# SKKT 27, SKKT 27B, SKKH 27


**SEMIPACK® 1**

## Thyristor / Diode Modules

**SKKT 27**

**SKKT 27B**

**SKKH 27**

### Features

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

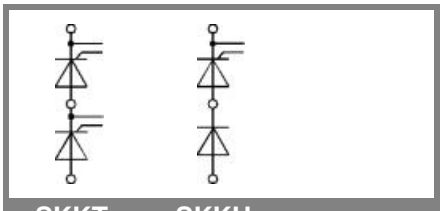
### Typical Applications*

- DC motor control (e. g. for machine tools)
- AC motor soft starters
- 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 | $I_{TRMS}$ = 50 A (maximum value for continuous operation) $I_{TAV}$ = 27 A (sin. 180; $T_c$ = 82 °C) | | |
|---|---|---|---|---|
| 900 | 800 | SKKT 27/08E | SKKT 27B08E | SKKH 27/08E |
| 1300 | 1200 | SKKT 27/12E | SKKT 27B12E | SKKH 27/12E |
| 1500 | 1400 | SKKT 27/14E | SKKT 27B14E | SKKH 27/14E |
| 1700 | 1600 | SKKT 27/16E | SKKT 27B16E | SKKH 27/16E |
| 1900 | 1800 | | | SKKH 27/18E |

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $I_{TAV}$ | sin. 180; $T_c$ = 85 (100) °C; | 25 (18 ) | A |
| $I_D$ | P3/180; $T_a$ = 45 °C; B2 / B6 | 38 / 50 | A |
| | P3/180F; $T_a$ = 35 °C; B2 / B6 | 60 /77 | A |
| $I_{RMS}$ | P3/180; $T_a$ = 45 °C; W1 / W3 | 52 / 3 x 37 | A |
| $I_{TSM}$ | $T_{vj}$ = 25 °C; 10 ms | 550 | A |
| | $T_{vj}$ = 125 °C; 10 ms | 480 | A |
| i²t | $T_{vj}$ = 25 °C; 8,3 ... 10 ms | 1500 | A²s |
| | $T_{vj}$ = 125 °C; 8,3 ... 10 ms | 1150 | A²s |
| $V_T$ | $T_{vj}$ = 25 °C; $I_T$ = 75 A | max. 1,8 | V |
| $V_{T(TO)}$ | $T_{vj}$ = 125 °C | max. 0,9 | V |
| $r_T$ | $T_{vj}$ = 125 °C | max. 12 | mΩ |
| $I_{DD}$; $I_{RD}$ | $T_{vj}$ = 125 °C; $V_{RD}$ = $V_{RRM}$; $V_{DD}$ = $V_{DRM}$ | max. 10 | 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 * $V_{DRM}$ | 1 | µs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 125 °C | max. 150 | A/µs |
| $(dv/dt)_{cr}$ | $T_{vj}$ = 125 °C | max. 1000 | V/µs |
| $t_q$ | $T_{vj}$ = 125 °C , | 80 | µs |
| $I_H$ | $T_{vj}$ = 25 °C; typ. / max. | 100 / 200 | mA |
| $I_L$ | $T_{vj}$ = 25 °C; $R_G$ = 33 Ω; typ. / max. | 250 / 400 | mA |
| $V_{GT}$ | $T_{vj}$ = 25 °C; d.c. | min. 3 | 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. 5 | mA |
| $R_{th(j-c)}$ | cont.; per thyristor / per module | 0,9 / 0,45 | K/W |
| $R_{th(j-c)}$ | sin. 180; per thyristor / per module | 0,95 / 0,48 | K/W |
| $R_{th(j-c)}$ | rec. 120; per thyristor / per module | 1 / 0,5 | K/W |
| $R_{th(c-s)}$ | per thyristor / per module | 0,2 / 0,1 | 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 terminals | 3 ± 15 % | Nm |
| a | | 5 * 9,81 | m/s² |
| m | approx. | 95 | g |
| Case | SKKT | A 46 | |
| | SKKT ...B | A 48 | |
| | SKKH | A 47 | |



**SKKT SKKH**

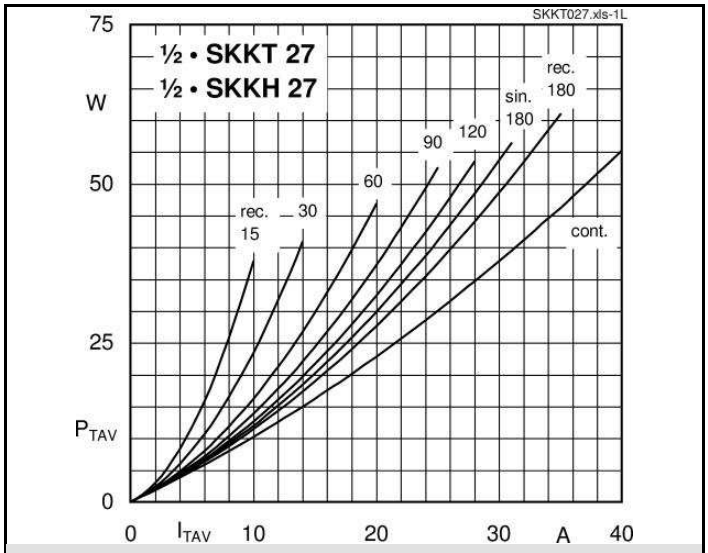



Fig. 1L Power dissipation per thyristor vs. on-state current

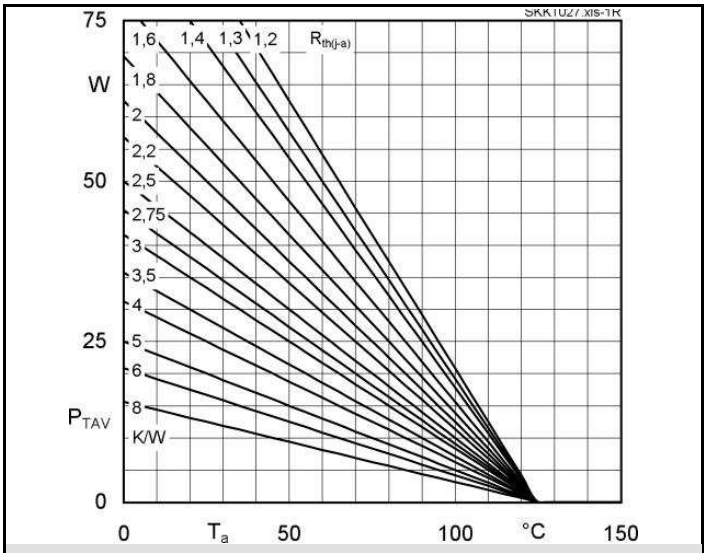



Fig. 1R Power dissipation per thyristor vs. ambient temp.

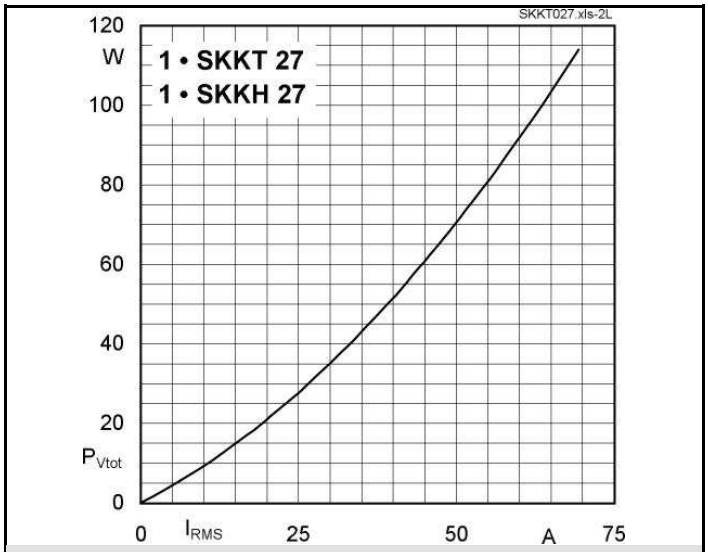



Fig. 2L Power dissipation per module vs. rms current

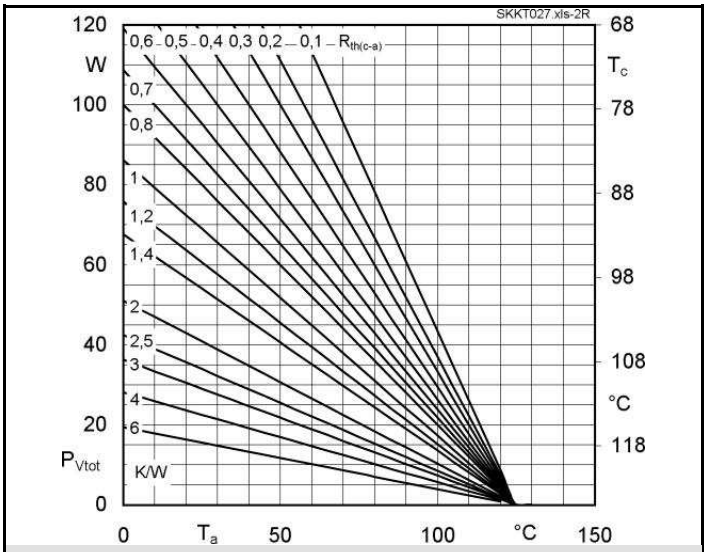



Fig. 2R Power dissipation per module vs. case temp.

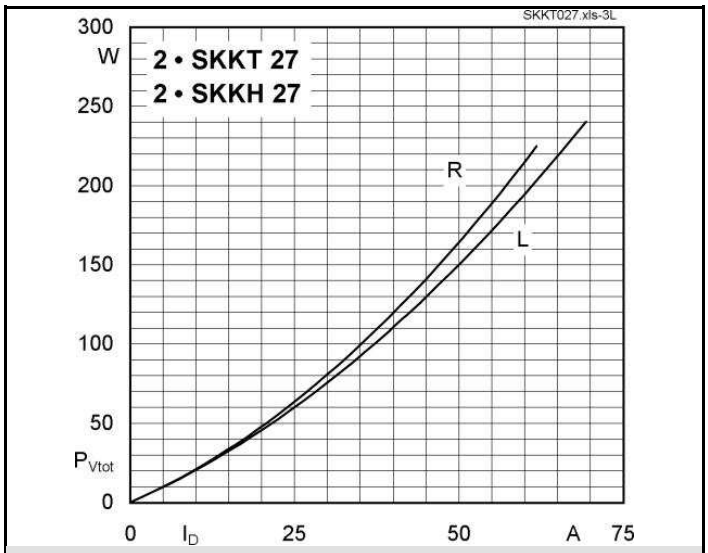



Fig. 3L Power dissipation of two modules vs. direct current

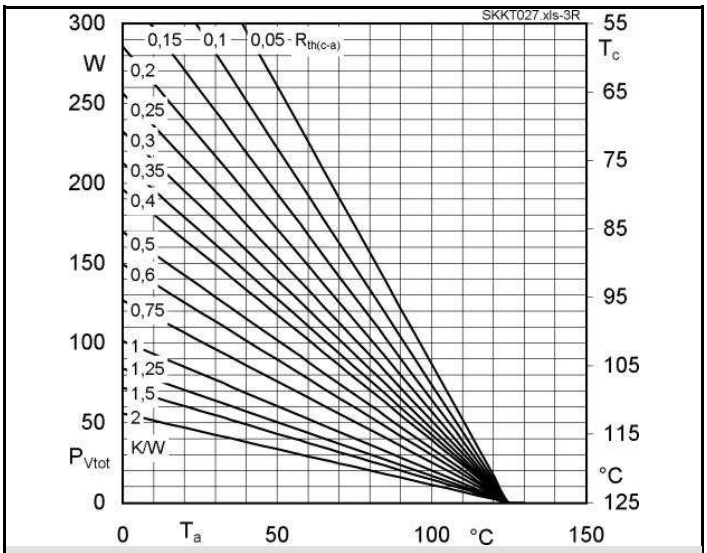



Fig. 3R Power dissipation of two modules vs. case temp.

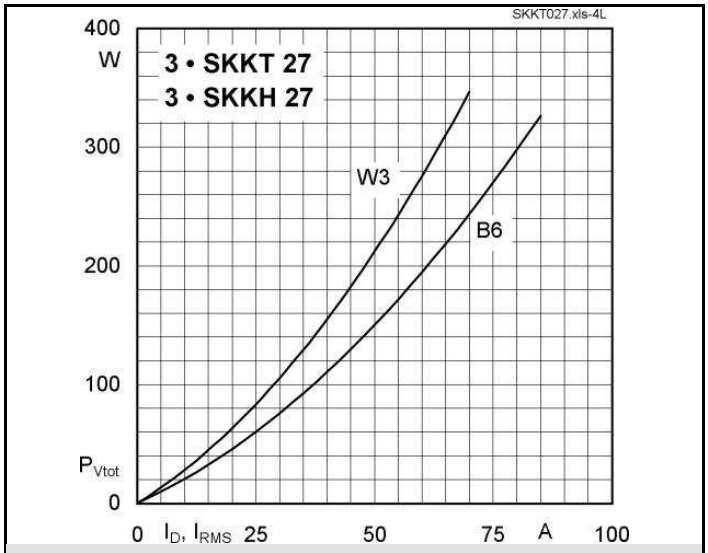



Fig. 4L Power dissipation of three modules vs. direct and rms current

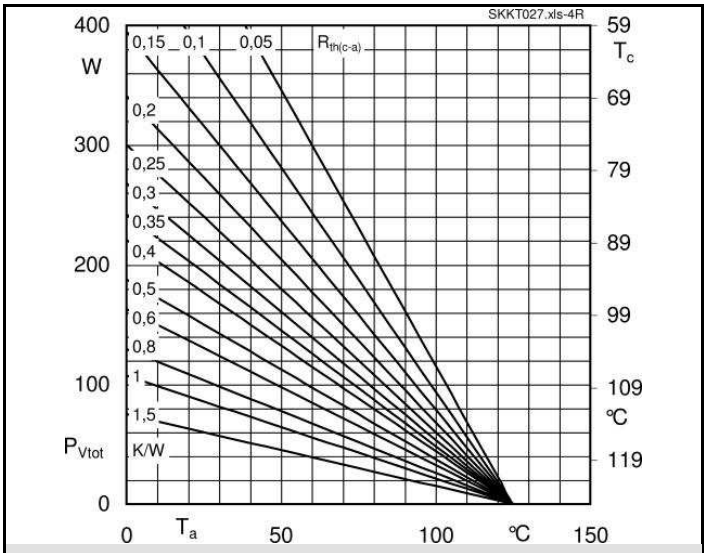



Fig. 4R Power dissipation of three modules vs. case temp.

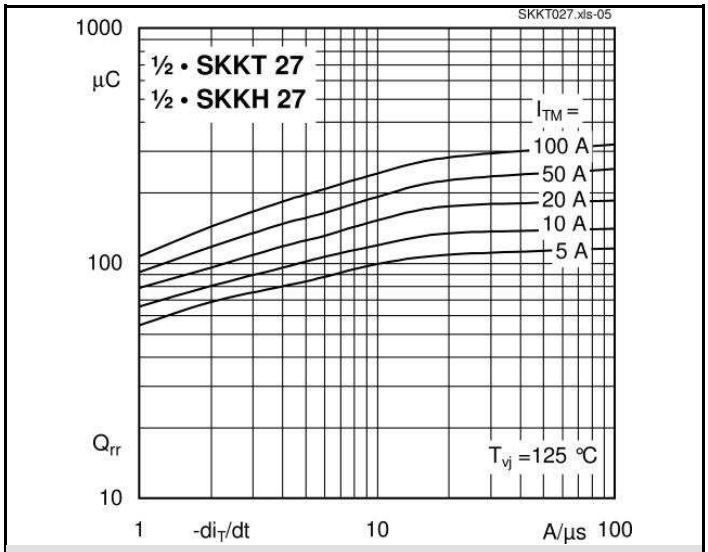



Fig. 5 Recovered charge vs. current decrease

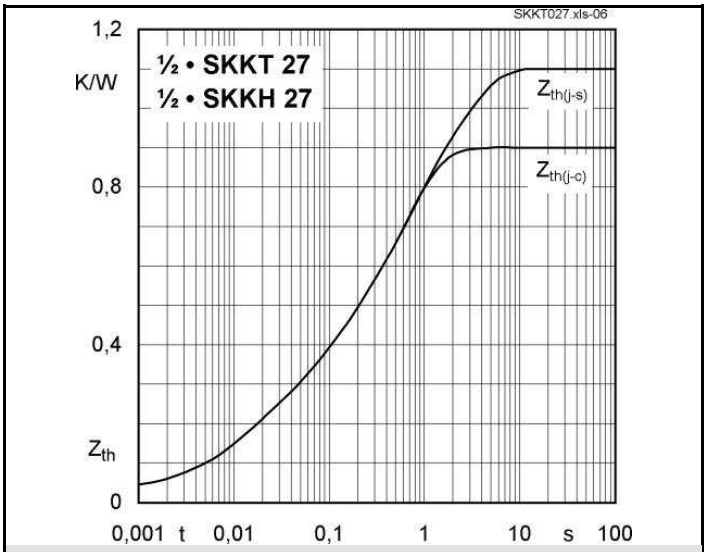



Fig. 6 Transient thermal impedance vs. time

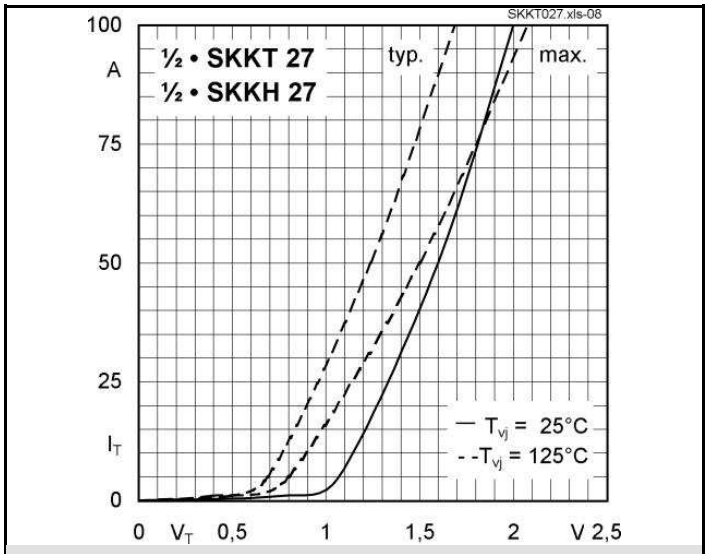



Fig. 7 On-state characteristics

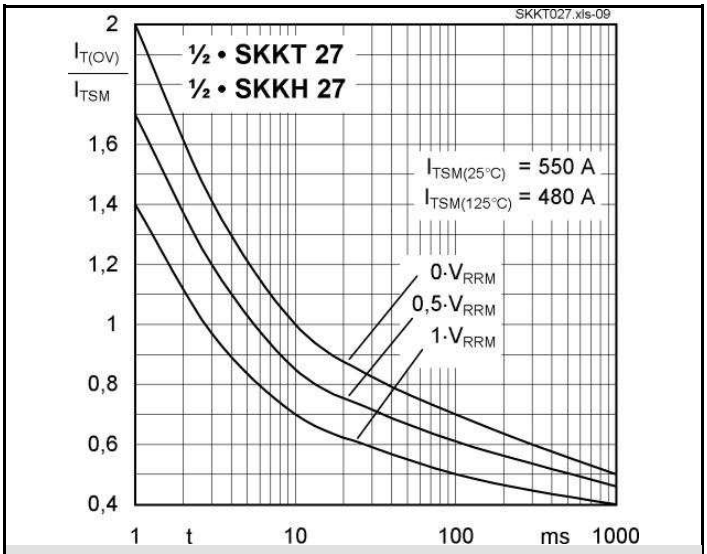



Fig. 8 Surge overload current vs. time

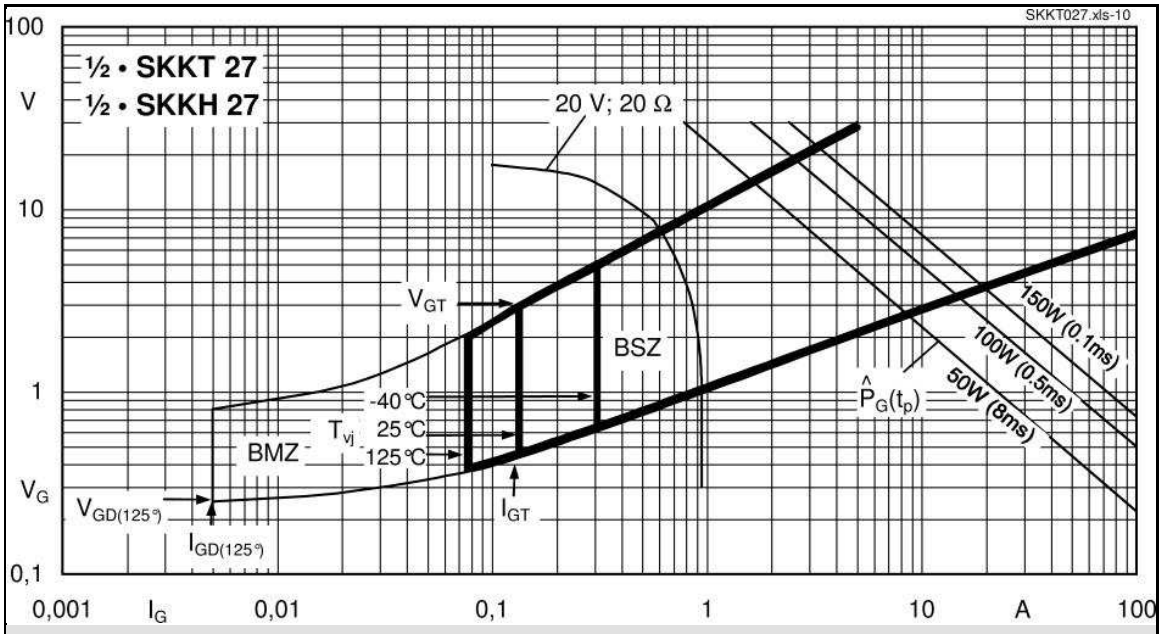
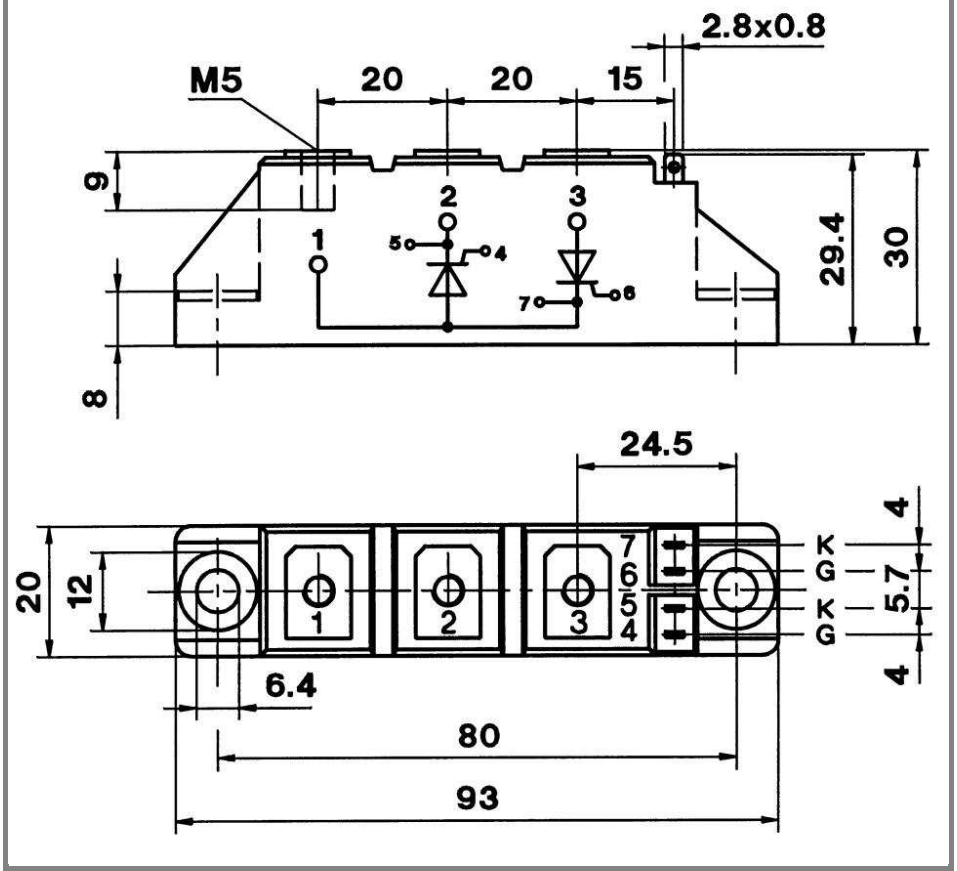
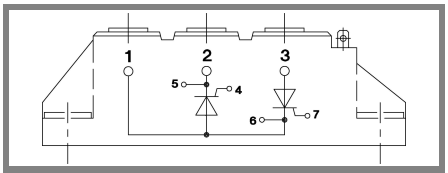


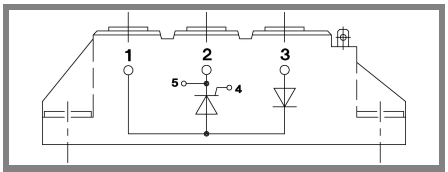
Fig. 9 Gate trigger characteristics

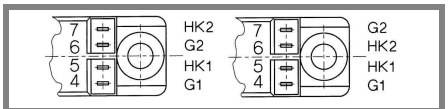
Dimensions in mm



Case A 46 (SKKT)


Case A 48 SKKT...B


Case A 47 SKKH



SKKT SKKT ...B

* 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 products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.