SEMIKRON

| $V_{RS}$ V | $V_{RRM}$ $V_{DRM}$ V | $(dv/dt)_{cr}$ V/µs | $I_{TRMS}$ (maximum values for continuous operation) 920 A / $I_{TAV}$ (sin. 180; $T_{case}$ = 80 °C) 585 A | |
|---|---|---|---|---|
| 900 | 800 | 500 | **SKKT 500/08 D** | **SKKH 500/08 D** |
| 1300 | 1200 | 1000 | **SKKT 500/12 E** | **SKKH 500/12 E** |
| 1500 | 1400 | 1000 | **SKKT 500/14 E** | **SKKH 500/14 E** |
| 1700 | 1600 | 1000 | **SKKT 500/16 E** | **SKKH 500/16 E** |
| 1900 | 1800 | 1000 | **SKKT 500/18 E** | **SKKH 500/18 E** |

| Symbol | Conditions | SKKT 500 SKKH 500 | Units |
|---|---|---|---|
| $I_{TAV}$ | sin. 180; $T_{case}$ = 85 °C | 540 | A |
| $I_D$ | $T_{case}$ = 89 °C | 500 | A |
| $I_{RMS}$ | B2/B6 \| $T_{amb}$ = 35 °C \| P 16/200 F | 665 / 845 | A |
| | W1/W3 \| $T_{amb}$ = 35 °C \| P 16/300 F | 850 / 3 x 670 | A |
| $I_{TSM}$ | $T_{vj}$ = 25 °C; 10 ms | 17 000 | A |
| | $T_{vj}$ = 130 °C; 10 ms | 15 000 | A |
| $i^2t$ | $T_{vj}$ = 25 °C; 8,3 ... 10 ms | 1 445 000 | $A^2s$ |
| | $T_{vj}$ = 130 °C; 8,3 ... 10 ms | 1 125 000 | $A^2s$ |
| $t_{gd}$ | $T_{vj}$ = 25 °C $I_G$ = 1 A, $di_G/dt$ = 1 A/µs | 1 | µs |
| $t_{gr}$ | $V_D = 0{,}67 \cdot V_{DRM}$ | 2 | µs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 130 °C | 200 | A/µs |
| $t_q$ | $T_{vj}$ = 130 °C | typ. 100 . . . 200 | µs |
| $I_H$ | $T_{vj}$ = 25 °C; typ./max. | 150 / 500 | mA |
| $I_L$ | $T_{vj}$ = 25 °C; $R_G$ = 33 Ω; typ./max. | 0,3 / 2 | A |
| $V_T$ | $T_{vj}$ = 25 °C; $I_T$ = 1700 A | max. 1,5 | V |
| $V_{T(TO)}$ | $T_{vj}$ = 130 °C | 0,925 | V |
| $r_T$ | $T_{vj}$ = 130 °C | 0,27 | mΩ |
| $I_{DD}$; $I_{RD}$ | $T_{vj}$ = 130 °C; $V_{RD} = V_{RRM}$, $V_{DD} = V_{DRM}$ | 100 | mA |
| $V_{GT}$ | $T_{vj}$ = 25 °C; d.c. | 3 | V |
| $I_{GT}$ | $T_{vj}$ = 25 °C; d.c. | 200 | mA |
| $V_{GD}$ | $T_{vj}$ = 130 °C; d.c. | 0,25 | V |
| $I_{GD}$ | $T_{vj}$ = 130 °C; d.c. | 10 | mA |
| $R_{thjc}$ | cont. (per thyristor / per module) | 0,062 / 0,031 | °C/W |
| | sin. 180 (per thyristor / per module) | 0,065 / 0,0325 | °C/W |
| | rec. 120 (per thyristor / per module) | 0,070 / 0,035 | °C/W |
| $R_{thch}$ | | 0,02 / 0,01 | °C/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~ |
| $M_1$ | to heatsink(M6) SI units | 5 ± 15 % [1] | Nm |
| | US units | 44 ± 15 % [1] | lb.in. |
| $M_2$ | to terminals(M10) SI units | 12 ± 15 % [2] | Nm |
| | US units | 106 ± 15 % [2] | lb.in. |
| a | | $5 \cdot 9{,}81$ | $m/s^2$ |
| w | approx. | 1420 | g |
| Case | | SKKT 500: A 60 a<br>SKKH 500: A 66 a | |

## SEMIPACK® 5
## Thyristor / Diode Modules

## SKKT 500
## SKKH 500

**SKKT** **SKKH**

### Features

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

### Typical Applications

- AC motor softstarters
- Input converters for AC inverter drives
- 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
[2] The screws must be lubricated

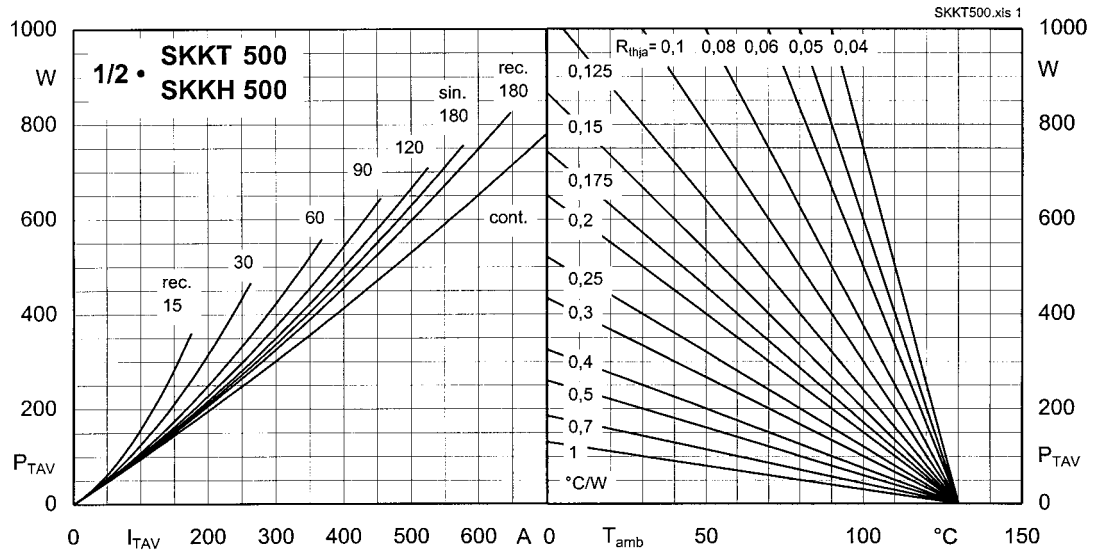



Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

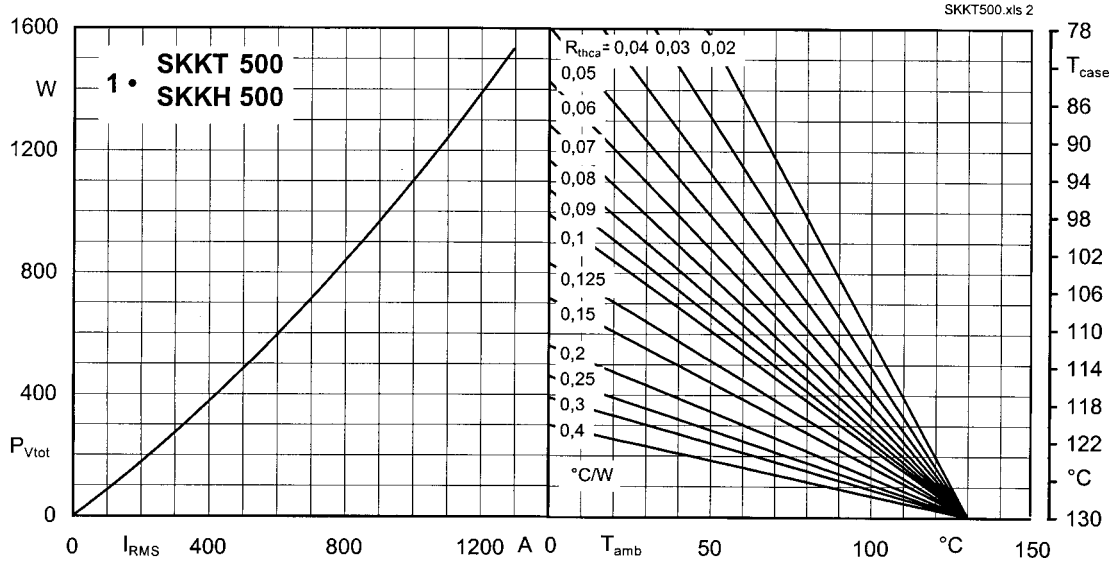



Fig. 2 Power dissipation per module vs. rms current and case temperature

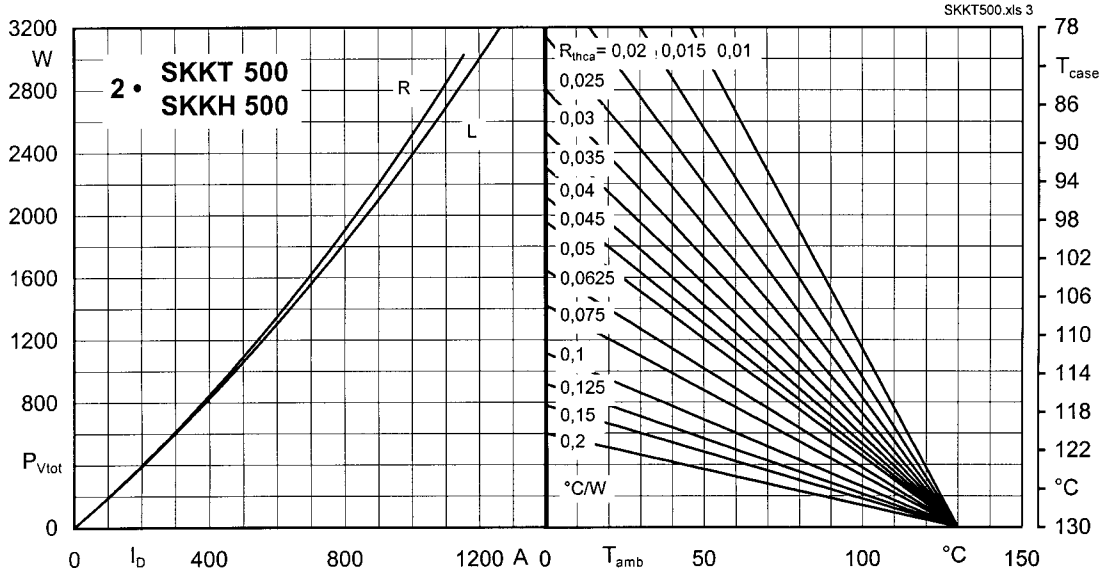



Fig. 3 Power dissipation of two module vs. direct current and case temperature

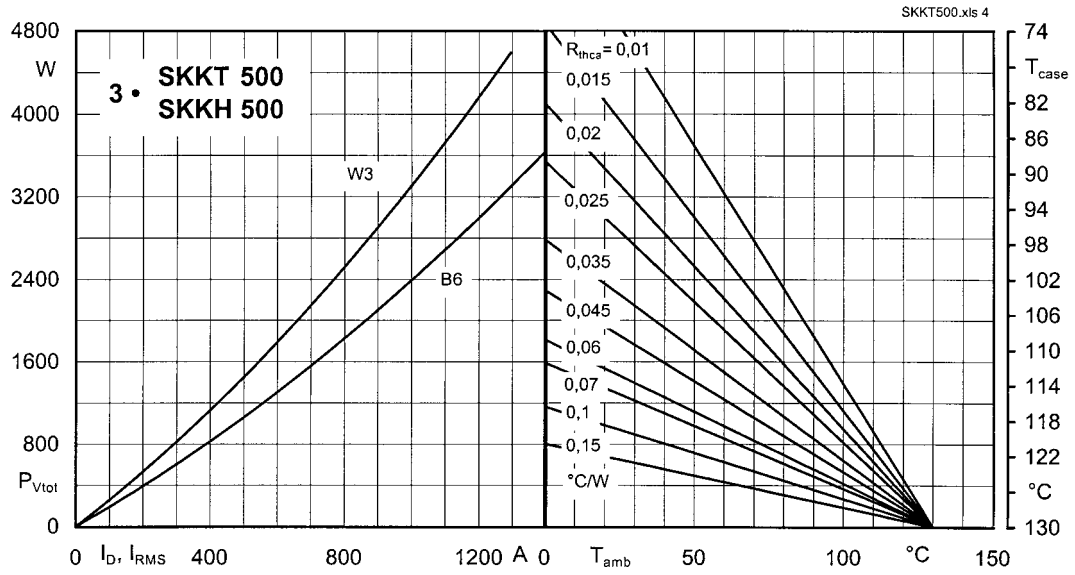



Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

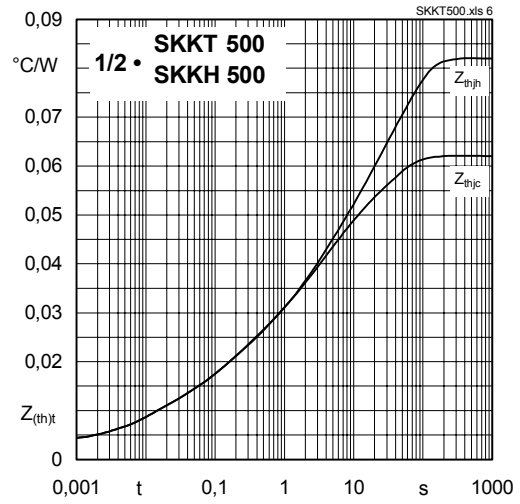



Fig. 6 Transient thermal impedance vs. time

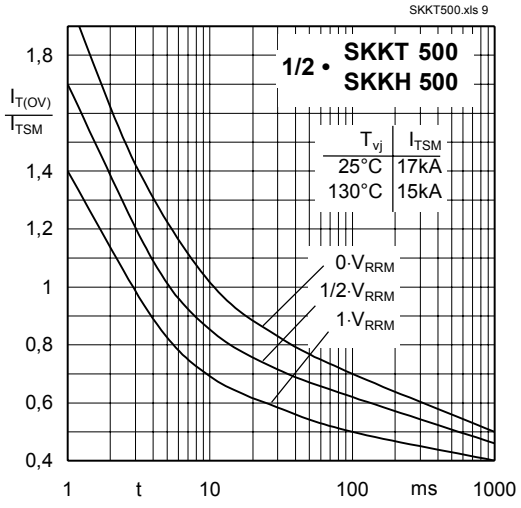



Fig. 9 Surge overload current vs. time

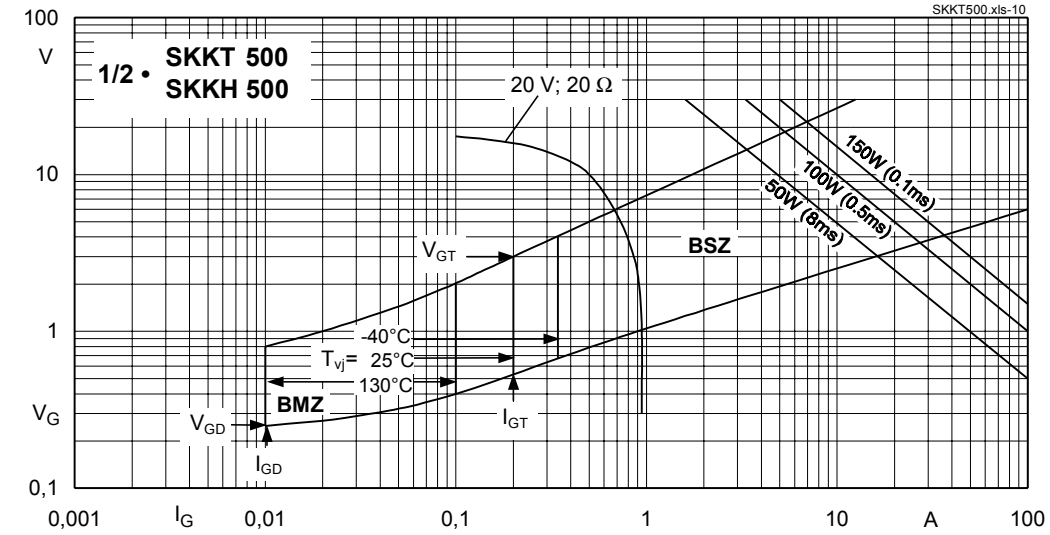
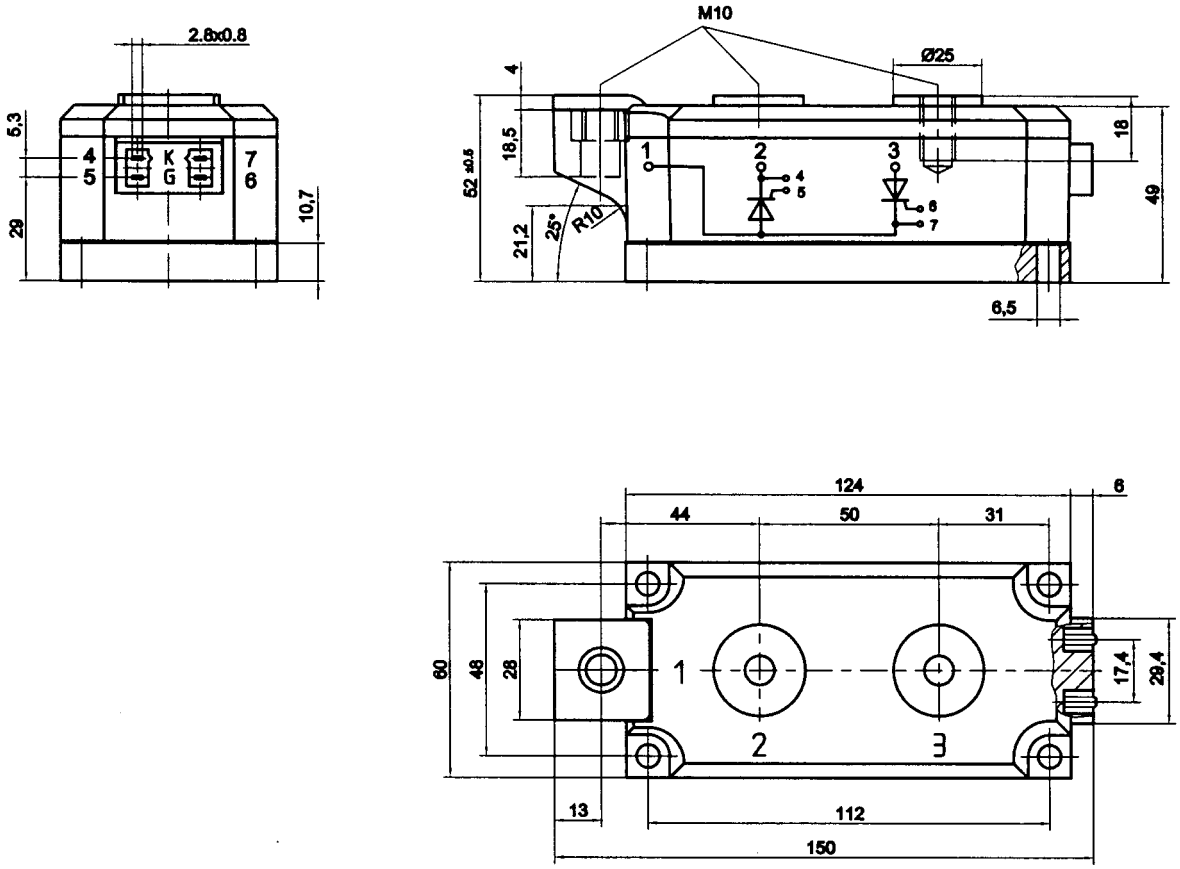



Fig. 10 Gate trigger characteristics

**SKKT 500**

Case A 60 a
SEMIPACK® 5




Dimensions in mm

**SKKH 500**

Case A 66 a