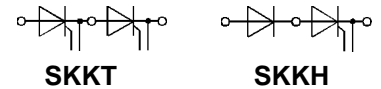


|           |                        |                |  |                      |
|-----------|------------------------|----------------|--|----------------------|
| $V_{RSM}$ | $V_{RRM}$<br>$V_{DRM}$ | $(dv/dt)_{cr}$ | $I_{TRMS}$ (maximum values for continuous operation)           |                      |
|           |                        |                | 195 A  |                      |
| V         | V                      | V/ $\mu$ s     | $I_{TAV}$ (sin. 180; $T_{case} = 85\text{ }^{\circ}\text{C}$ ) |                      |
|           |                        |                | 128 A  |                      |
| 900       | 800                    | 500            | <b>SKKT 122/08 D</b>   | <b>SKKH 122/08 D</b> |
| 1300      | 1200                   | 1000           | <b>SKKT 122/12 E</b>   | <b>SKKH 122/12 E</b> |
| 1500      | 1400                   | 1000           | <b>SKKT 122/14 E</b>   | <b>SKKH 122/14 E</b> |
| 1700      | 1600                   | 1000           | <b>SKKT 122/16 E</b>   | <b>SKKH 122/16 E</b> |
| 1900      | 1800                   | 1000           | <b>SKKT 122/18 E</b>   | <b>SKKH 122/18 E</b> |

## SEMIPACK® 2 Thyristor / Diode Modules

### SKKT 122 SKKH 122



SKKT

SKKH

| Symbol              | Conditions   | SKKT 122<br>SKKH 122                        | Units   |
|---------------------|--|---|---|
| $I_{TAV}$           | sin. 180; $T_{case} = 88\text{ }^{\circ}\text{C}$<br>$T_{case} = 80\text{ }^{\circ}\text{C}$   | 122<br>140                                  | A<br>A  |
| $I_D$               | B2/B6<br>$T_{amb} = 45\text{ }^{\circ}\text{C}$ ; P 3/180<br>$T_{amb} = 35\text{ }^{\circ}\text{C}$ ; P 3/180F   | 82 / 105<br>170 / 200                       | A<br>A  |
| $I_{RMS}$           | W1/W3<br>$T_{amb} = 35\text{ }^{\circ}\text{C}$ ; P 16/200F<br>$T_{amb} = 35\text{ }^{\circ}\text{C}$ ; P 3/180F<br>$T_{amb} = 35\text{ }^{\circ}\text{C}$ ; P 16/200F | 235 / 315<br>235 / 3 x 160<br>295 / 3 x 245 | A<br>A<br>A   |
| $I_{TSM}$           | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; 10 ms<br>$T_{vj} = 125\text{ }^{\circ}\text{C}$ ; 10 ms  | 3 600<br>3 200                              | A<br>A  |
| $i^2t$              | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; 8,3 ... 10 ms<br>$T_{vj} = 125\text{ }^{\circ}\text{C}$ ; 8,3 ... 10 ms  | 64 800<br>51 200                            | $\text{A}^2\text{s}$<br>$\text{A}^2\text{s}$  |
| $t_{gd}$            | $T_{vj} = 25\text{ }^{\circ}\text{C}$ $I_G = 1\text{ A}$<br>$di_G/dt = 1\text{ A}/\mu\text{s}$   | 1   | $\mu\text{s}$   |
| $t_{gr}$            | $V_D = 0,67 \cdot V_{DRM}$   | 2   | $\mu\text{s}$   |
| $(di/dt)_{cr}$      | $T_{vj} = 125\text{ }^{\circ}\text{C}$   | 200   | $\text{A}/\mu\text{s}$  |
| $t_q$               | $T_{vj} = 125\text{ }^{\circ}\text{C}$   | typ. 120                                    | $\mu\text{s}$   |
| $I_H$               | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; typ./max.  | 100 / 300                                   | mA  |
| $I_L$               | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; $R_G = 33\ \Omega$ ; typ./max.   | 0,2 / 0,5                                   | A   |
| $V_T$               | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; $I_T = 360\text{ A}$   | 1,55  | V   |
| $V_{T(TO)}$         | $T_{vj} = 125\text{ }^{\circ}\text{C}$   | 0,85  | V   |
| $r_T$               | $T_{vj} = 125\text{ }^{\circ}\text{C}$   | 2,0   | $\text{m}\Omega$  |
| $I_{DD}$ ; $I_{RD}$ | $T_{vj} = 125\text{ }^{\circ}\text{C}$ ; $V_{DRM}$ ; $V_{RRM}$   | 40  | mA  |
| $V_{GT}$            | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; d.c.   | 2   | V   |
| $I_{GT}$            | $T_{vj} = 25\text{ }^{\circ}\text{C}$ ; d.c.   | 150   | mA  |
| $V_{GD}$            | $T_{vj} = 125\text{ }^{\circ}\text{C}$ ; d.c.  | 0,25  | V   |
| $I_{GD}$            | $T_{vj} = 125\text{ }^{\circ}\text{C}$ ; d.c.  | 10  | mA  |
| $R_{thjh}$          | cont. } per thyristor /<br>sin. 180 } per module<br>rec. 120 }   | 0,2 / 0,1<br>0,21 / 0,105<br>0,22 / 0,11    | $^{\circ}\text{C}/\text{W}$<br>$^{\circ}\text{C}/\text{W}$<br>$^{\circ}\text{C}/\text{W}$ |
| $R_{thch}$          |  | 0,13 / 0,065                                | $^{\circ}\text{C}/\text{W}$   |
| $T_{vj}$            |  | - 40 ... + 125                              | $^{\circ}\text{C}$  |
| $T_{stg}$           |  | - 40 ... + 125                              | $^{\circ}\text{C}$  |
| $V_{isol}$          | a. c. 50 Hz; r.m.s.; 1 s/1 min   | 3600 / 3000                                 | V~  |
| $M_1$               | to heatsink  | 5 (44 lb. in.) $\pm 15\%$ <sup>1)</sup>     | Nm  |
| $M_2$               | to terminals   | 5 (44 lb. in.) $\pm 15\%$                   | Nm  |
| a                   |  | 5 · 9,81                                    | $\text{m}/\text{s}^2$   |
| w                   | approx.  | 250   | g   |
| Case                | → page B 1 – 96  | SKKT 122: A 21<br>SKKH 122: A 22            |   |

### 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)
- Softstarter
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

<sup>1)</sup> See the assembly instructions

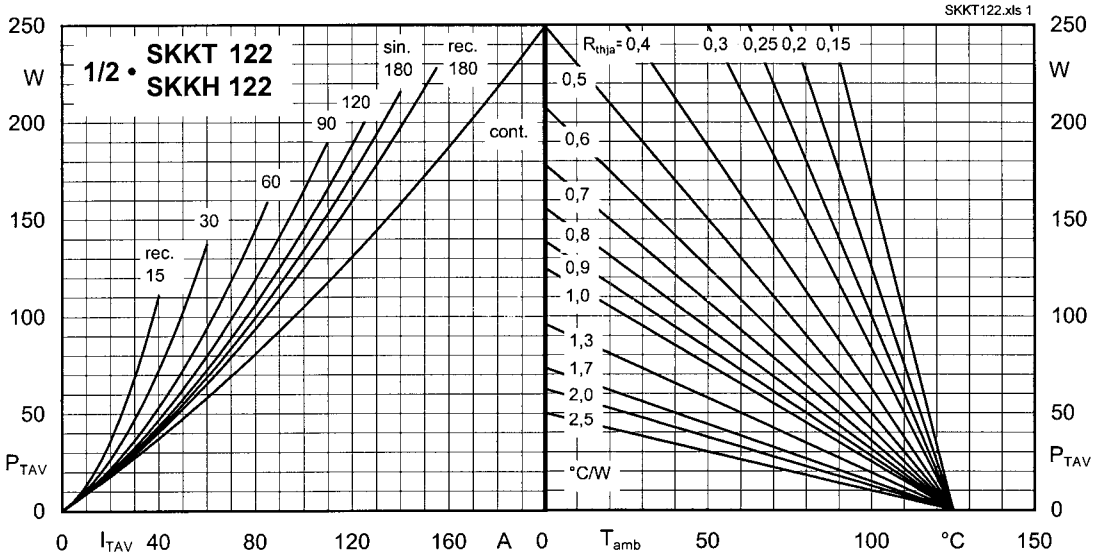


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

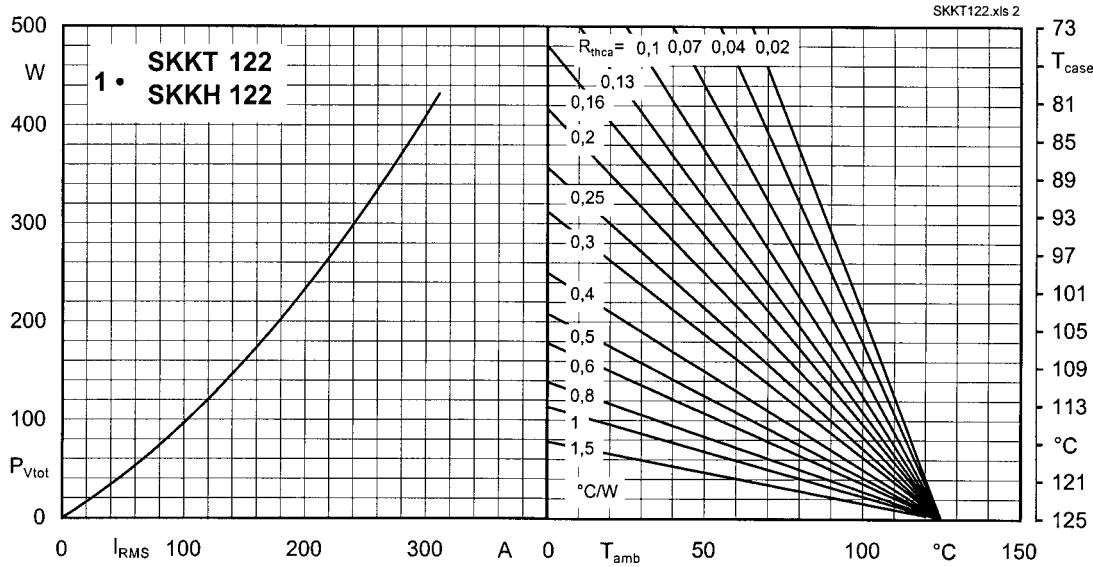


Fig. 2 Power dissipation per module vs. rms current and case temperature

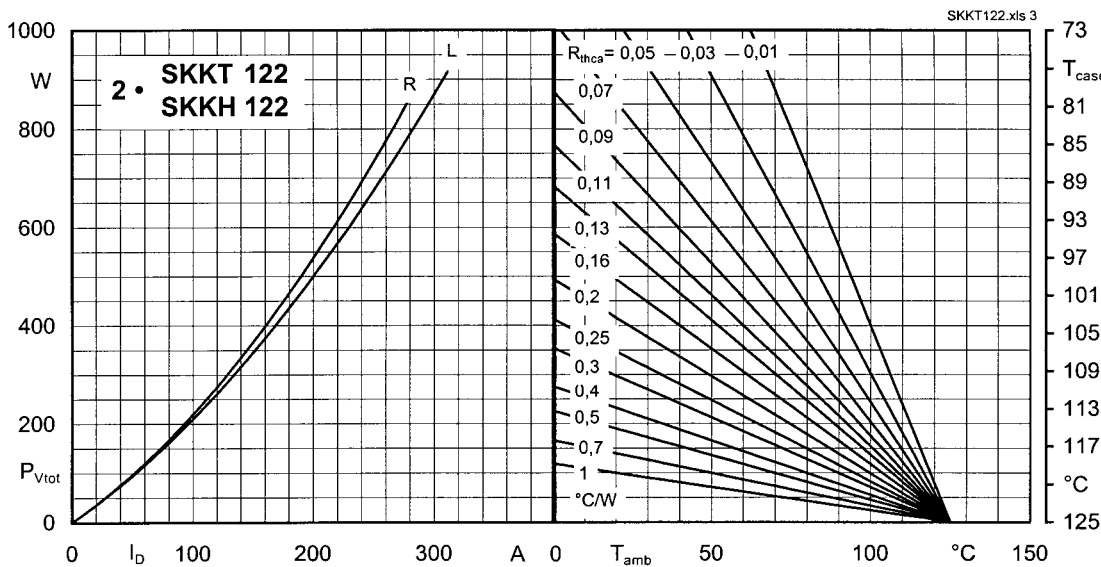


Fig. 3 Power dissipation of two module vs. direct current and case temperature

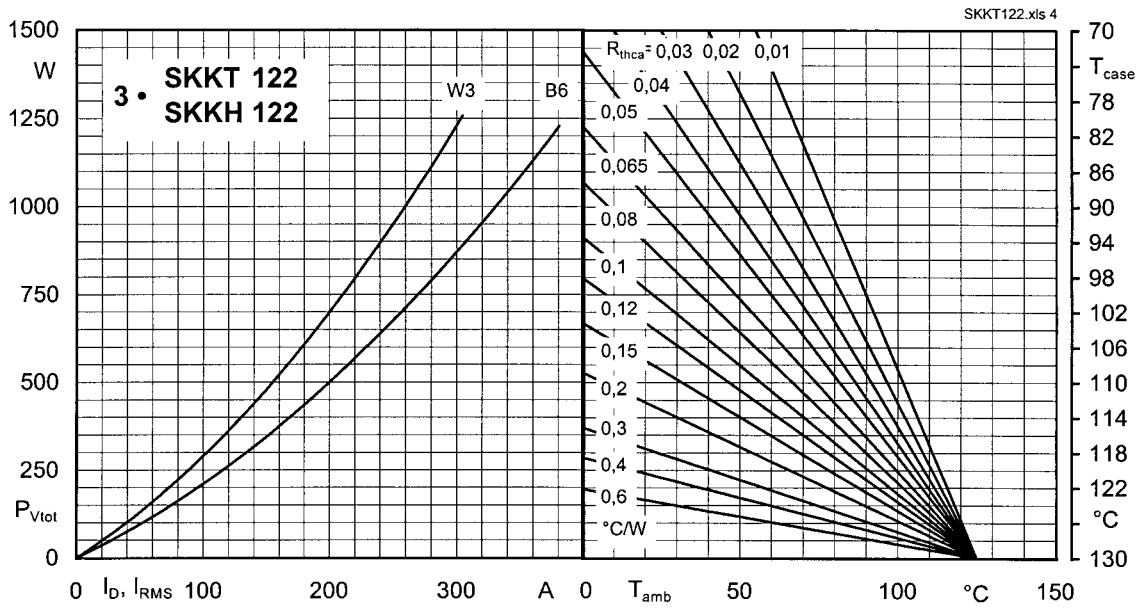


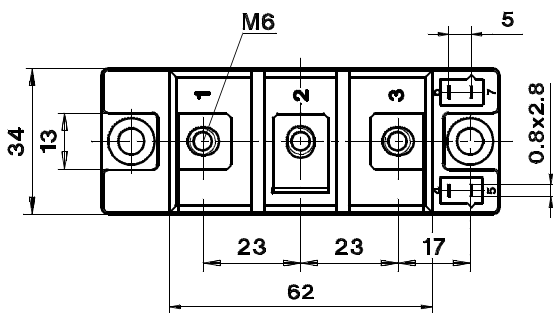
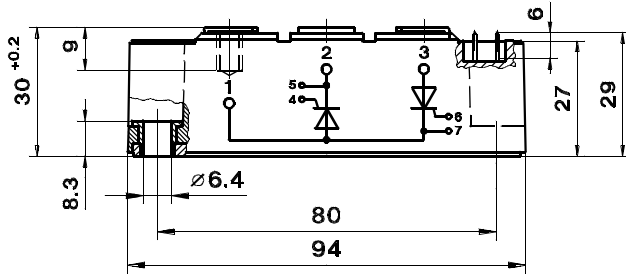
Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

**SKKT 122, 132, 162**

Case A 21

SEMIPACK® 2

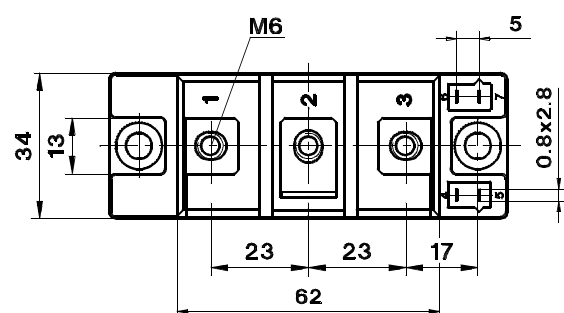
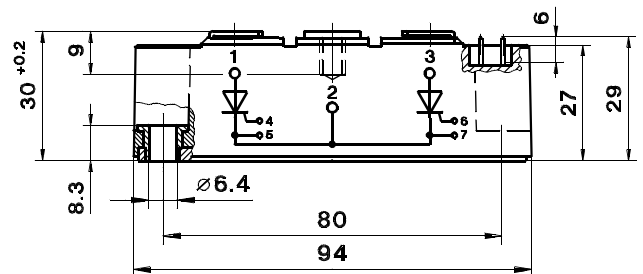
UL recognized, file no. E 63 532

**SKMT 132**

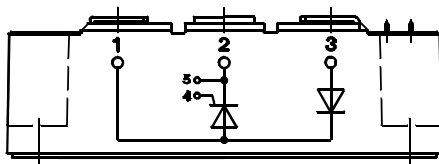
Case A 50

SEMIPACK® 2

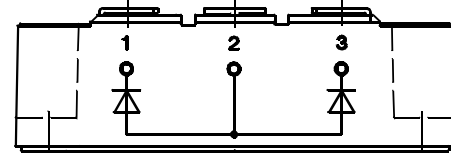
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**SKKH 122, 132, 162**

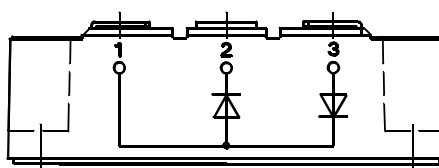
Case A 22

**SKND 165**

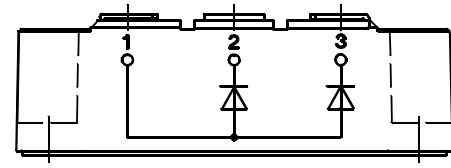
Case A 52

**SKKD 162**

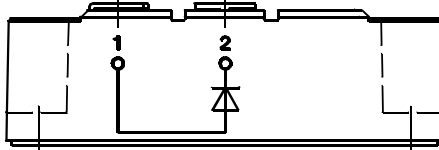
Case A 23

**SKND 162**

Case A 57

**SKKE 162**

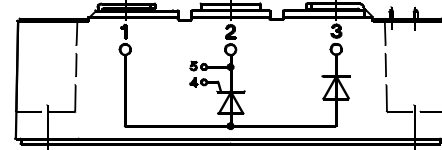
Case A 24



Dimensions in mm

**SKNH 132**

Case A 61



Dimensions in mm