# SKKT 250, SKKH 250



**SEMIPACK® 3**

## Thyristor / Diode Modules

**SKKH 250**

**SKKT 250**

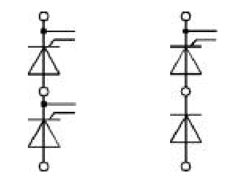
### Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

### Typical Applications*

- DC motor control (e. g. for machine tools)
- AC motor starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instructions



SKKT SKKH

| $V_{RSM}$ V | $V_{RRM}$, $V_{DRM}$ V | $I_{TRMS}$ = 420 A (maximum value for continuous operation) $I_{TAV}$ = 250 A (sin. 180; $T_c$ = 85 °C) | | |
|---|---|---|---|---|
| 900 | 800 | SKKT 250/08E | SKKH 250/08E | |
| 1300 | 1200 | SKKT 250/12E | SKKH 250/12E | |
| 1700 | 1600 | SKKT 250/16E | SKKH 250/16E | |
| 1900 | 1800 | SKKT 250/18E | SKKH 250/18E | |

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $I_{TAV}$ | sin. 180; $T_c$ = 85 (100) °C; | 250 (178 ) | A |
| $I_D$ | P16/200F; $T_a$ = 35 °C; B2/B6 | 450 / 585 | A |
| $I_{RMS}$ | P16/200F; $T_a$ = 35 °C; W1 / W3 | 566 / 3 * 471 | A |
| $I_{TSM}$ | $T_{vj}$ = 25 °C; 10 ms | 9000 | A |
| | $T_{vj}$ = 130 °C; 10 ms | 8000 | A |
| i²t | $T_{vj}$ = 25 °C; 8,3 ... 10 ms | 405000 | A²s |
| | $T_{vj}$ = 130 °C; 8,3 ... 10 ms | 320000 | A²s |
| $V_T$ | $T_{vj}$ = 25 °C; $I_T$ = 750 A | max. 1,4 | V |
| $V_{T(TO)}$ | $T_{vj}$ = 130 °C | max. 0,925 | V |
| $r_T$ | $T_{vj}$ = 130 °C | max. 0,45 | mΩ |
| $I_{DD}$; $I_{RD}$ | $T_{vj}$ = 130 °C; $V_{RD}$ = $V_{RRM}$; $V_{DD}$ = $V_{DRM}$ | max. 85 | mA |
| $t_{gd}$ | $T_{vj}$ = 25 °C; $I_G$ = 1 A; $di_G/dt$ = 1 A/µs | 1 | µs |
| $t_{gr}$ | $V_D$ = 0,67 * $V_{DRM}$ | 2 | µs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 130 °C | max. 250 | A/µs |
| $(dv/dt)_{cr}$ | $T_{vj}$ = 130 °C | max. 1000 | V/µs |
| $t_q$ | $T_{vj}$ = 130 °C , | 50 ... 150 | µs |
| $I_H$ | $T_{vj}$ = 25 °C; typ. / max. | 150 / 500 | mA |
| $I_L$ | $T_{vj}$ = 25 °C; $R_G$ = 33 Ω; typ. / max. | 300 / 2000 | mA |
| $V_{GT}$ | $T_{vj}$ = 25 °C; d.c. | min. 3 | V |
| $I_{GT}$ | $T_{vj}$ = 25 °C; d.c. | min. 200 | mA |
| $V_{GD}$ | $T_{vj}$ = 130 °C; d.c. | max. 0,25 | V |
| $I_{GD}$ | $T_{vj}$ = 130 °C; d.c. | max. 10 | mA |
| $R_{th(j-c)}$ | cont.; per thyristor / per module | 0,14 / 0,07 | K/W |
| $R_{th(j-c)}$ | sin. 180; per thyristor / per module | 0,15 / 0,075 | K/W |
| $R_{th(j-c)}$ | rec. 120; per thyristor / per module | 0,165 / 0,083 | K/W |
| $R_{th(c-s)}$ | per thyristor / per module | 0,04 / 0,02 | K/W |
| $T_{vj}$ | | - 40 ... + 130 | °C |
| $T_{stg}$ | | - 40 ... + 130 | °C |
| $V_{isol}$ | a. c. 50 Hz; r.m.s.; 1 s / 1 min. | 3600 / 3000 | V~ |
| $M_s$ | to heatsink | 5 ± 15 %1) | Nm |
| $M_t$ | to terminals | 9 ± 15 % | Nm |
| a | | 5 * 9,81 | m/s² |
| m | approx. | 600 | g |
| Case | SKKT | A 73b | |
| | SKKH | A 76b | |

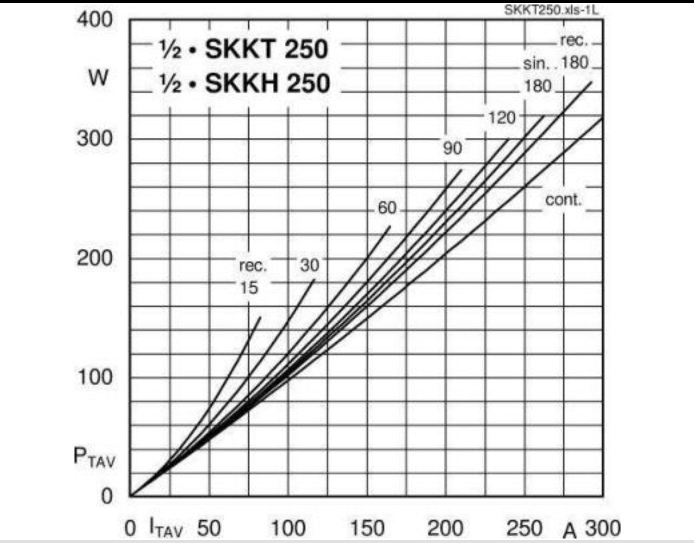


Fig. 1L Power dissipation per thyristor vs. on-state current

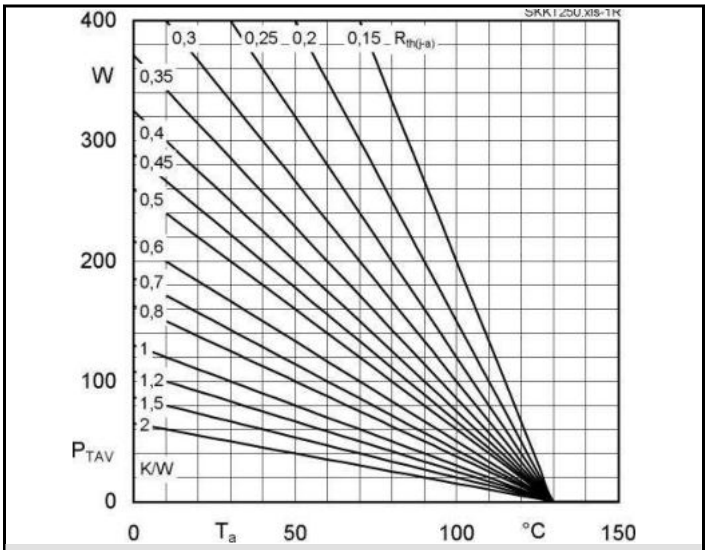


Fig. 1R Power dissipation per thyristor vs. ambient temp.

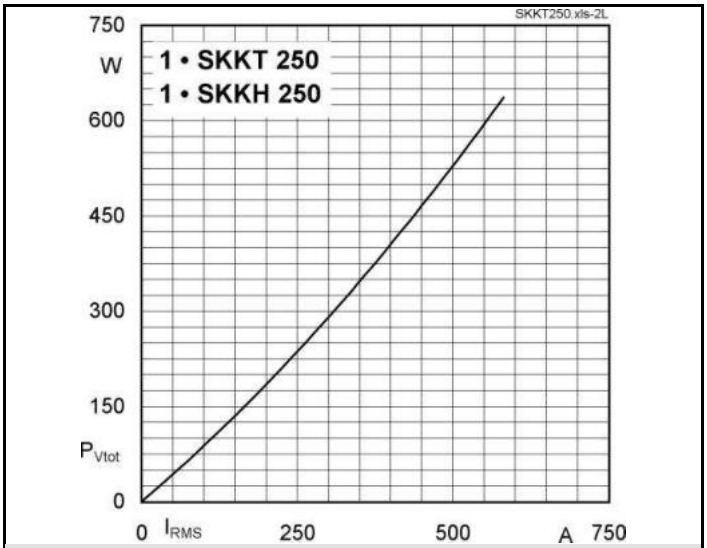


Fig. 2L Power dissipation per module vs. rms current

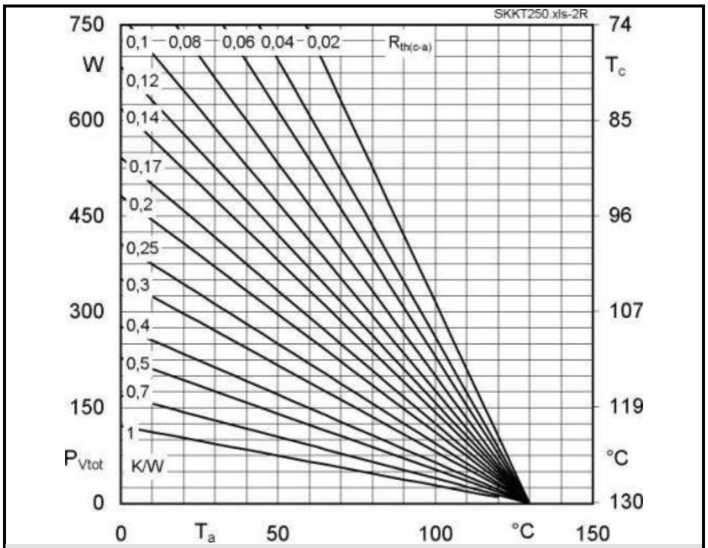


Fig. 2R Power dissipation per module vs. case temp.

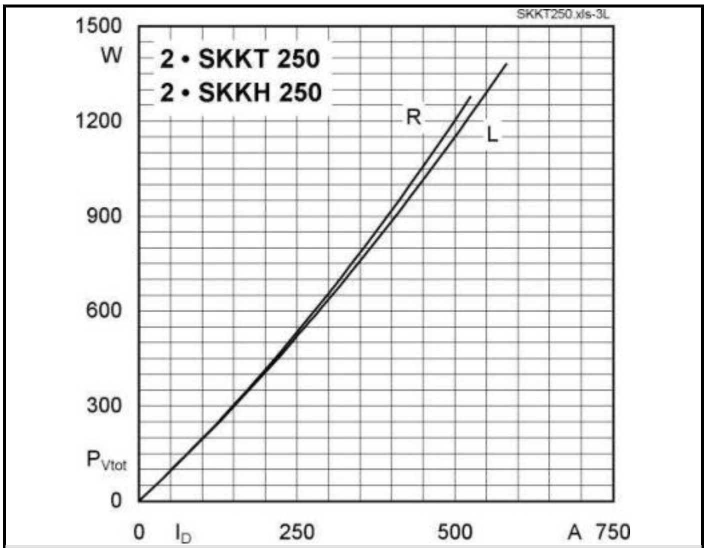


Fig. 3L Power dissipation of two modules vs. direct current

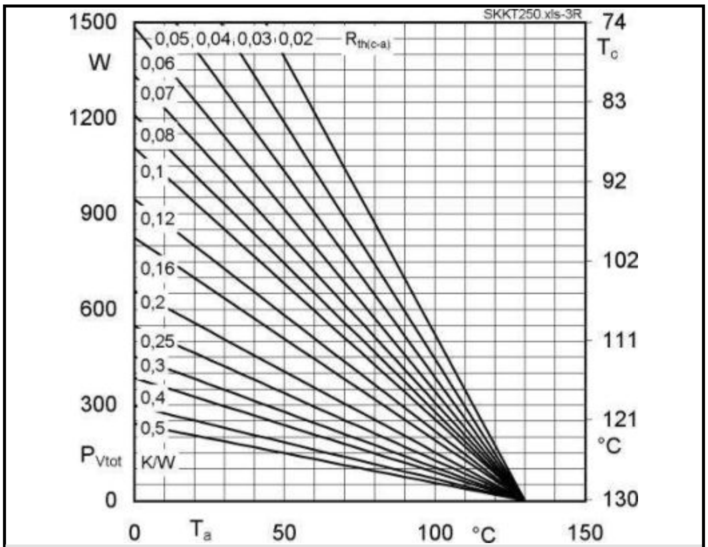


Fig. 3R Power dissipation of two modules vs. case temp.

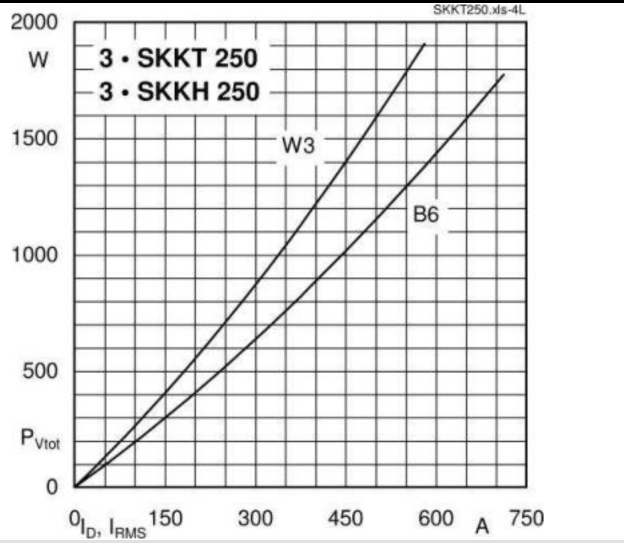



Fig. 4L Power dissipation of three modules vs. direct and rms current

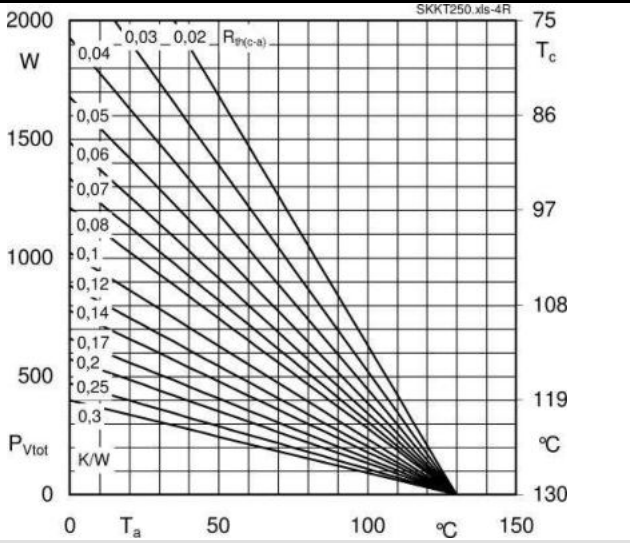



Fig. 4R Power dissipation of three modules vs. case temp.

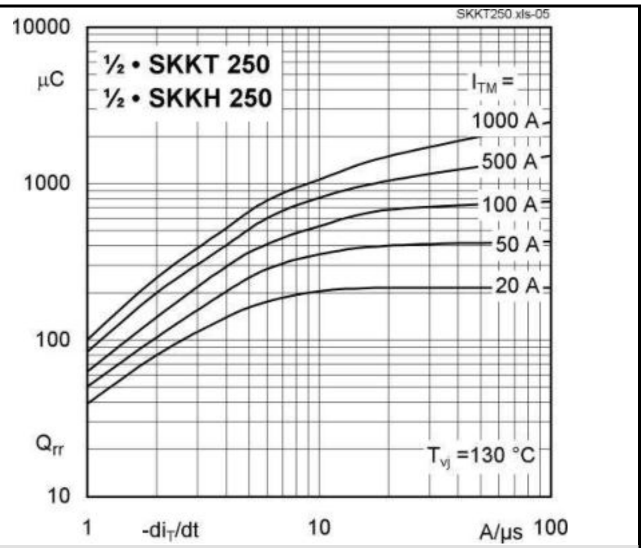



Fig. 5 Recovered charge vs. current decrease

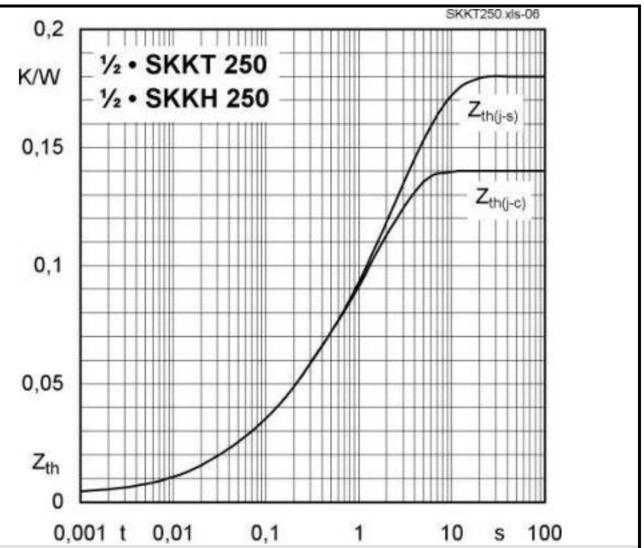



Fig. 6 Transient thermal impedance vs. time

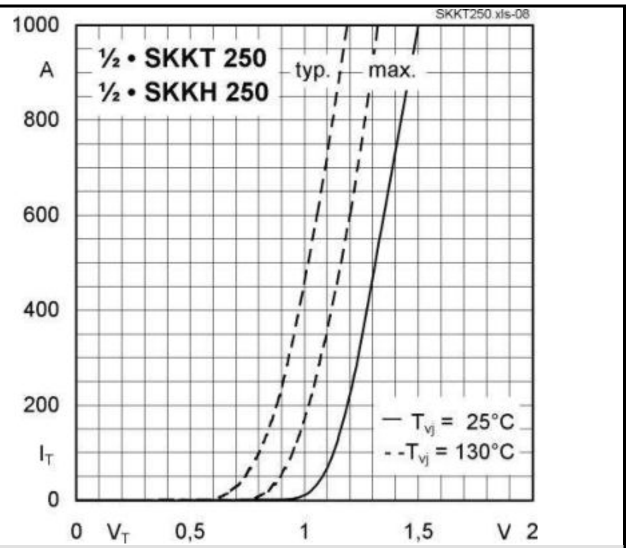



Fig. 7 On-state characteristics

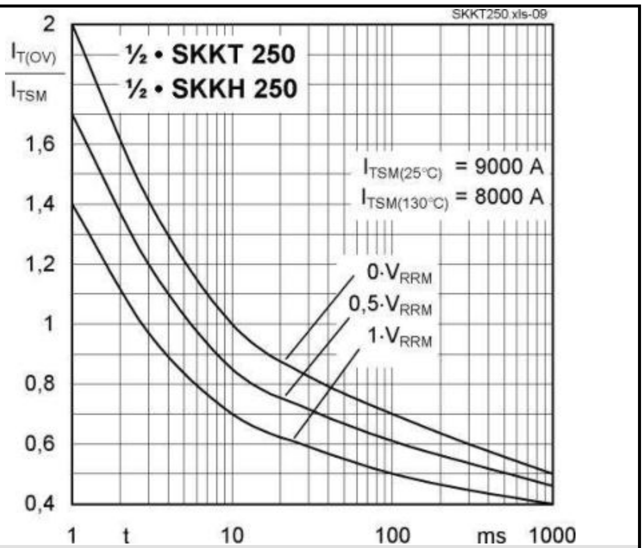



Fig. 8 Surge overload current vs. time

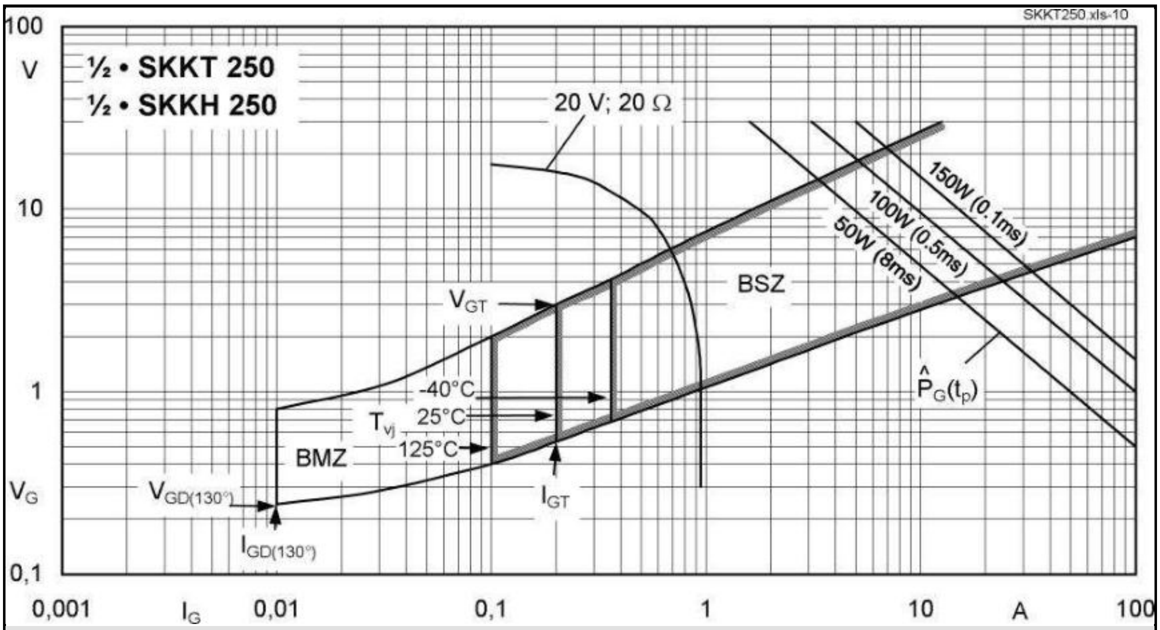
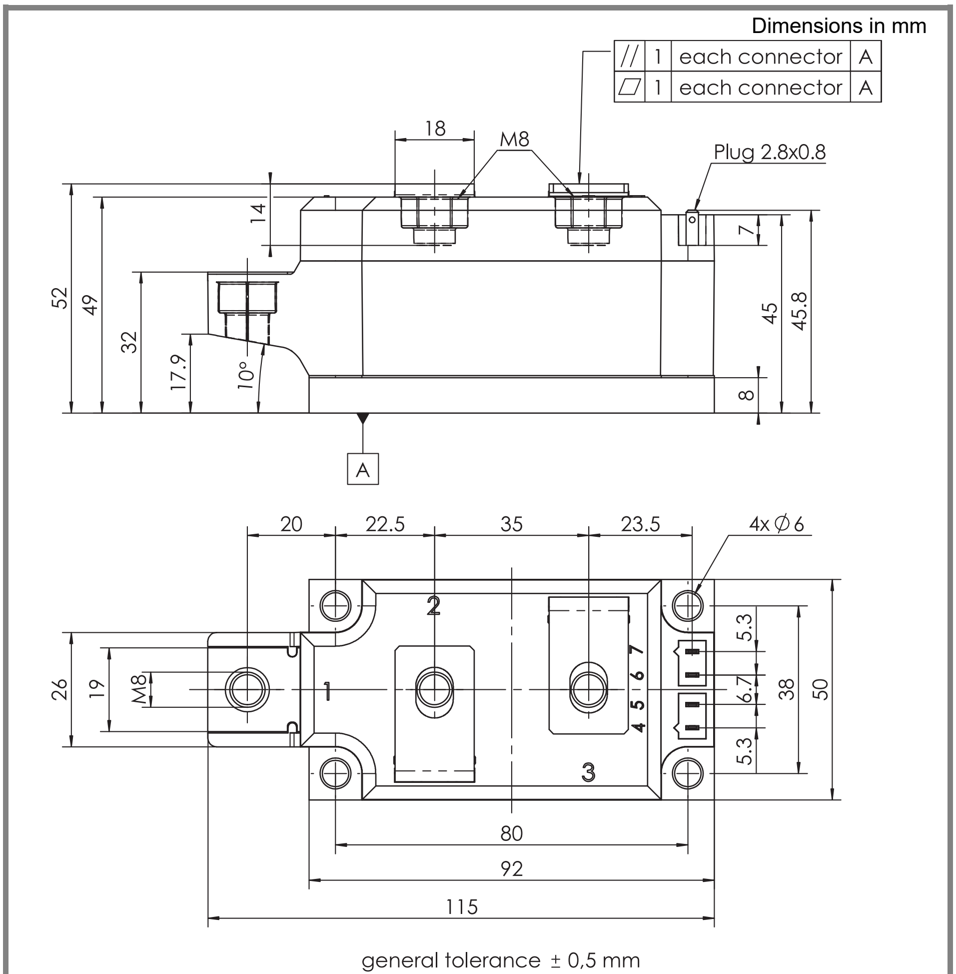


Fig. 9 Gate trigger characteristics



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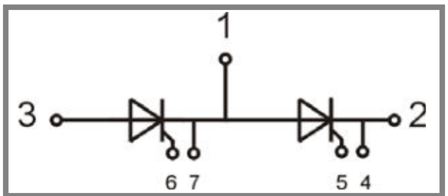

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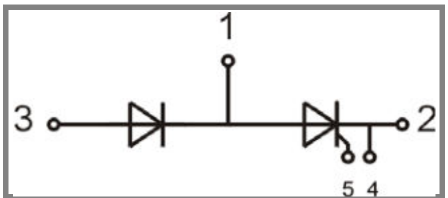

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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

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