# SKKT 162, SKKH 162

THYRISTOR BRIDGE,SCR,BRIDGE

**SEMIPACK® 2**

## Thyristor / Diode Modules

**SKKT 162**

**SKKH 162**

### Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63 532

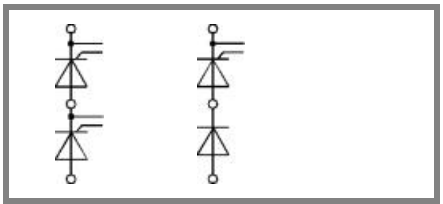
### Typical Applications*

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

1) See the assembly instructions

| $V_{RSM}$ V | $V_{RRM}$, $V_{DRM}$ V | $I_{TRMS}$ = 250 A (maximum value for continuous operation) $I_{TAV}$ = 160 A (sin.180; $T_c$ = 83 °C) | |
|---|---|---|---|
| 900 | 800 | SKKT 162/08E | SKKH 162/08E |
| 1300 | 1200 | SKKT 162/12E | SKKH 162/12E |
| 1500 | 1400 | SKKT 162/14E | SKKH 162/14E |
| 1700 | 1600 | SKKT 162/16E | SKKH 162/16E |
| 1900 | 1800 | SKKT 162/18E | SKKH 162/18E |

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $I_{TAV}$ | sin. 180; $T_c$ = 85 (100) °C; | 156 (110 ) | A |
| $I_D$ | P3/180F; $T_a$ = 35 °C; B2 / B6 | 190 / 230 | A |
| $I_{RMS}$ | P3/180F; $T_a$ = 35 °C; W1 / W3 | 265 / 3 * 185 | A |
| $I_{TSM}$ | $T_{vj}$ = 25 °C; 10 ms | 5400 | A |
| | $T_{vj}$ = 125 °C; 10 ms | 5000 | A |
| i²t | $T_{vj}$ = 25 °C; 8,3 ... 10 ms | 145000 | A²s |
| | $T_{vj}$ = 125 °C; 8,3 ... 10 ms | 125000 | A²s |
| $V_T$ | $T_{vj}$ = 25 °C; $I_T$ = 500 A | max. 1,6 | V |
| $V_{T(TO)}$ | $T_{vj}$ = 125 °C | max. 0,85 | V |
| $r_T$ | $T_{vj}$ = 125 °C | max. 1,5 | mΩ |
| $I_{DD}$; $I_{RD}$ | $T_{vj}$ = 125 °C; $V_{RD}$ = $V_{RRM}$; $V_{DD}$ = $V_{DRM}$ | max. 40 | 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 |
| $(di/dt)_{cr}$ | $T_{vj}$ = 125 °C | max. 200 | A/µs |
| $(dv/dt)_{cr}$ | $T_{vj}$ = 125 °C | max. 1000 | V/µs |
| $t_q$ | $T_{vj}$ = 125 °C , | 50 ... 150 | µs |
| $I_H$ | $T_{vj}$ = 25 °C; typ. / max. | 150 / 400 | mA |
| $I_L$ | $T_{vj}$ = 25 °C; $R_G$ = 33 Ω; typ. / max. | 300 / 1000 | mA |
| $V_{GT}$ | $T_{vj}$ = 25 °C; d.c. | min. 2 | V |
| $I_{GT}$ | $T_{vj}$ = 25 °C; d.c. | min. 150 | mA |
| $V_{GD}$ | $T_{vj}$ = 125 °C; d.c. | max. 0,25 | V |
| $I_{GD}$ | $T_{vj}$ = 125 °C; d.c. | max. 10 | mA |
| $R_{th(j-c)}$ | cont.; per thyristor / per module | 0,17 / 0,085 | K/W |
| $R_{th(j-c)}$ | sin. 180; per thyristor / per module | 0,18 / 0,09 | K/W |
| $R_{th(j-c)}$ | rec. 120; per thyristor / per module | 0,2 / 0,1 | K/W |
| $R_{th(c-s)}$ | per thyristor / per module | 0,1 / 0,05 | K/W |
| $T_{vj}$ | | - 40 ... + 125 | °C |
| $T_{stg}$ | | - 40 ... + 125 | °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 terminal | 5 ± 15 % | Nm |
| a | | 5 * 9,81 | m/s² |
| m | approx. | 165 | g |
| Case | SKKT | A 21 | |
| | SKKH | A 22 | |



SKKT SKKH

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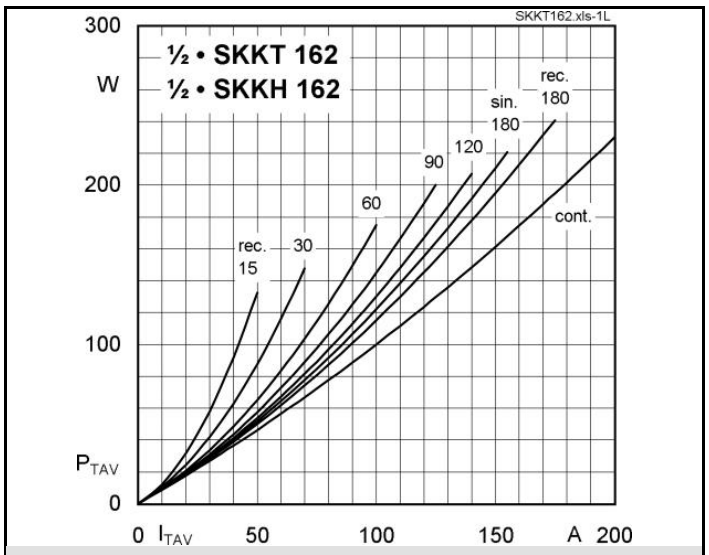


Fig. 1L Power dissipation per thyristor vs. on-state current

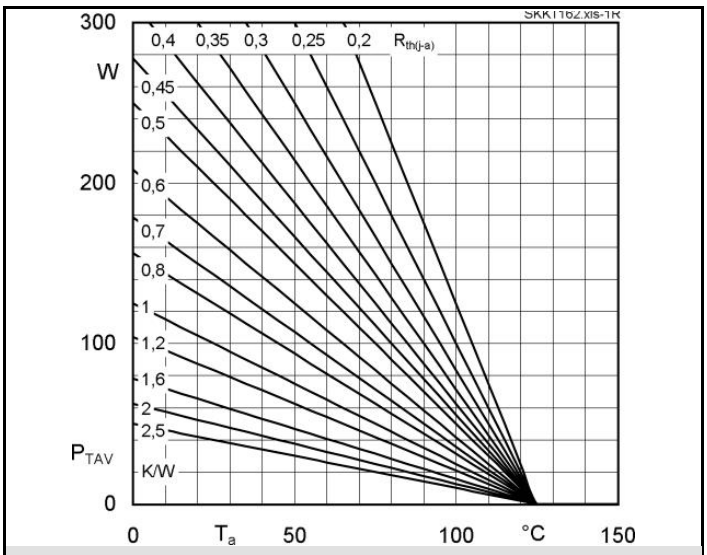


Fig. 1R Power dissipation per thyristor vs. ambient temp.

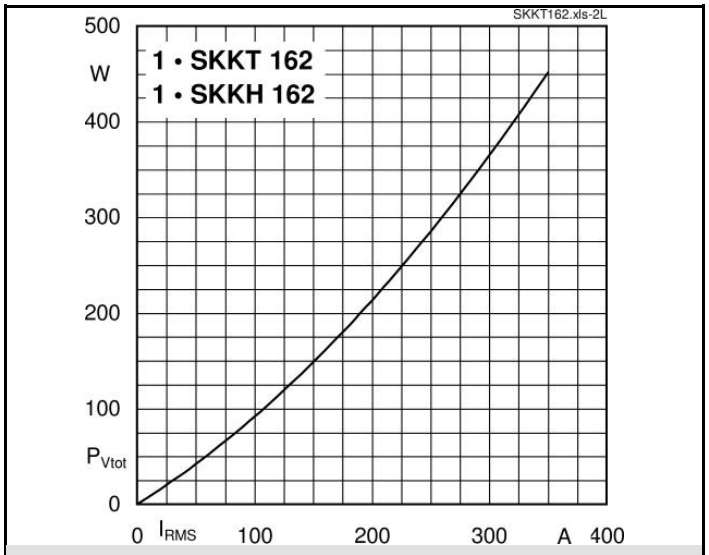


Fig. 2L Power dissipation per module vs. rms current

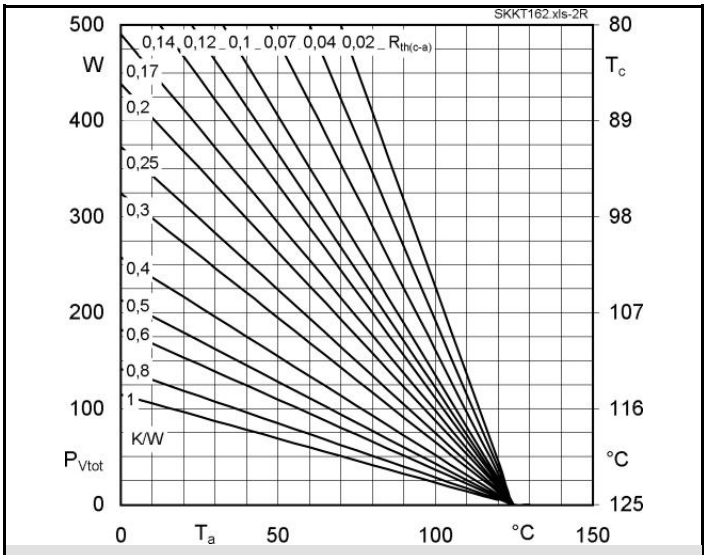


Fig. 2R Power dissipation per module vs. case temp.

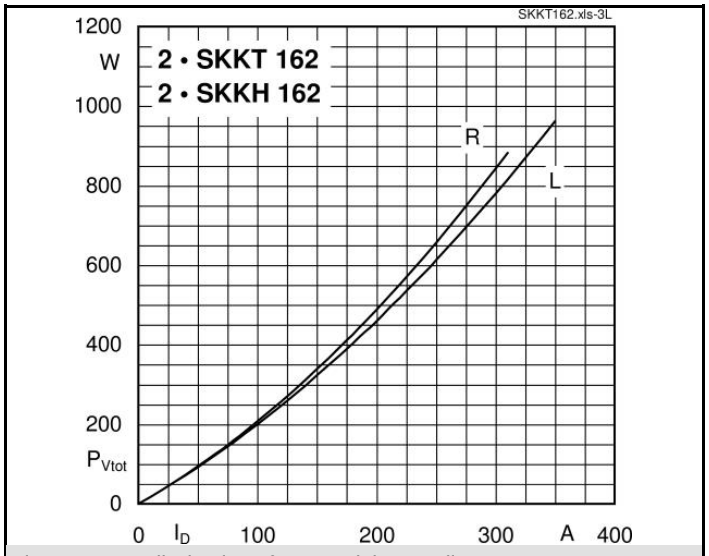


Fig. 3L Power dissipation of two modules vs. direct current

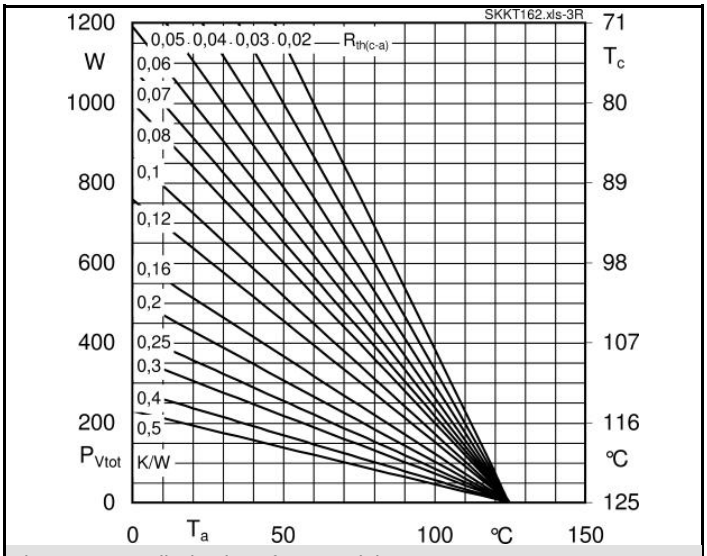


Fig. 3R Power dissipation of two modules vs. case temp.

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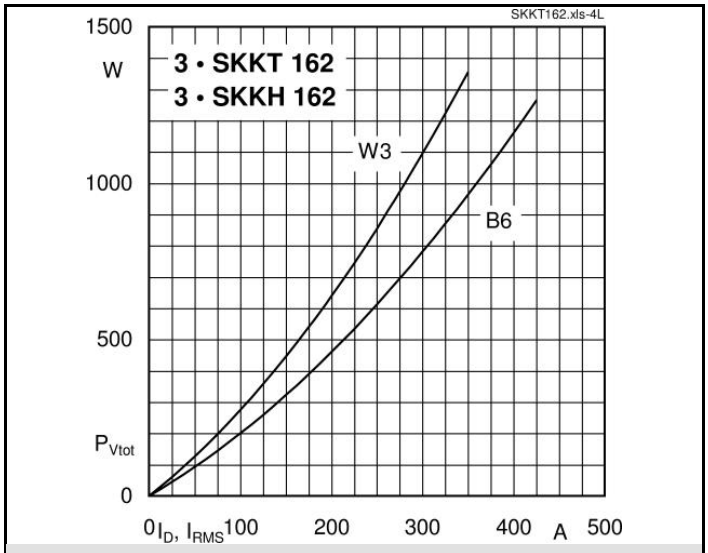


Fig. 4L Power dissipation of three modules vs. direct and rms current

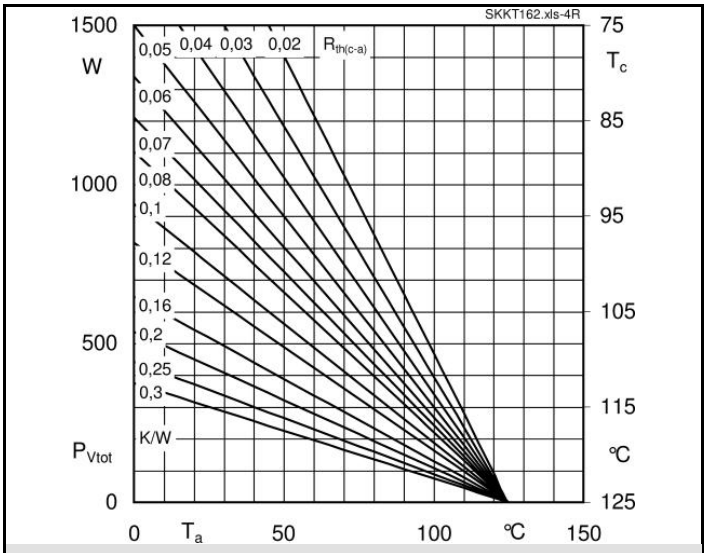


Fig. 4R Power dissipation of three modules vs. case temp.

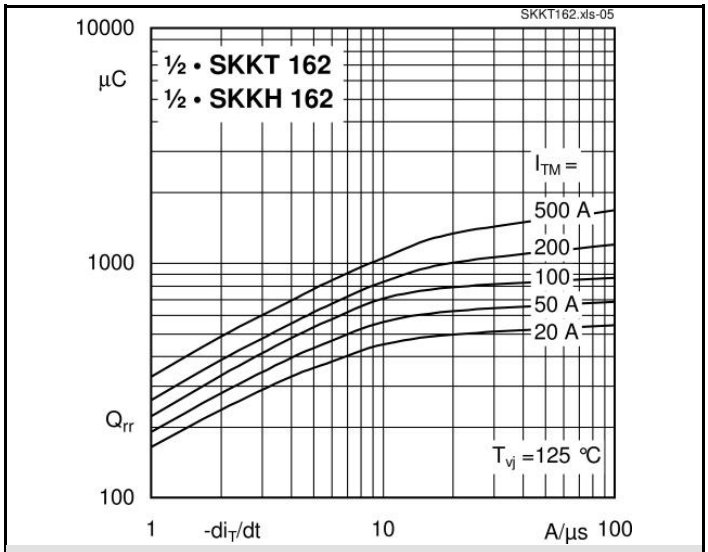


Fig. 5 Recovered charge vs. current decrease

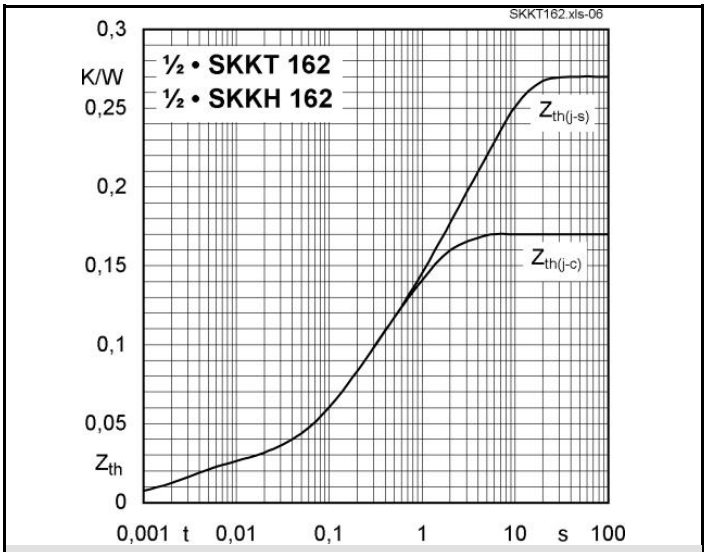


Fig. 6 Transient thermal impedance vs. time

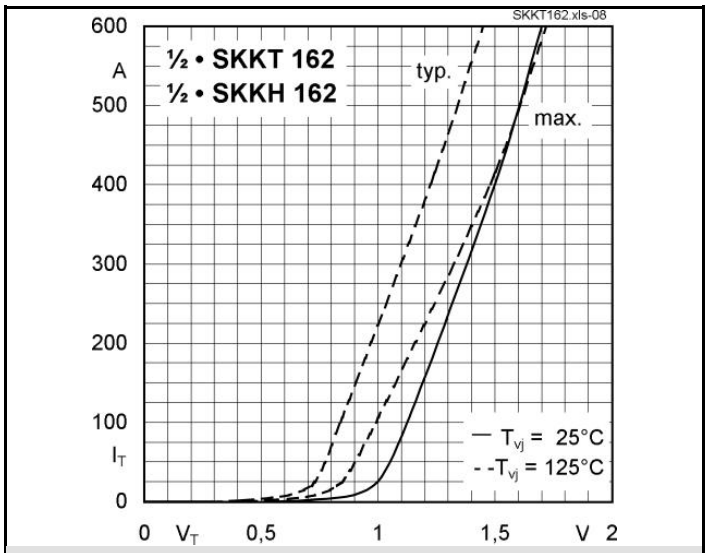


Fig. 7 On-state characteristics

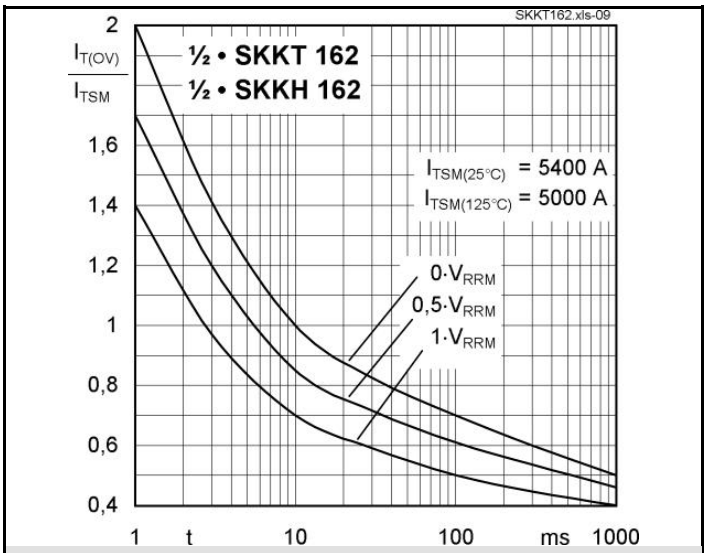


Fig. 8 Surge overload current vs. time

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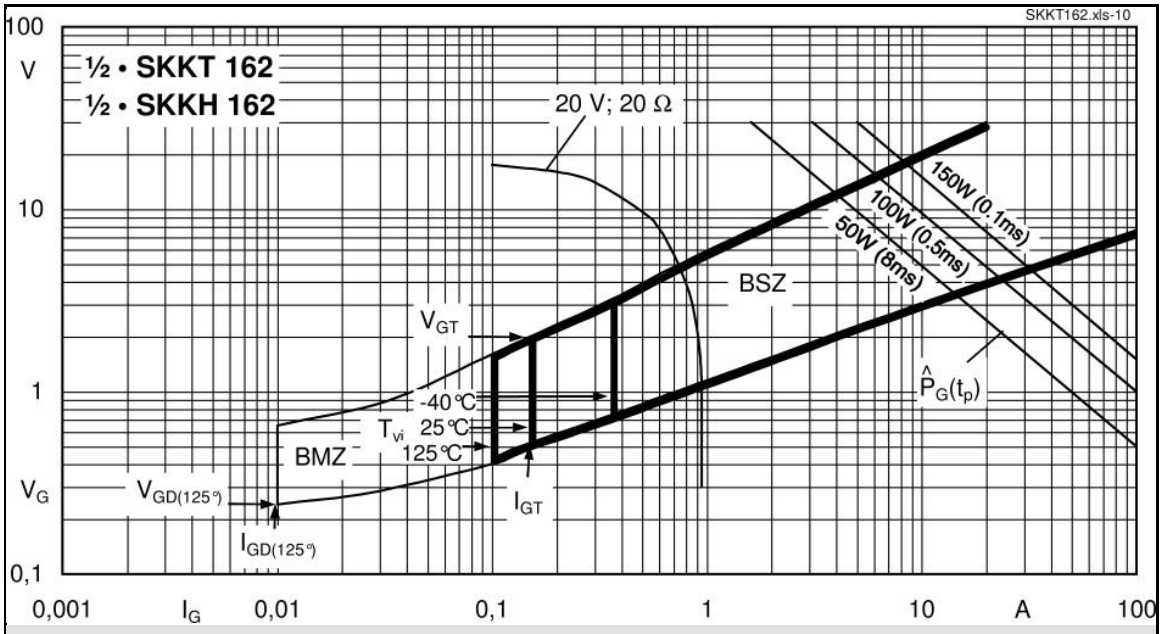
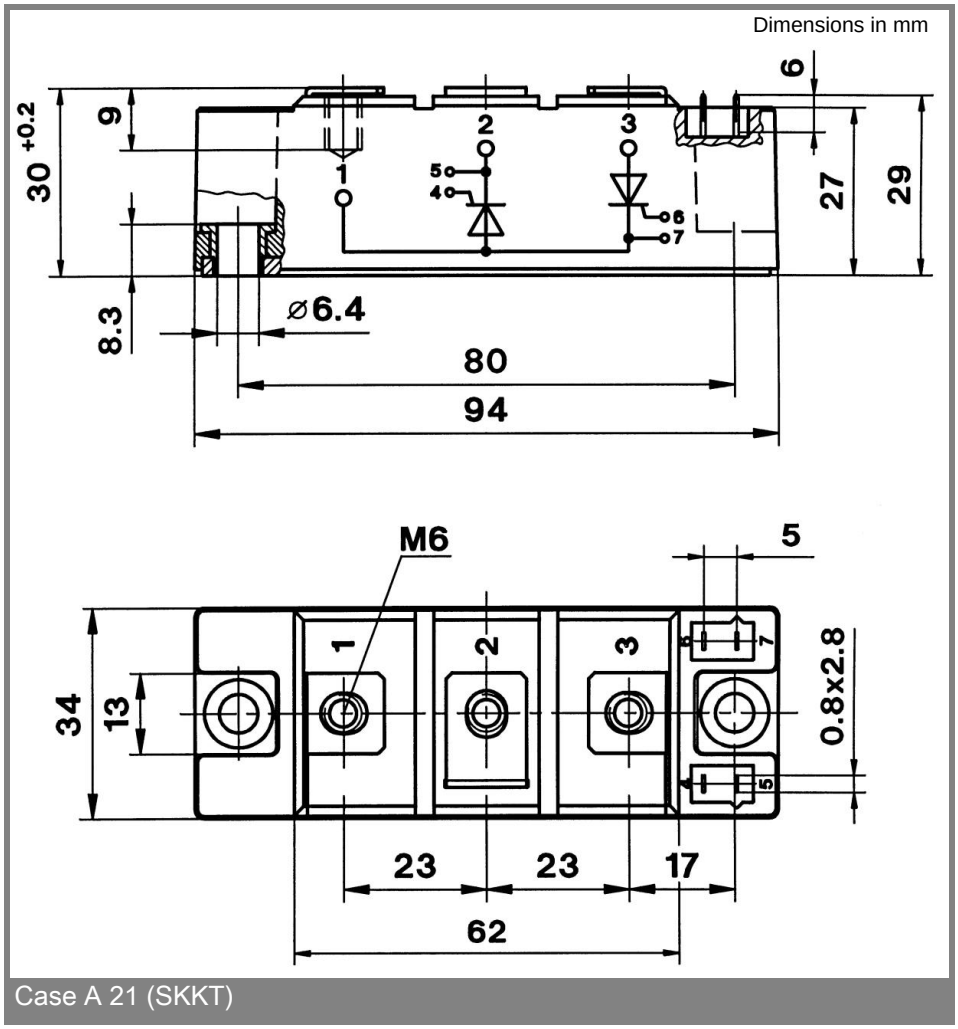
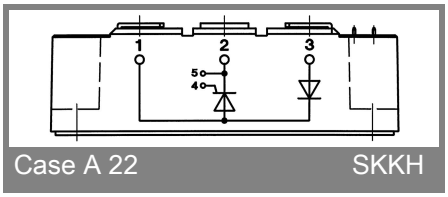


Fig. 9 Gate trigger characteristics



Case A 21 (SKKT)


Case A 22 SKKH

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON

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