

# SKKT 162, SKKH 162



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

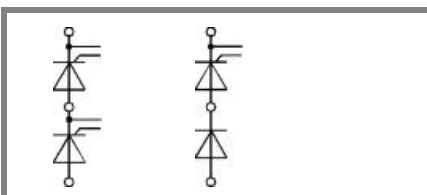
### Typical Applications

- 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

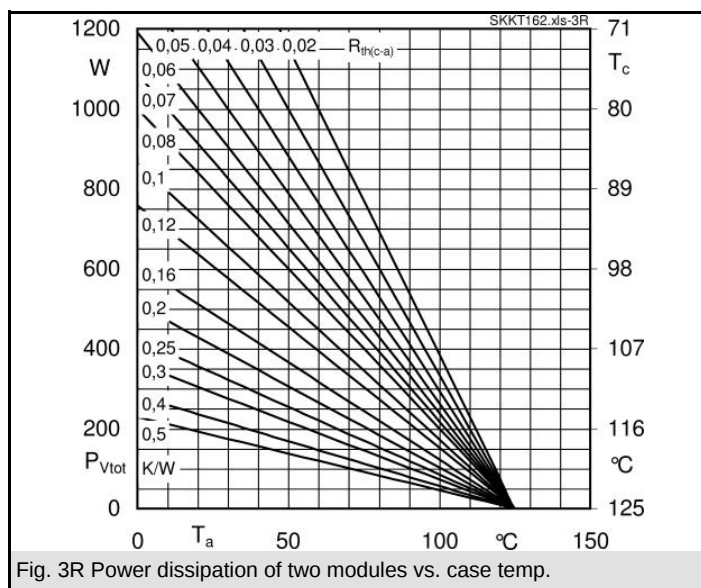
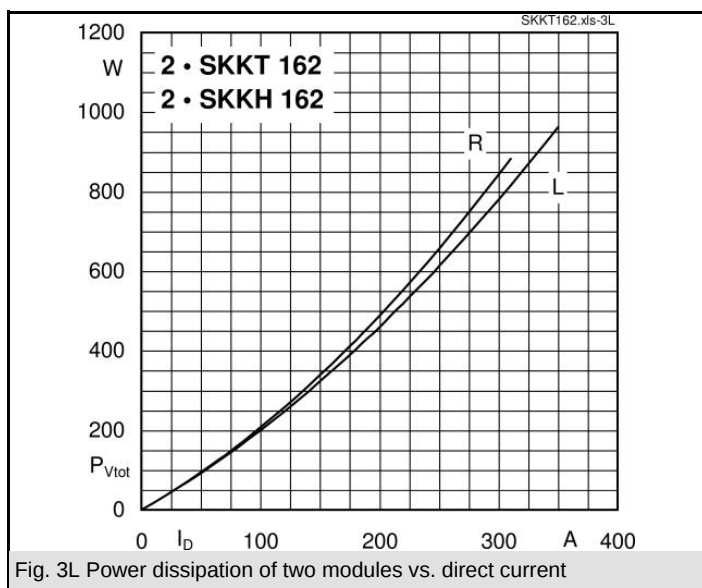
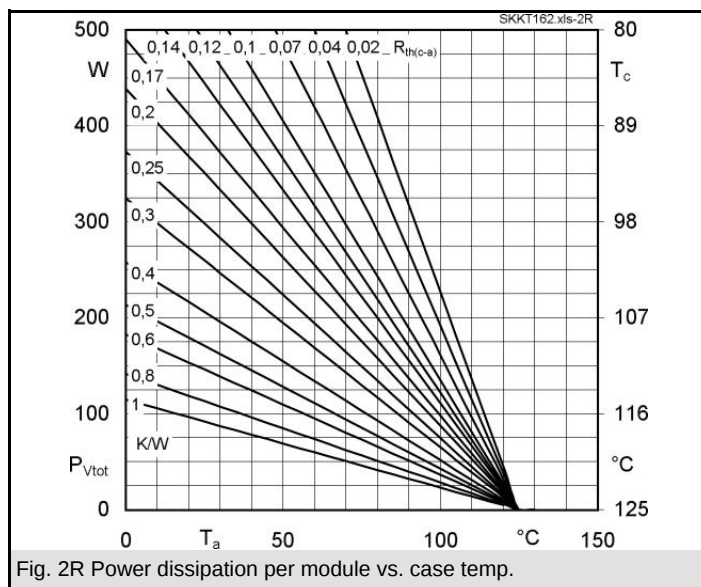
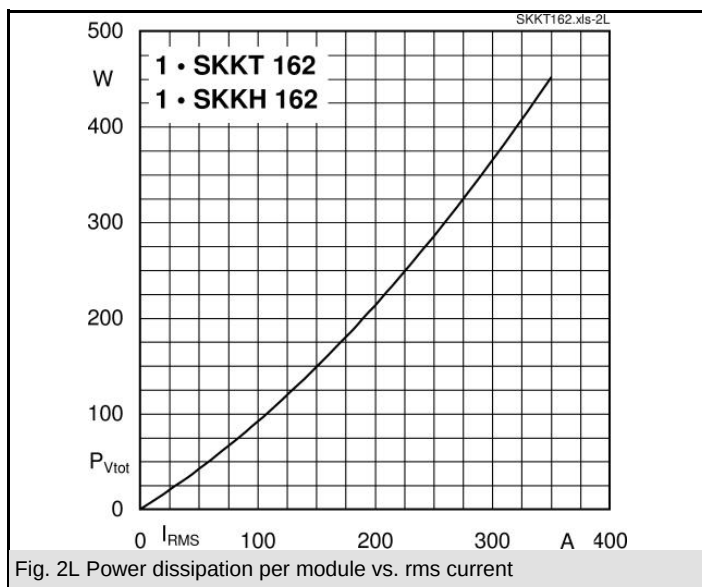
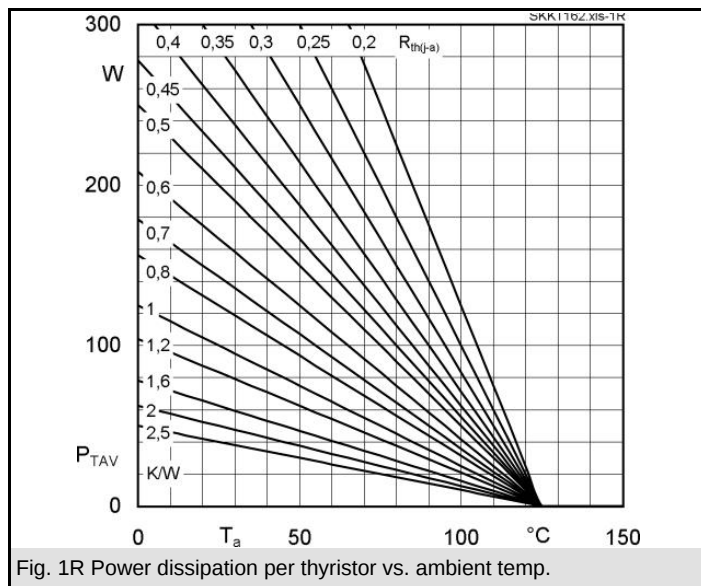
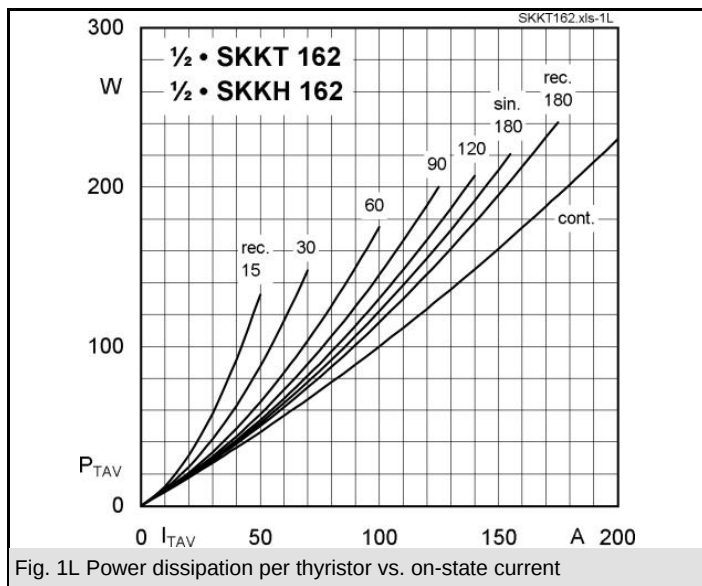
| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_{TRMS} = 250$ A (maximum value for continuous operation)<br>$I_{TAV} = 160$ A (sin. 180; $T_c = 83$ °C) |              |  |
|----------------|-------------------------|------------------------------------------------------------------------------------------------------------|--------------|--|
| 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     |
| $i^2t$           | $T_{vj} = 25$ °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 % <sup>1)</sup> | 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



# SKKT 162, SKKH 162

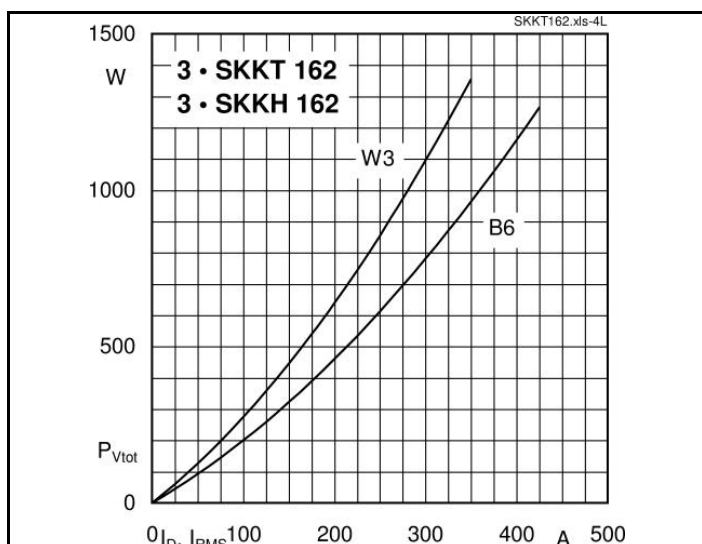


Fig. 4L Power dissipation of three modules vs. direct and rms current

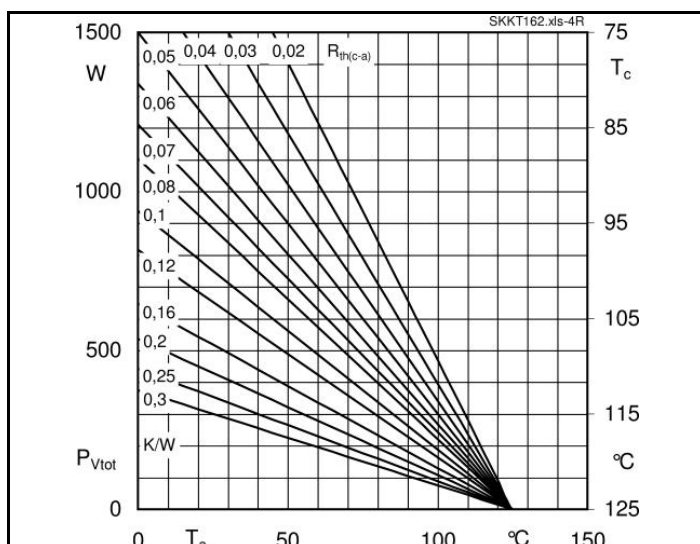


Fig. 4R Power dissipation of three modules vs. case temp.

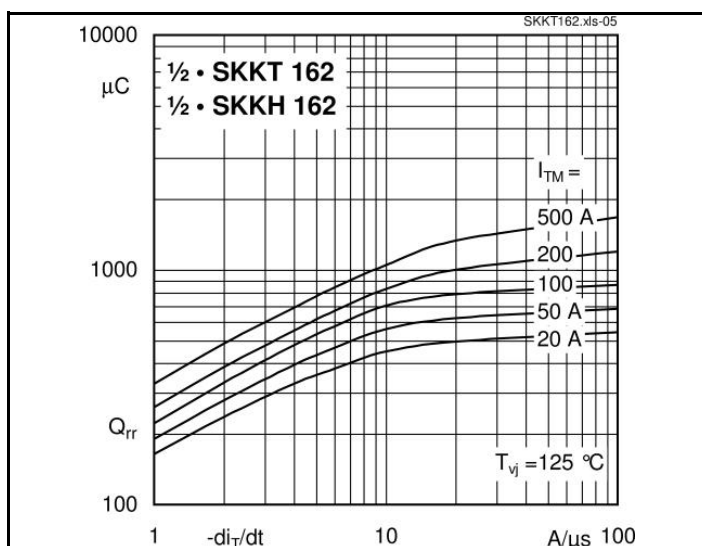


Fig. 5 Recovered charge vs. current decrease

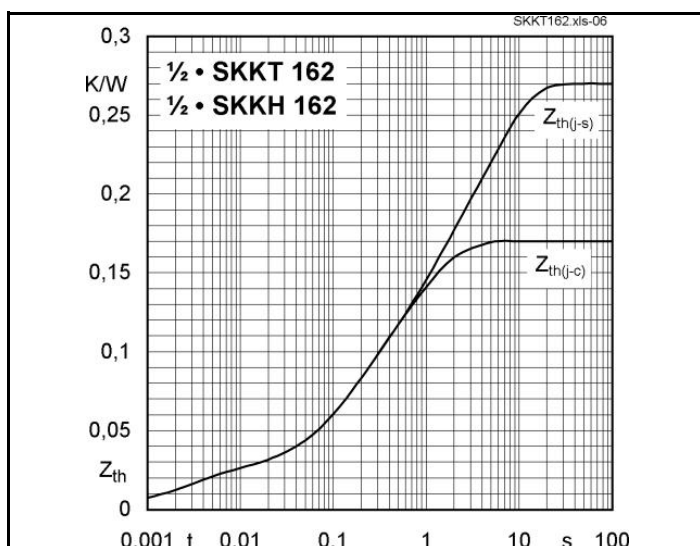


Fig. 6 Transient thermal impedance vs. time

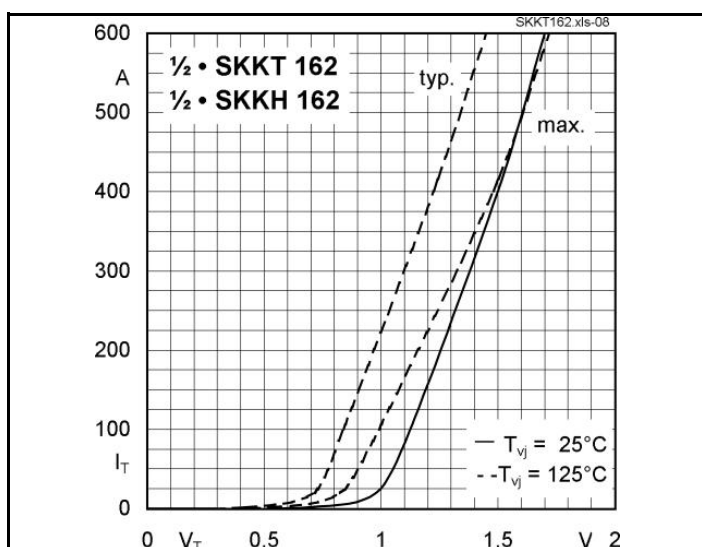


Fig. 7 On-state characteristics

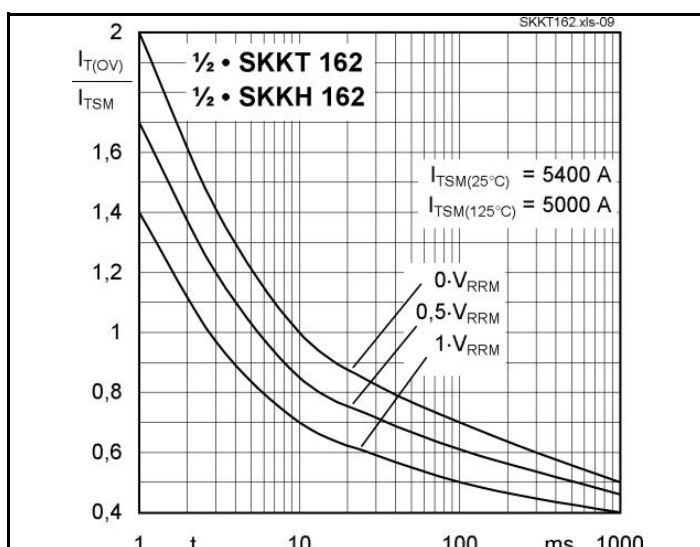
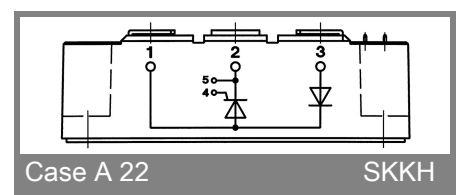
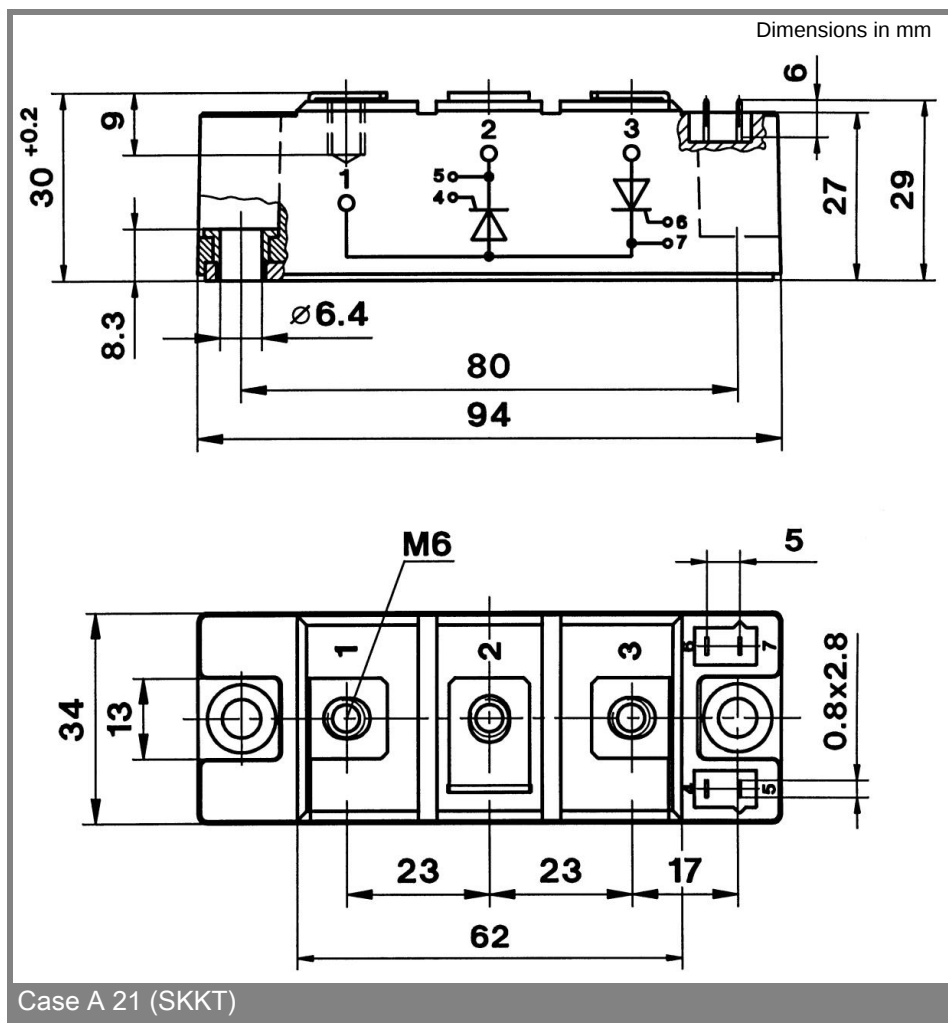
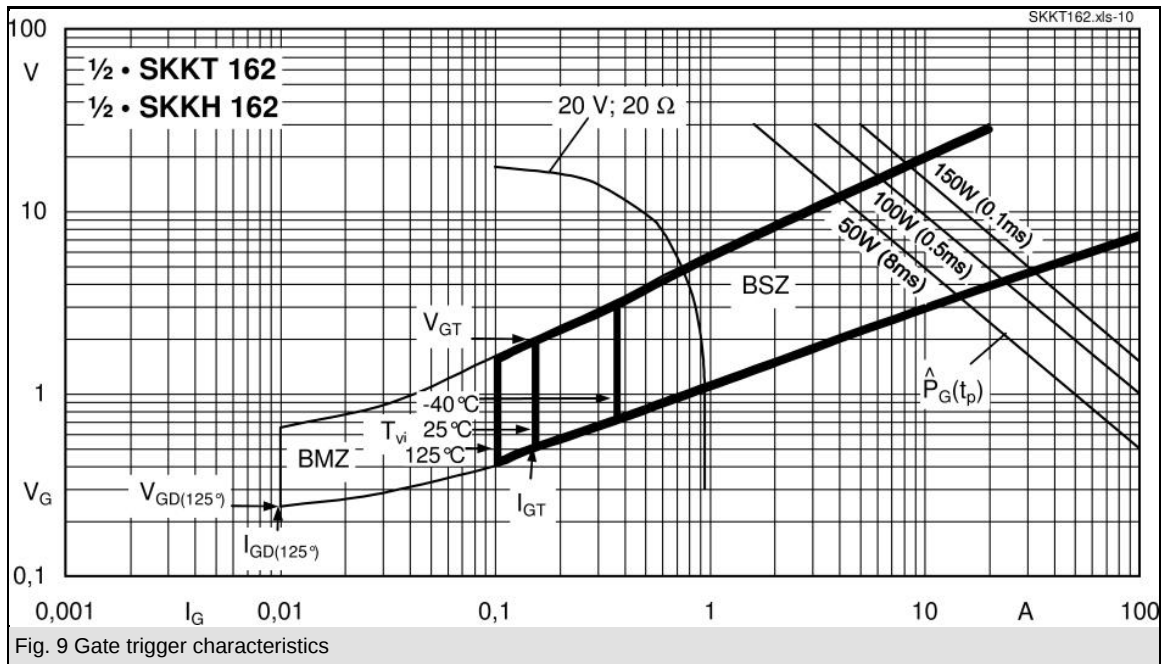


Fig. 8 Surge overload current vs. time



This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.