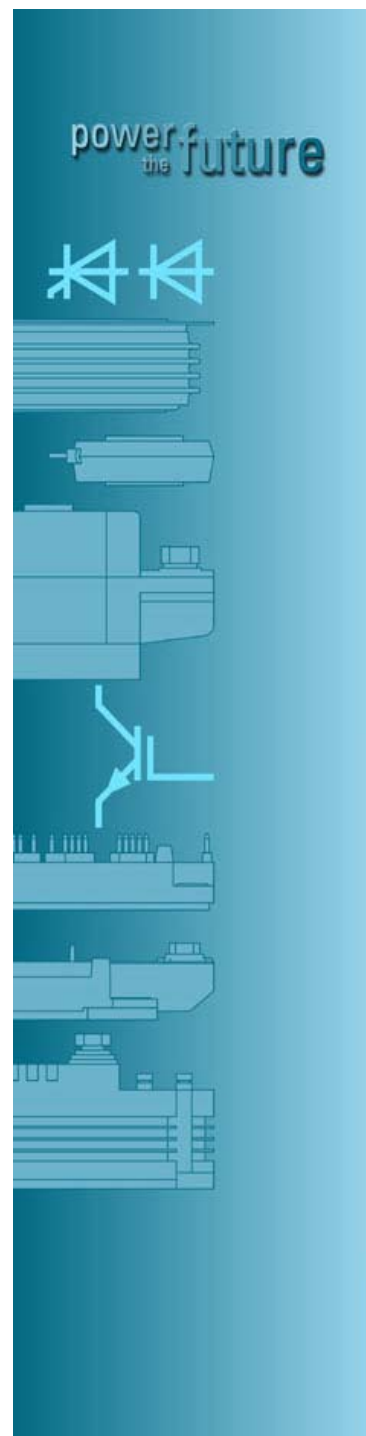
e.g. acc. DIN 84; 912, 6912, 7984, 7985 with flat washer or as a tapping screw assembly as per DIN 6900

A flat washer should be used always !

Tabelle 5.1 Tightening torque modul mounting

	modultyp	screw	torque M [Nm]
1	62mm C-Serie half-bridge	M6	min 3 – max 6
2	62mm C-Serie single switch	M6	min 3 – max 6

Torque of the screws in the thread of the aluminium heat sink with a coefficient of friction of $\mu=0,25$.



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4. Module assembly – Electrical connection

Busbar or laminated busbar assembly

must be within the height tolerance of the module.

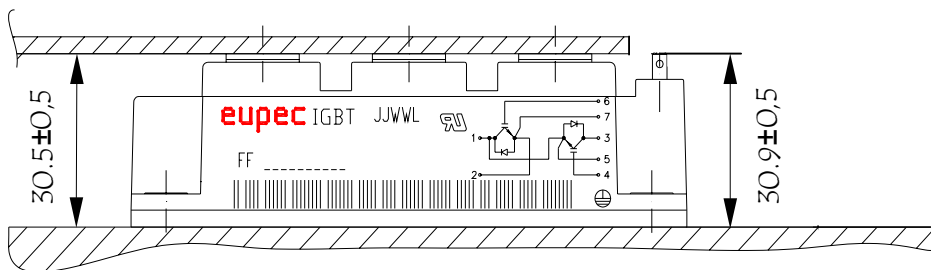


Bild 3.1 halfbridge

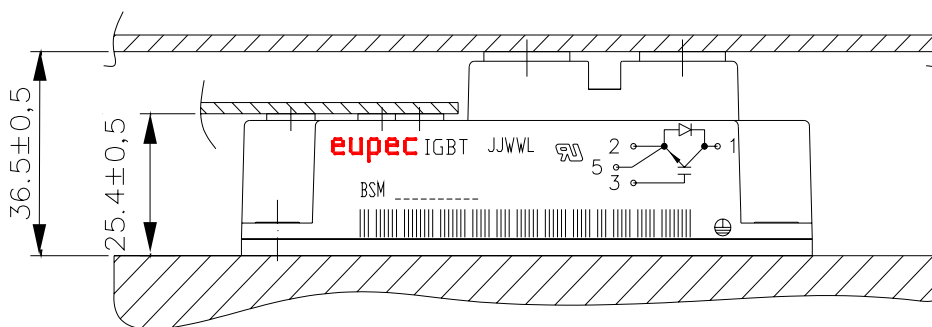
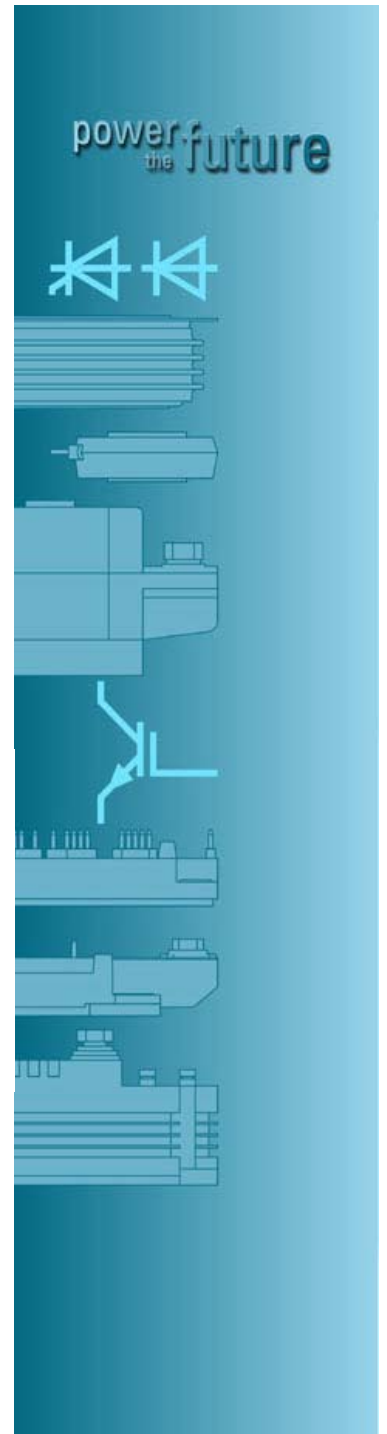


Bild 3.2 single switch



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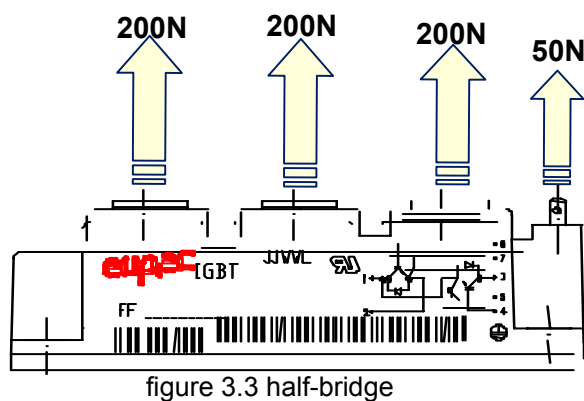
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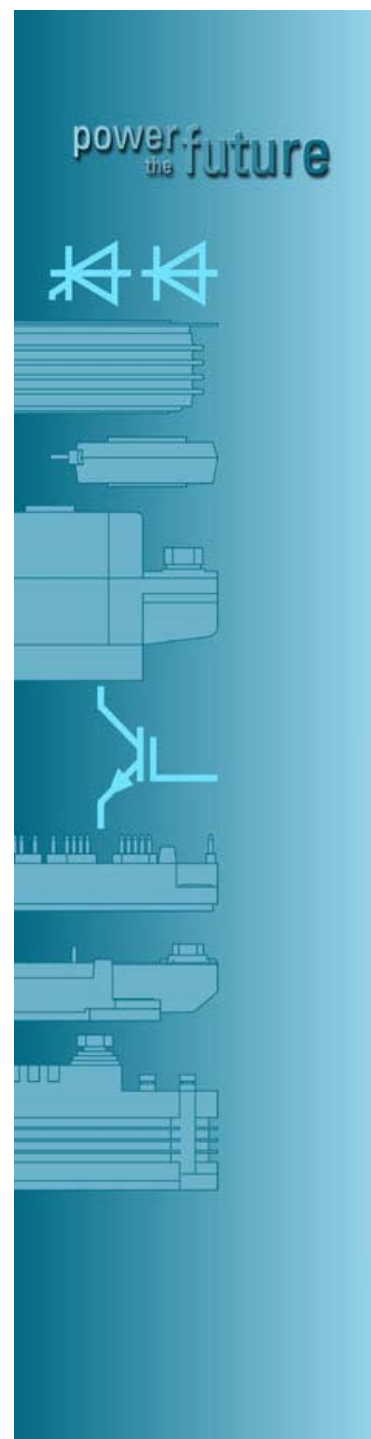
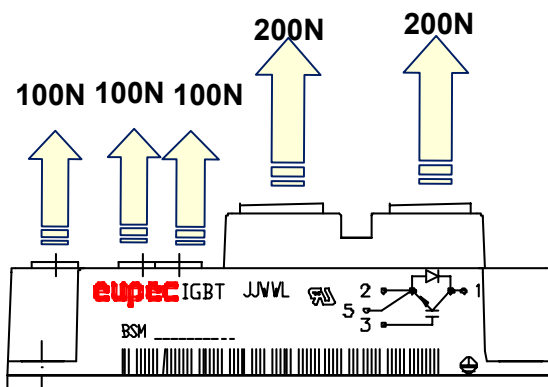
Connection pull forces

cabel (single, nontension)

half-bridge modules must be mounted in such way that the resulting pull forces per power terminal of the module are limited to **200N** and the resulting pull forces per control terminal of the module are limited to **50N**.



single switch modules must be mounted in such way that the resulting pull forces per power terminal of the module are limited to **200N** and the resulting pull forces per control terminal of the module are limited to **100N**.



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Connection push forces

cabel (single, nontension)

half-bridge modules must to be mounted in such way that the resulting push forces per power terminal of the module are limited to **100N**.

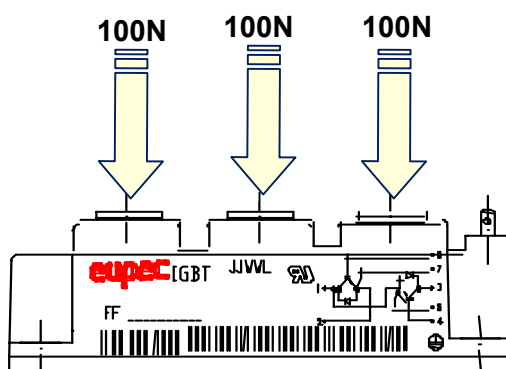


figure 3.5 half-bridge

single switch modules must to be mounted in such way that the resulting push forces per power terminal and per control terminal of the module are limited to **200N**.

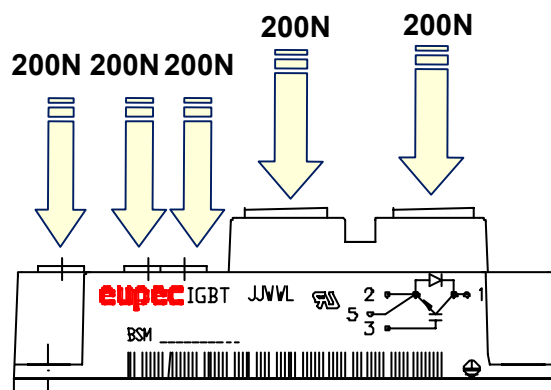
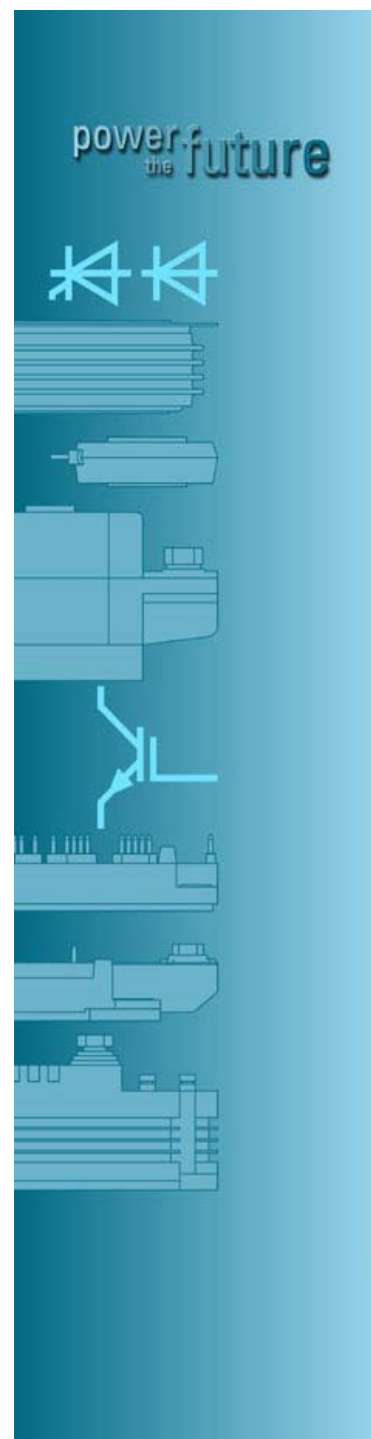


figure 3.6 single switch



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Screws / Plugs

Power terminals:

Screws **M6 x XX – 8.8** (at least 6.8) **e.g.** acc. to DIN 84; 912, 6912, 7984, 7985 with flat washer or as a tapping screw assembly as per DIN 6900

Control terminals:

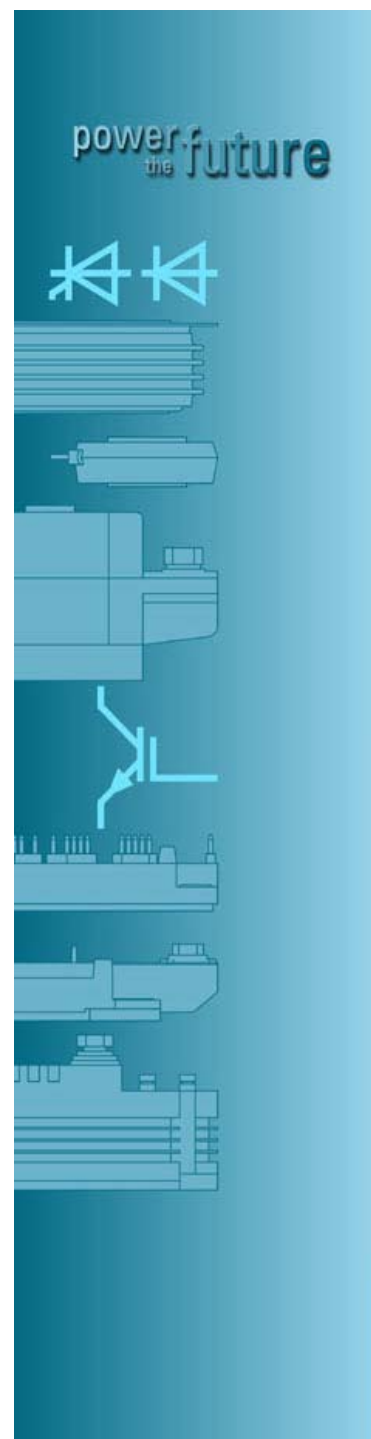
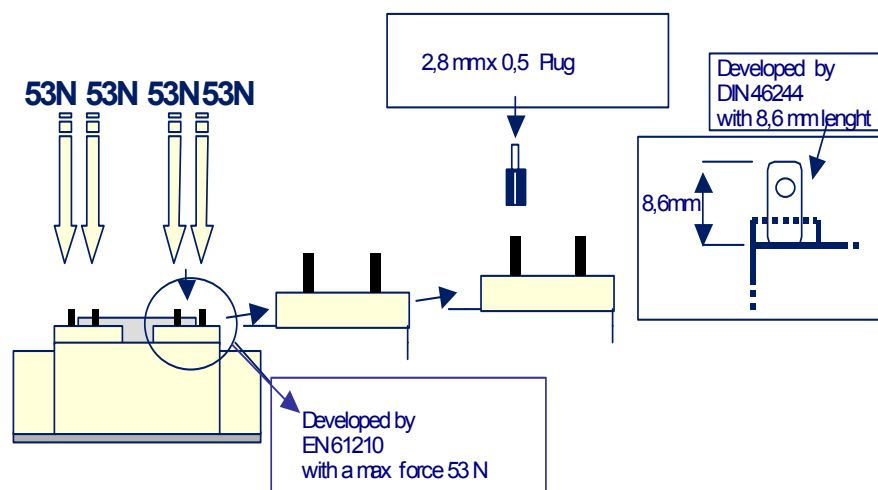
Screws (single switch) **M4 x XX – 8.8** (at least 6.8) **e.g.** acc. to DIN 84; 912, 6912, 7984, 7985 with flat washer or as a tapping screw assembly as per DIN 6900

XX thread length to be selected in accordance with the thickness of the connection leads. Pay attention to max. mounting depth **10mm** or **8mm**; see module outline (data sheet).

Control terminal (half bridge) :

Plug acc. to **DIN 46244 –A 2,8–0,5–Bz** with 8,6mm length.

Control connection plugs with **53N** max. attaching force per module single plug.



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Tabelle 4.1: Thightening torque electrical connections

	Module type	connection	screw	torque M [Nm]
1	62mm C-Serie half-bridge	power..	M6	2,5 - 5
2	62mm C-Serie half-bridge ..B2	power..	M5	2,5 - 5
3	62mm C-Serie single switch	power..	M6	2,5 - 5
4	62mm C-Serie single switch	control..	M4	1,1 - 2

Torque of the screws in the thread of the electrical connection terminals with a coefficient of friction of $\mu=0,15$.

