

SKKT 280, SKKH 280



SEMIPACK® 3 new

Thyristor / Diode Modules

SKKH 280

SKKT 280

Features

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

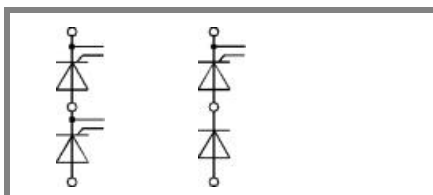
Typical Applications*

- DC motor control (e. g. for machine tools)
- AC motor starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instruction

| V_{RSM} V | V_{RRM}, V_{DRM} V | $I_{TRMS} = 440$ A (maximum value for continuous operation) $I_{TAV} = 280$ A (sin. 180; $T_c = 79$ °C) | |
|----------------|-------------------------|--|-----------------|
| 2100 | 2000 | SKKT 280/20E H4 | SKKH 280/20E H4 |
| 2300 | 2200 | SKKT 280/22E H4 | SKKH 280/22E H4 |

| Symbol | Conditions | Values | Units |
|------------------|---|------------------------|--------------------------------------|
| I_{TAV} | sin. 180; $T_c = 79$ (85) °C; | 280 (252) | A |
| I_{TSM} | $T_{vj} = 25$ °C; 10 ms $T_{vj} = 125$ °C; 10 ms | 8500 7500 | A A |
| i^2t | $T_{vj} = 25$ °C; 8,3 ... 10 ms $T_{vj} = 125$ °C; 8,3 ... 10 ms | 361000 281000 | A ² s A ² s |
| V_T | $T_{vj} = 25$ °C; $I_T = 750$ A | max. 1,55 | V |
| $V_{T(TO)}$ | $T_{vj} = 125$ °C | max. 0,9 | V |
| r_T | $T_{vj} = 125$ °C | max. 0,75 | mΩ |
| $I_{DD}; I_{RD}$ | $T_{vj} = 125$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$ | max. 90 | 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. 250 | 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 / 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} | $T_{vj} = 125$ °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 | 0,11 / 0,055 | K/W |
| $R_{th(j-c)}$ | sin. 180; per thyristor / per module | 0,116 / 0,058 | K/W |
| $R_{th(j-c)}$ | rec. 120; per thyristor / per module | 0,13 / 0,065 | K/W |
| $R_{th(c-s)}$ | per thyristor / per module | 0,04 / 0,02 | 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. | 4800 / 4000 | V~ |
| M_s | to heatsink | 9 ± 15 % ¹⁾ | Nm |
| M_t | to terminal | 9 ± 15 % | Nm |
| a | | 5 * 9,81 | m/s ² |
| m | approx. | 600 | g |
| Case | SKKT SKKH | A 73b A 76b | |



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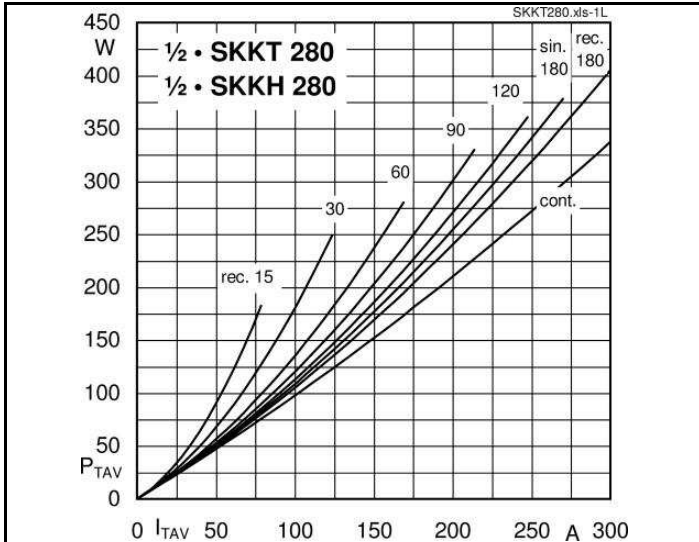


Fig. 1L Power dissipation per thyristor vs. on-state current

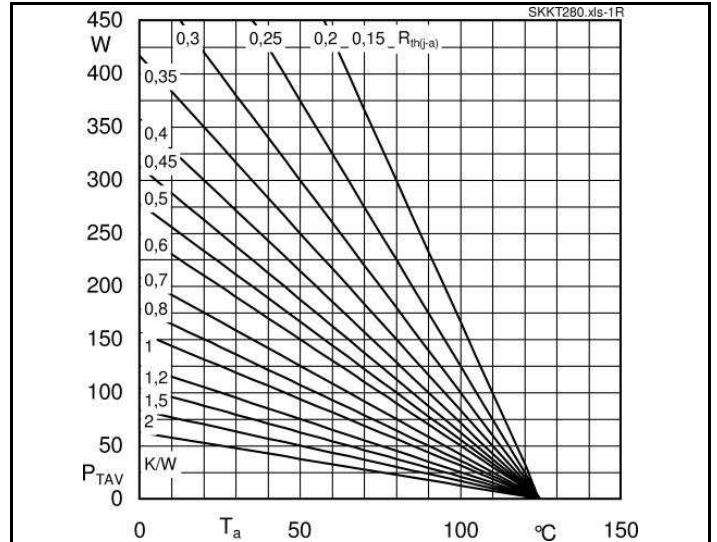


Fig. 1R Power dissipation per thyristor vs. ambient temp.

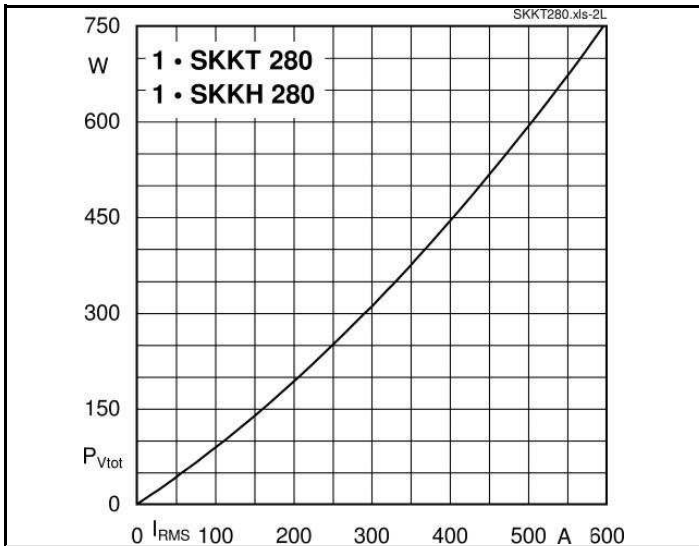


Fig. 2L Power dissipation per module vs. rms current

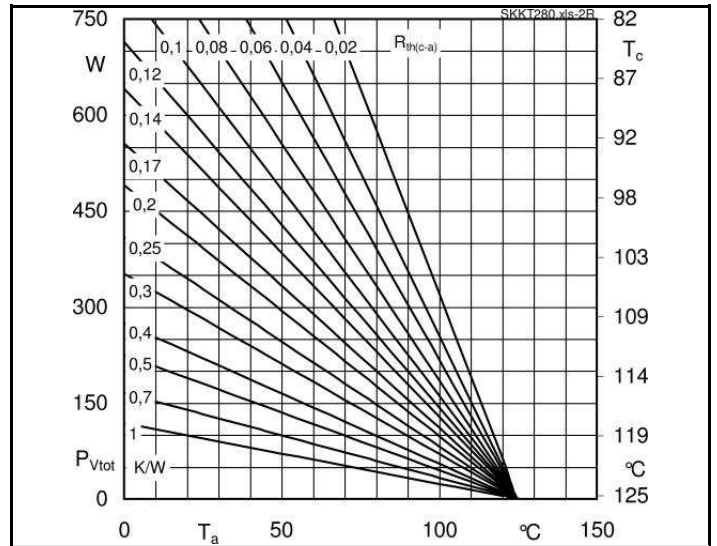


Fig. 2R Power dissipation per module vs. case temp.

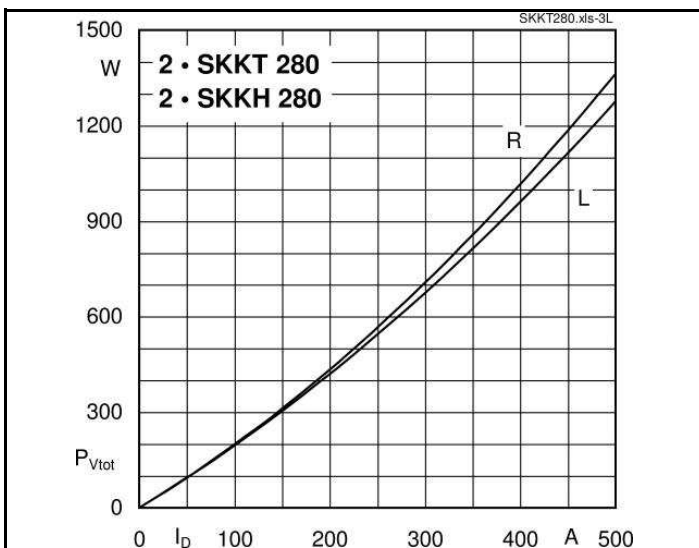


Fig. 3L Power dissipation of two modules vs. direct current

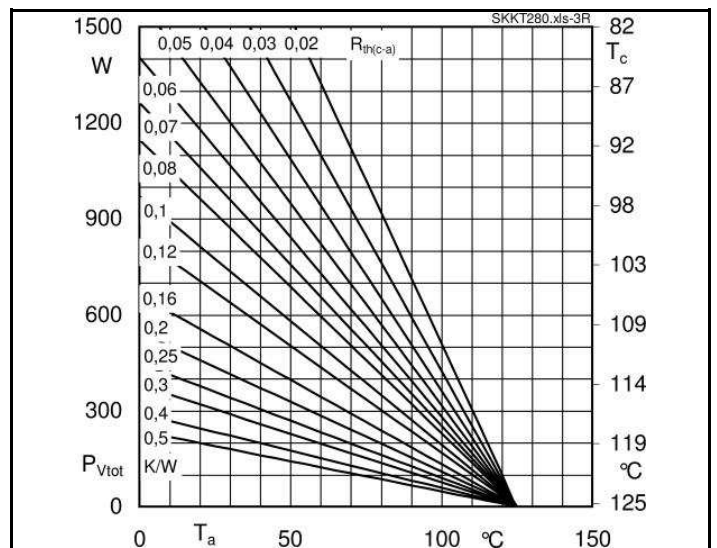
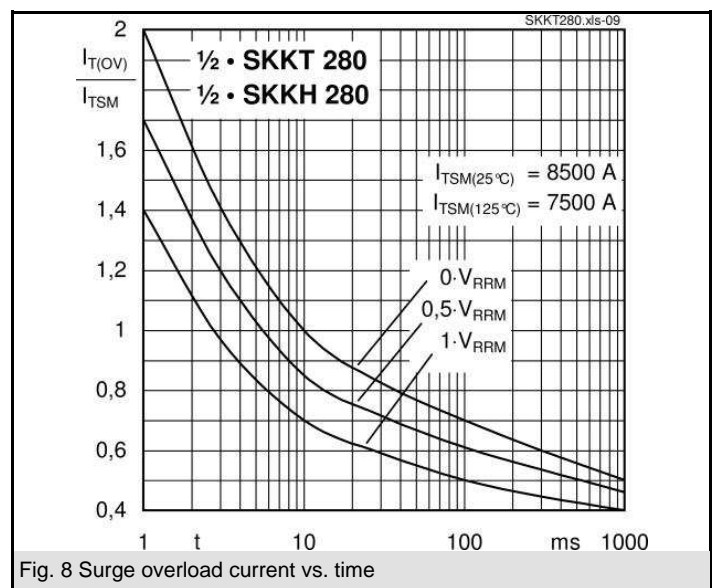
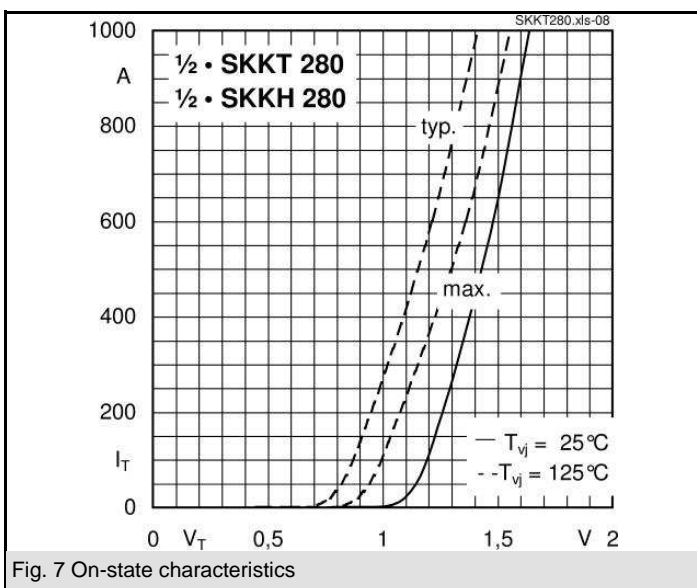
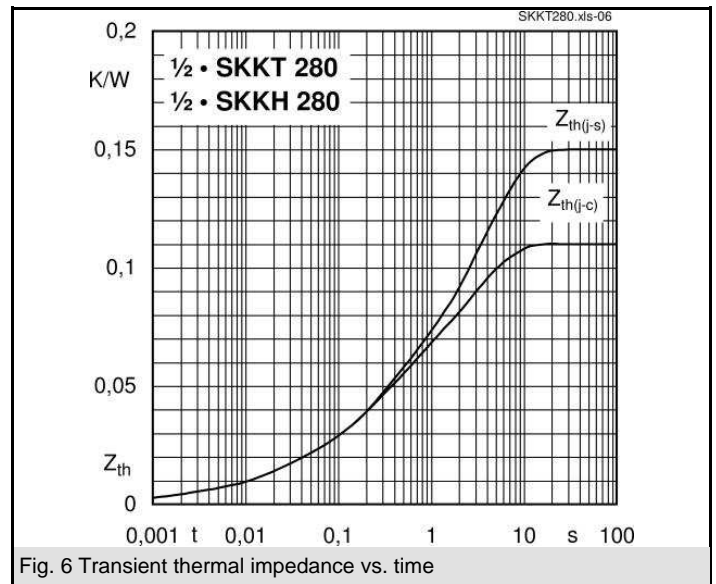
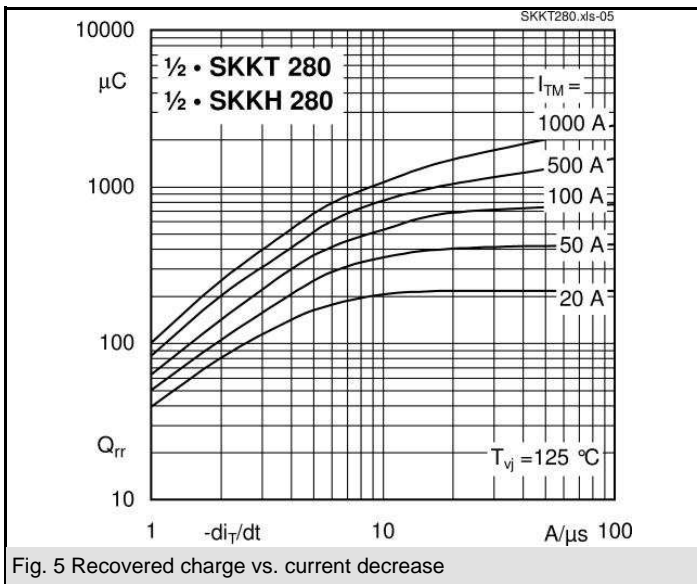
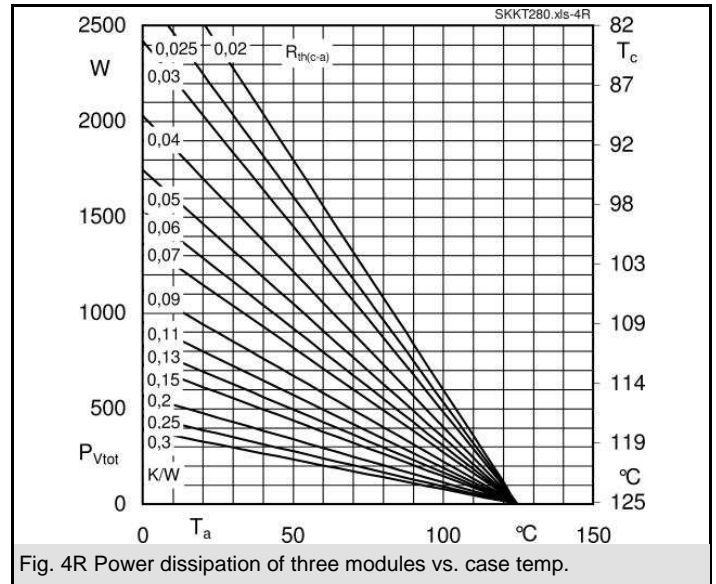
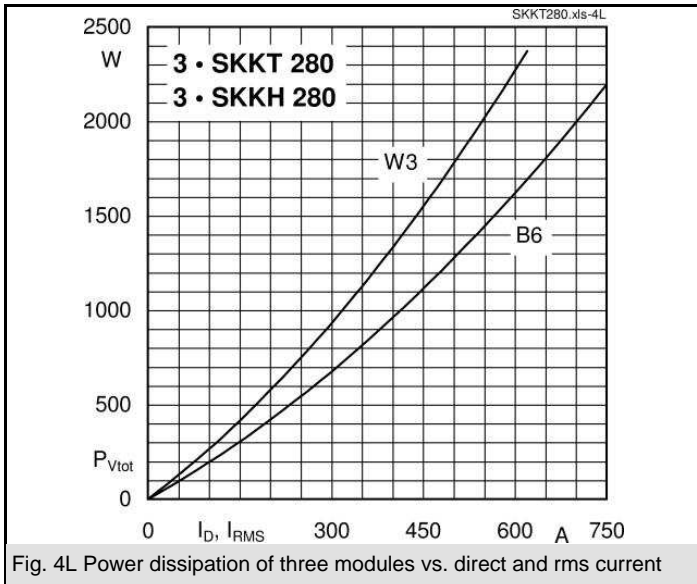
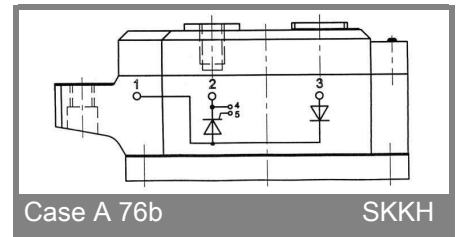
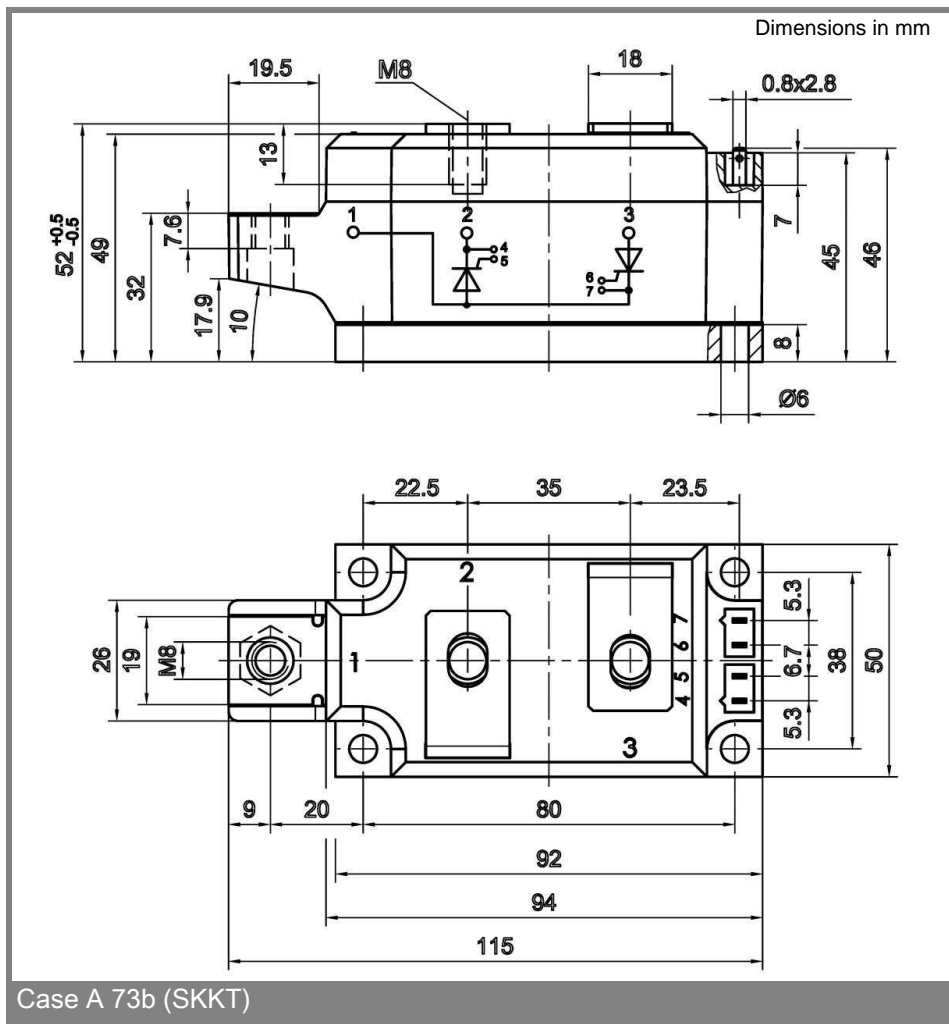
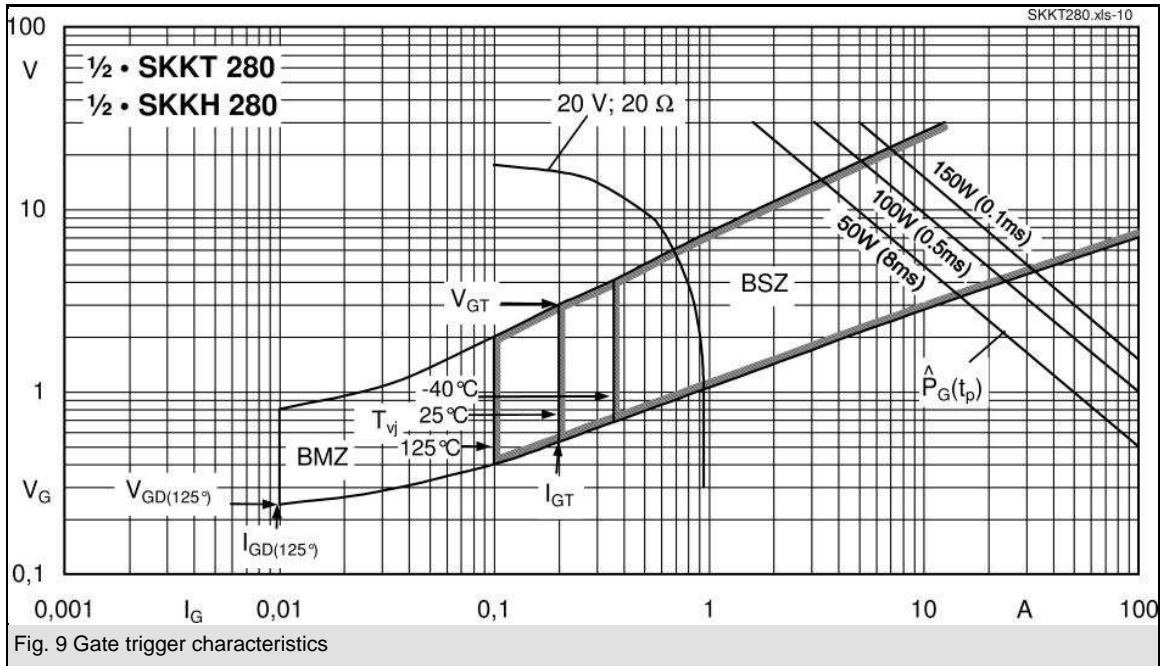


Fig. 3R Power dissipation of two modules vs. case temp.

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* 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 staff.