

# SKKT 500, SKKH 500



**SEMIPACK<sup>®</sup> 5**

## Thyristor / Diode Modules

**SKKT 500**

**SKKH 500**

### Features

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

### Typical Applications

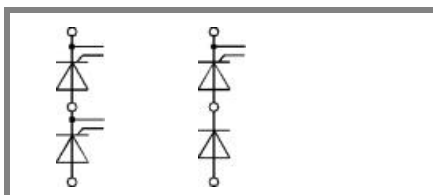
- AC motor softstarters
- Input converters for AC inverter drives
- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instructions

2) The screws must be lubricated

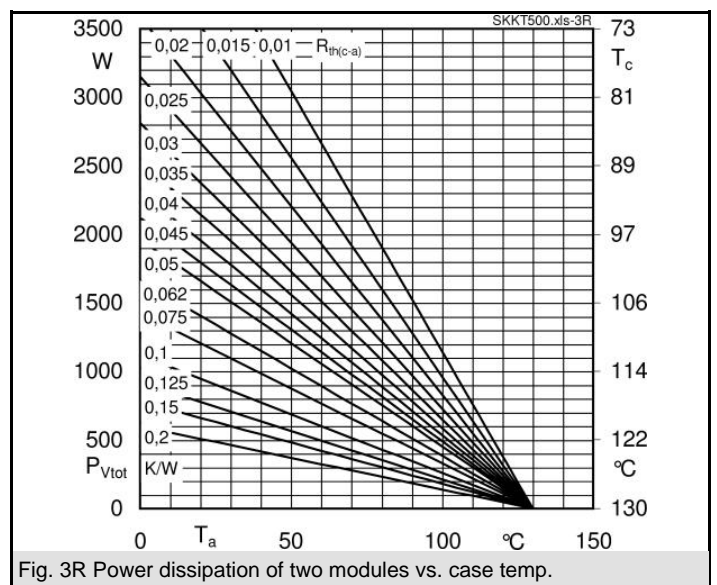
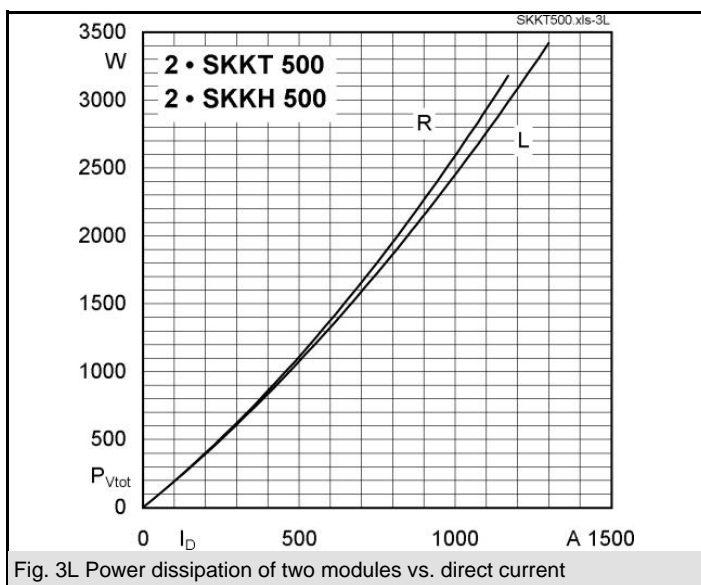
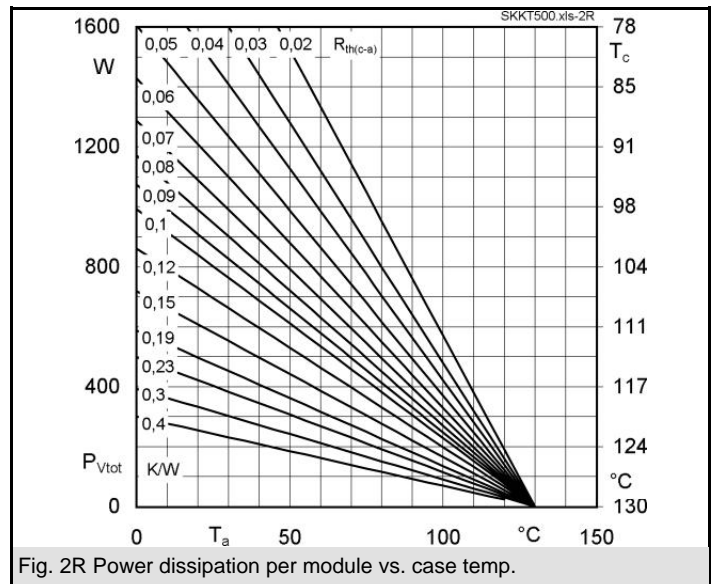
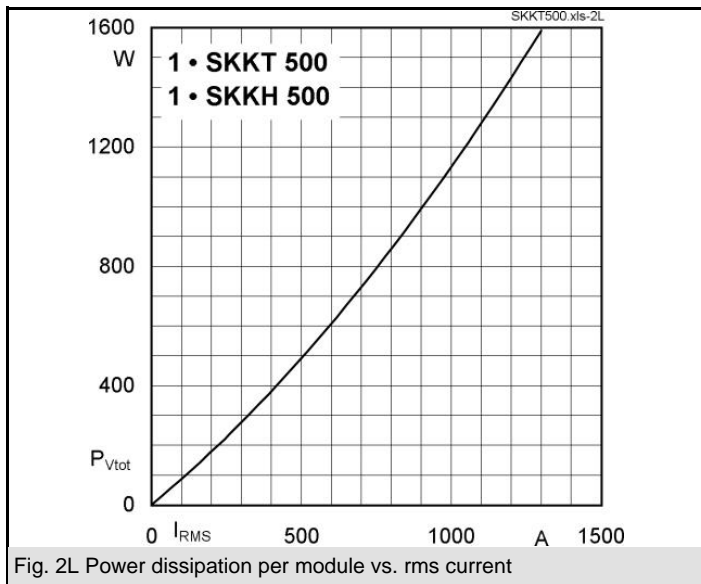
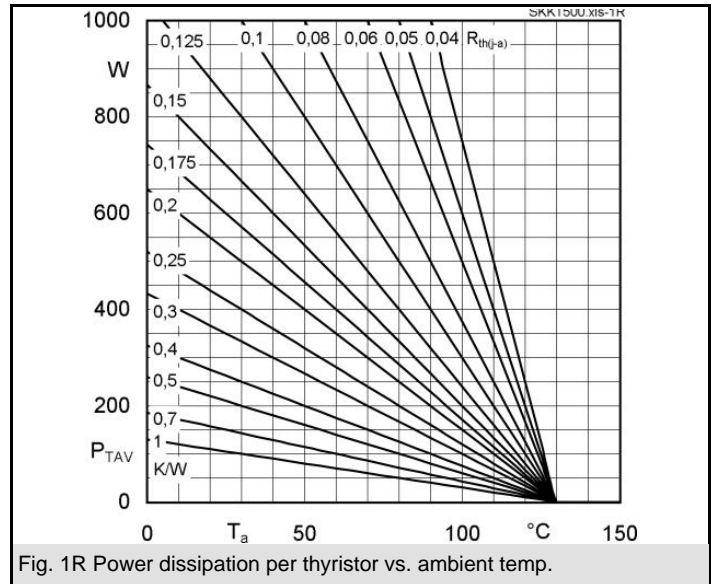
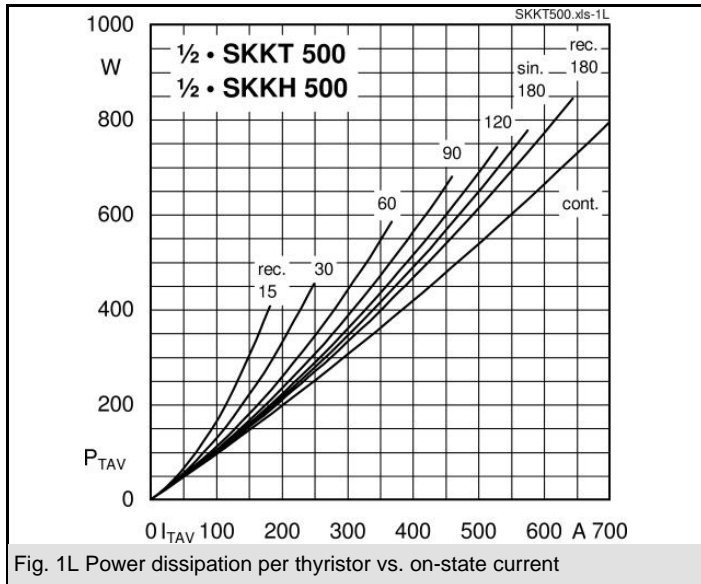
| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_{TRMS} = 920$ A (maximum value for continuous operation)<br>$I_{TAV} = 500$ A (sin. 180; $T_c = 89$ °C) |              |
|----------------|-------------------------|--|--------------|
| 900            | 800                     | SKKT 500/08E   | SKKH 500/08E |
| 1300           | 1200                    | SKKT 500/12E   | SKKH 500/12E |
| 1500           | 1400                    | SKKT 500/14E   | SKKH 500/14E |
| 1700           | 1600                    | SKKT 500/16E   | SKKH 500/16E |
| 1900           | 1800                    | SKKT 500/18E   | SKKH 500/18E |

| Symbol           | Conditions  | Values                  | Units            |
|------------------|---|-------------------------|------------------|
| $I_{TAV}$        | sin. 180; $T_c = 85$ (100) °C;                          | 540 (390)               | A                |
| $I_D$            | P16/200F; $T_a = 35$ °C; B2 / B6                        | 665 / 845               | A                |
| $I_{RMS}$        | P16/300F; $T_a = 35$ °C; W1 / W3                        | 850 / 3 * 670           | A                |
| $I_{TSM}$        | $T_{vj} = 25$ °C; 10 ms                                 | 17000                   | A                |
|                  | $T_{vj} = 130$ °C; 10 ms                                | 15000                   | A                |
| $i^2t$           | $T_{vj} = 25$ °C; 8,3 ... 10 ms                         | 1445000                 | A <sup>2</sup> s |
|                  | $T_{vj} = 130$ °C; 8,3 ... 10 ms                        | 1125000                 | A <sup>2</sup> s |
| $V_T$            | $T_{vj} = 25$ °C; $I_T = 1700$ A                        | max. 1,5                | V                |
| $V_{T(TO)}$      | $T_{vj} = 130$ °C                                       | max. 0,925              | V                |
| $r_T$            | $T_{vj} = 130$ °C                                       | max. 0,27               | mΩ               |
| $I_{DD}, I_{RD}$ | $T_{vj} = 130$ °C; $V_{RD} = V_{RRM}, V_{DD} = V_{DRM}$ | max. 100                | 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. 200                | A/μs             |
| $(dv/dt)_{cr}$   | $T_{vj} = 130$ °C                                       | max. 1000               | V/μs             |
| $t_q$            | $T_{vj} = 130$ °C                                       | 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.             | 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                       | 0,062 / 0,031           | K/W              |
| $R_{th(j-c)}$    | sin. 180; per thyristor / per module                    | 0,065 / 0,032           | K/W              |
| $R_{th(j-c)}$    | rec. 120; per thyristor / per module                    | 0,07 / 0,035            | K/W              |
| $R_{th(c-s)}$    | per thyristor / per module                              | 0,02 / 0,01             | 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 % <sup>1)</sup>  | Nm               |
| $M_t$            | to terminals  | 12 ± 15 % <sup>2)</sup> | Nm               |
| $a$              |   | 5 * 9,81                | m/s <sup>2</sup> |
| $m$              | approx.   | 1420                    | g                |
| Case             | SKKT  | A 60 a                  |                  |
|                  | SKKH  | A 66 a                  |                  |

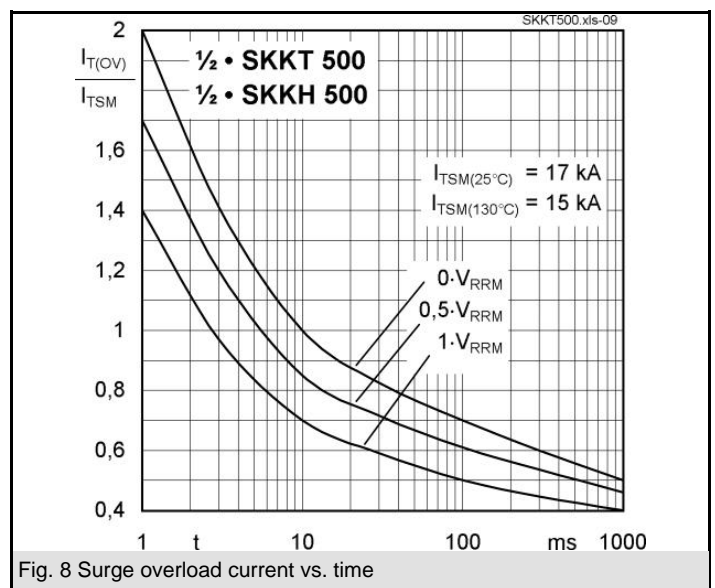
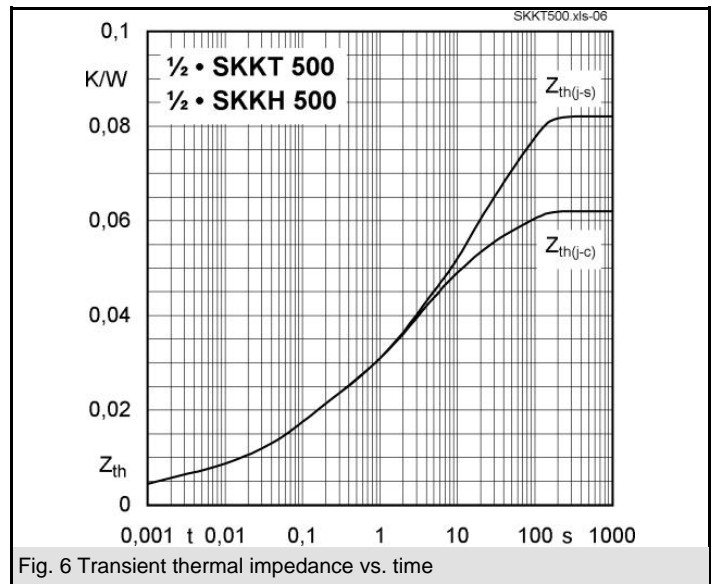
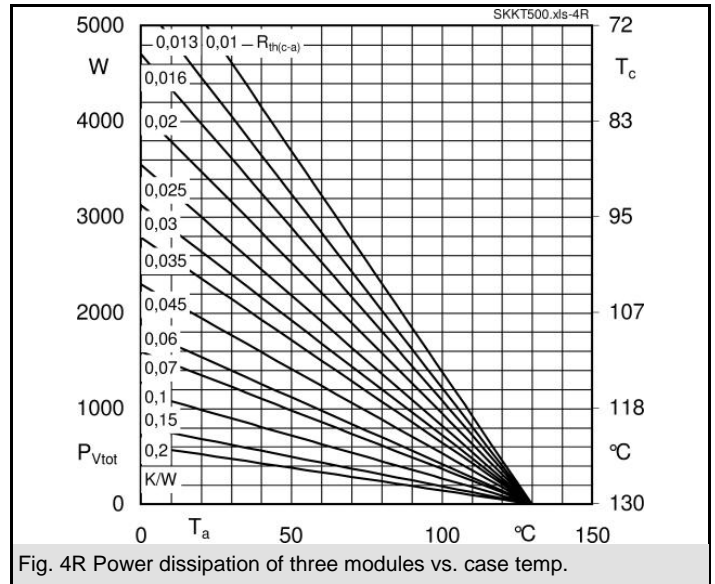
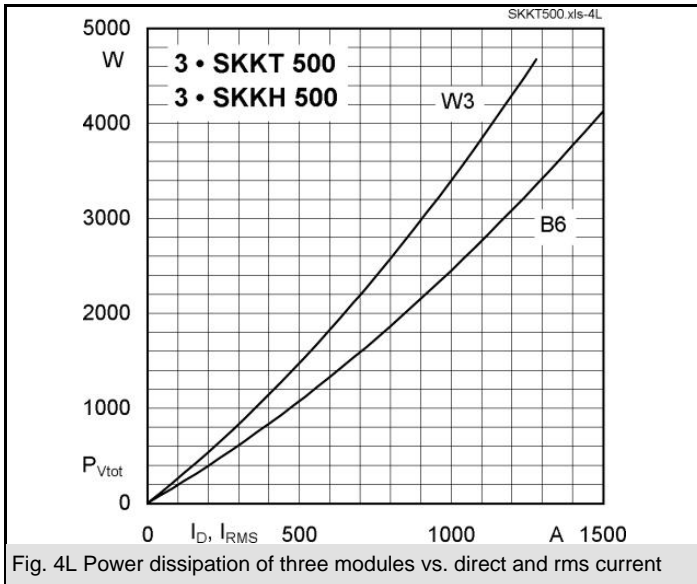


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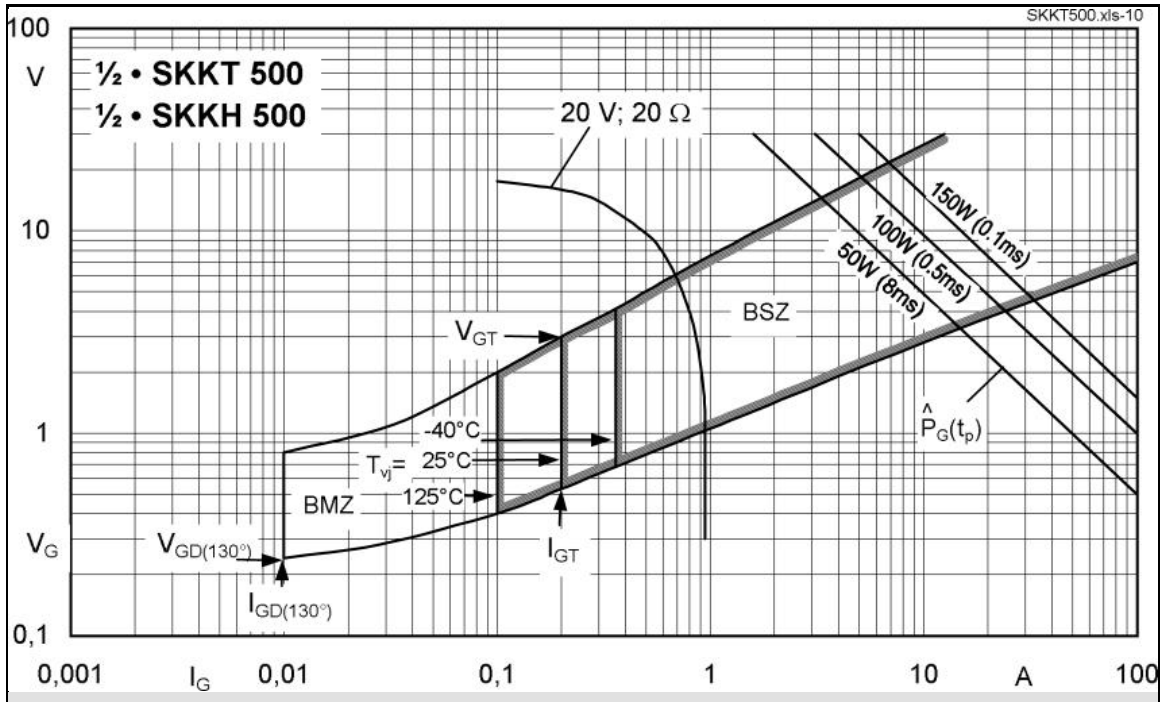
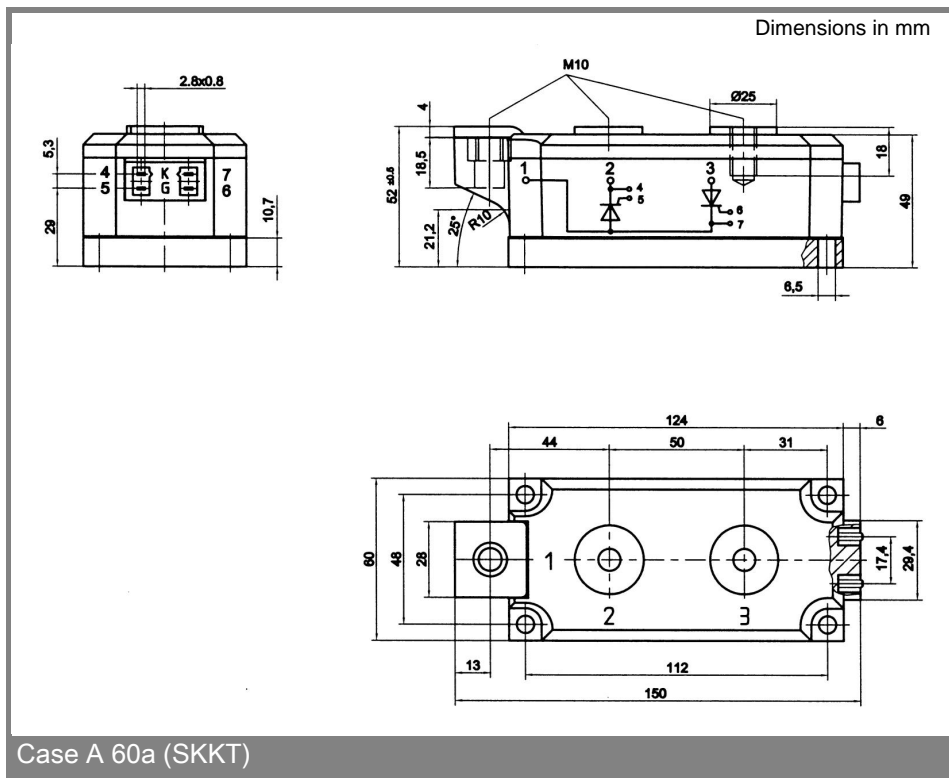
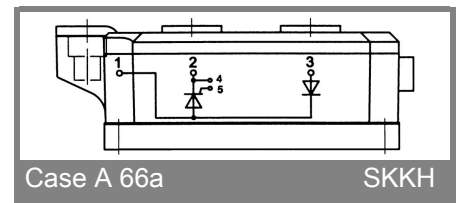


Fig. 9 Gate trigger characteristics



Case A 60a (SKKT)



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