

SKKT 57 H4, SKKH 57 H4



SEMIPACK® 1

Thyristor / Diode Modules

SKKT 57 H4
SKKH 57 H4

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63532

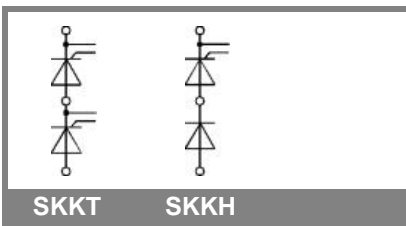
Typical Applications*

- 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 | $I_{TRMS} = 95$ A (maximum value for continuous operation) $I_{TAV} = 55$ A (sin. 180; $T_c = 80$ °C) | |
| 2100 2300 | 2000 2200 | SKKT 57/20E H4 SKKT 57/22E H4 | SKKH 57/20E H4 SKKH 57/22E H4 |

| Symbol | Conditions | Values | Units |
|------------------|---|------------------------|------------------|
| I_{TAV} | sin. 180; $T_c = 85$ (100) °C; | 50 (35) | A |
| I_D | P3/180; $T_a = 45$ °C; B2 / B6 | 57 / 68 | A |
| | P3/180F; $T_a = 35$ °C; B2 / B6 | 100 / 130 | A |
| I_{RMS} | P3/180F; $T_a = 35$ °C; W1 / W3 | 130 / 3 x 100 | A |
| I_{TSM} | $T_{vj} = 25$ °C; 10 ms | 1500 | A |
| | $T_{vj} = 125$ °C; 10 ms | 1250 | A |
| i^2t | $T_{vj} = 25$ °C; 8,3 ... 10 ms | 11000 | A ² s |
| | $T_{vj} = 125$ °C; 8,3 ... 10 ms | 8000 | A ² s |
| V_T | $T_{vj} = 25$ °C; $I_T = 200$ A | max. 1,65 | V |
| $V_{T(TO)}$ | $T_{vj} = 125$ °C | max. 0,9 | V |
| r_T | $T_{vj} = 125$ °C | max. 3,5 | mΩ |
| I_{DD}, I_{RD} | $T_{vj} = 125$ °C; $V_{RD} = V_{RRM}, V_{DD} = V_{DRM}$ | max. 30 | 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. 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. | 150 / 250 | mA |
| I_L | $T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max. | 300 / 600 | 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. 6 | mA |
| $R_{th(j-c)}$ | cont.; per thyristor / per module | 0,57 / 0,29 | K/W |
| $R_{th(j-c)}$ | sin. 180; per thyristor / per module | 0,6 / 0,3 | K/W |
| $R_{th(j-c)}$ | rec. 120; per thyristor / per module | 0,64 / 0,32 | 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. | 4800 / 4000 | V~ |
| M_s | to heatsink | 5 ± 15 % ¹⁾ | Nm |
| M_t | to terminals | 3 ± 15 % | Nm |
| a | | 5 * 9,81 | m/s ² |
| m | approx. | 95 | g |
| Case | SKKT | A 46 | |
| | SKKH | A 47 | |



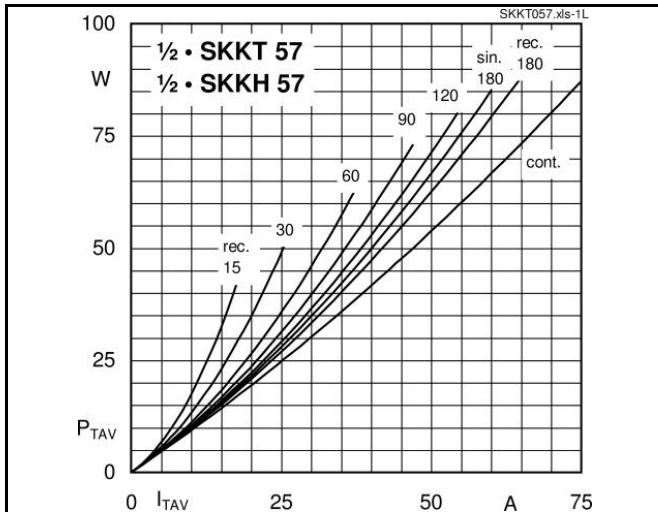


Fig. 1L Power dissipation per thyristor vs. on-state current

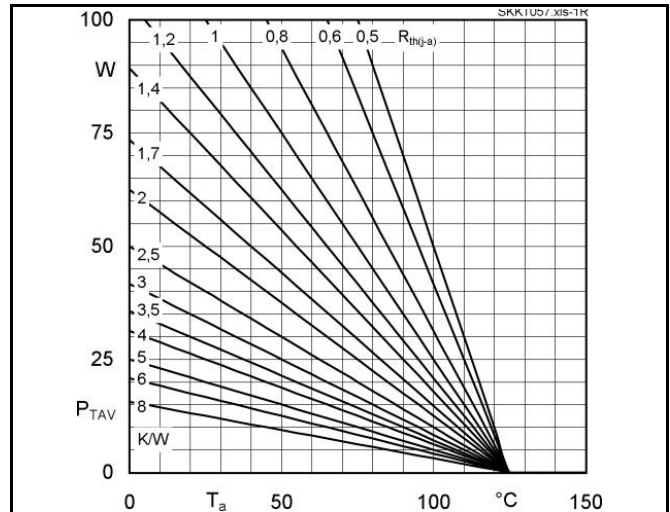


Fig. 1R Power dissipation per thyristor vs. ambient temp.

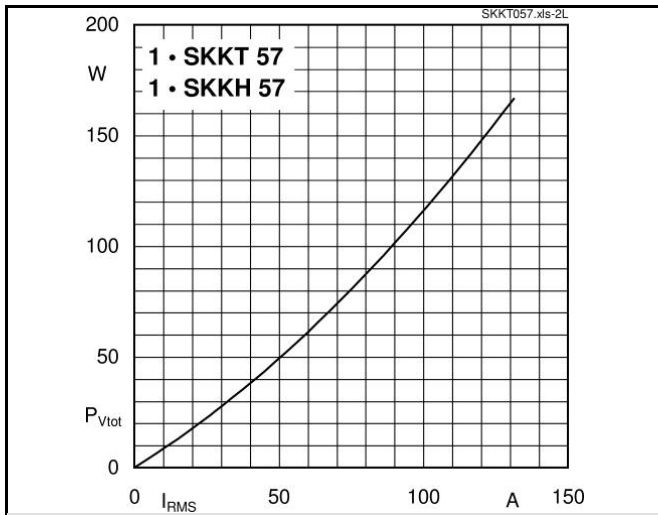


Fig. 2L Power dissipation per module vs. rms current

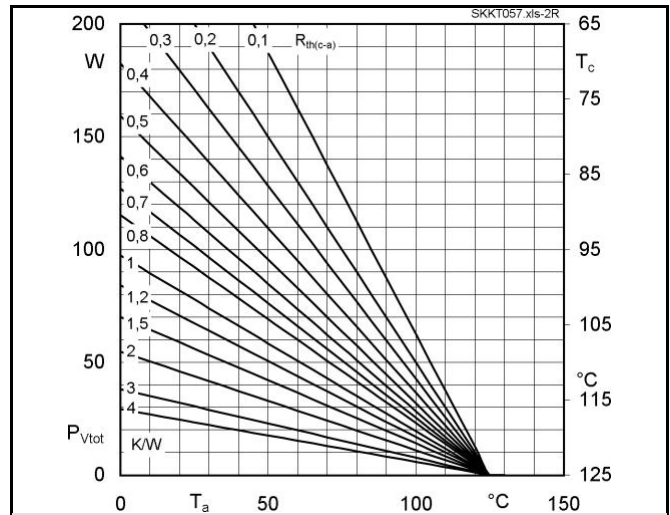


Fig. 2R Power dissipation per module vs. case temp.

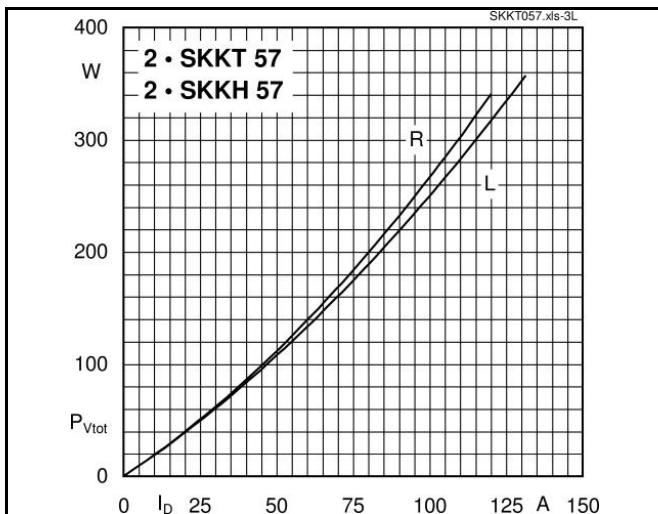


Fig. 3L Power dissipation of two modules vs. direct current

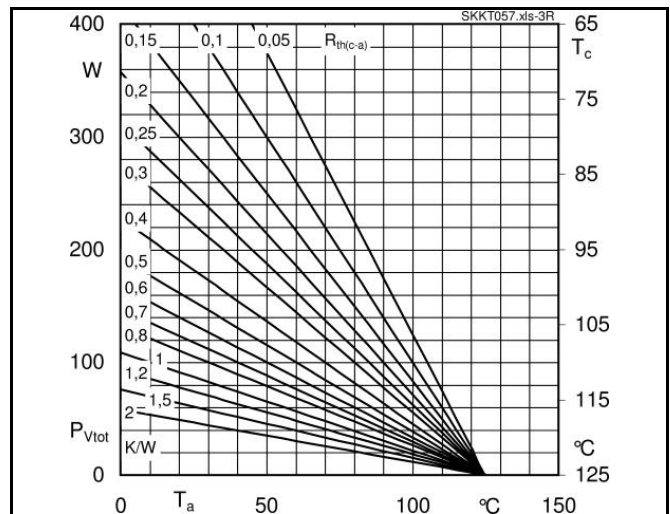


Fig. 3R Power dissipation of two modules vs. case temp.

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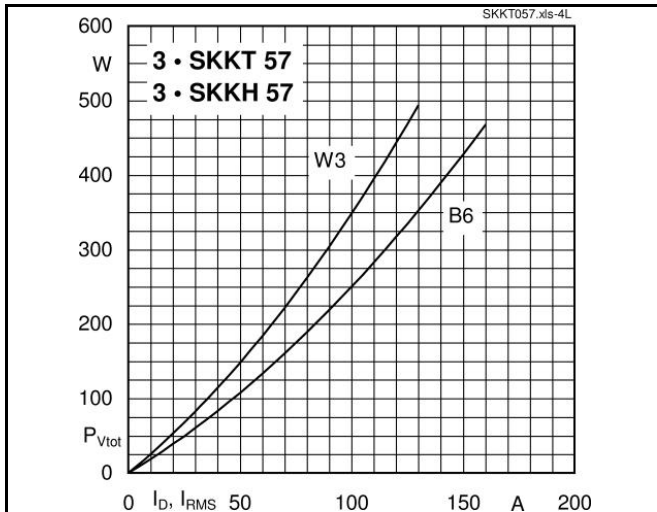


Fig. 4L Power dissipation of three modules vs. direct and rms current

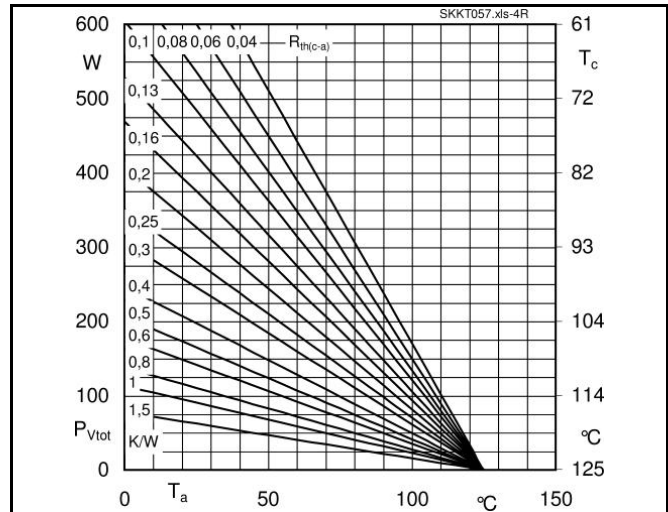


Fig. 4R Power dissipation of three modules vs. case temp.

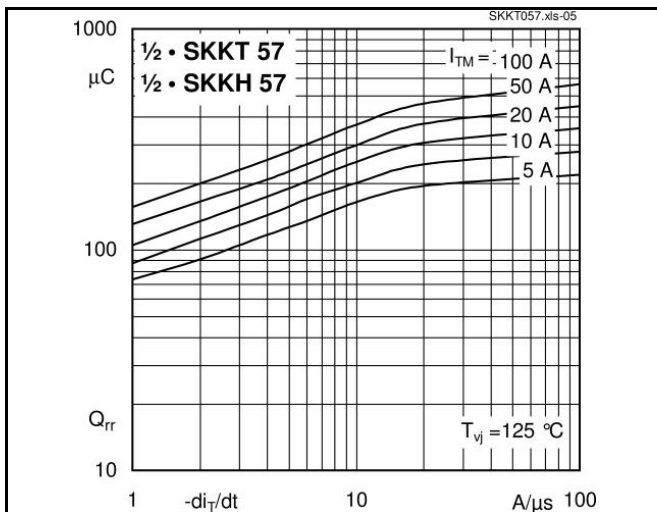


Fig. 5 Recovered charge vs. current decrease

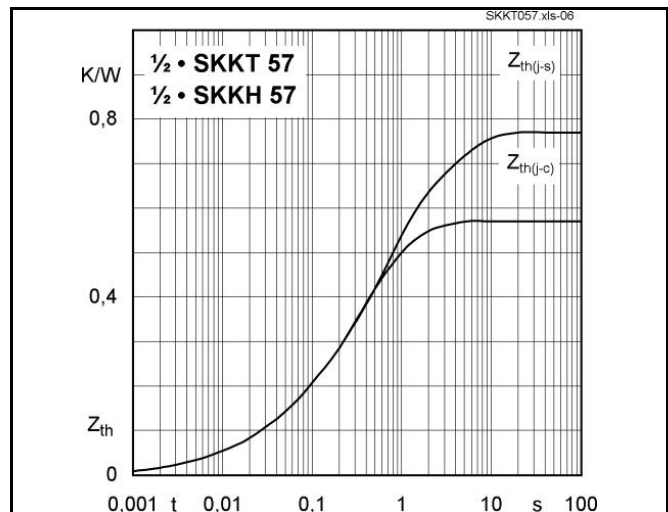


Fig. 6 Transient thermal impedance vs. time

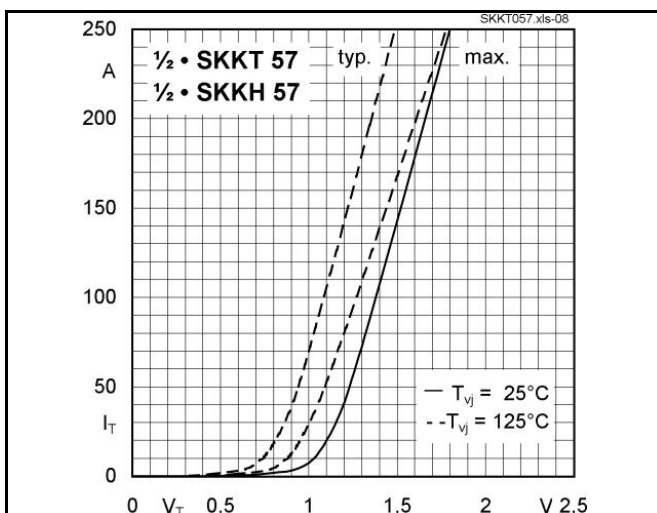


Fig. 7 On-state characteristics

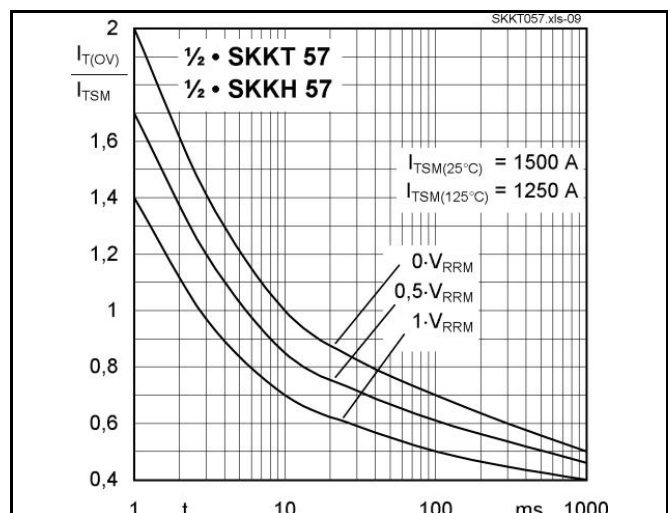
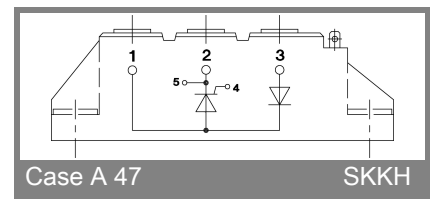
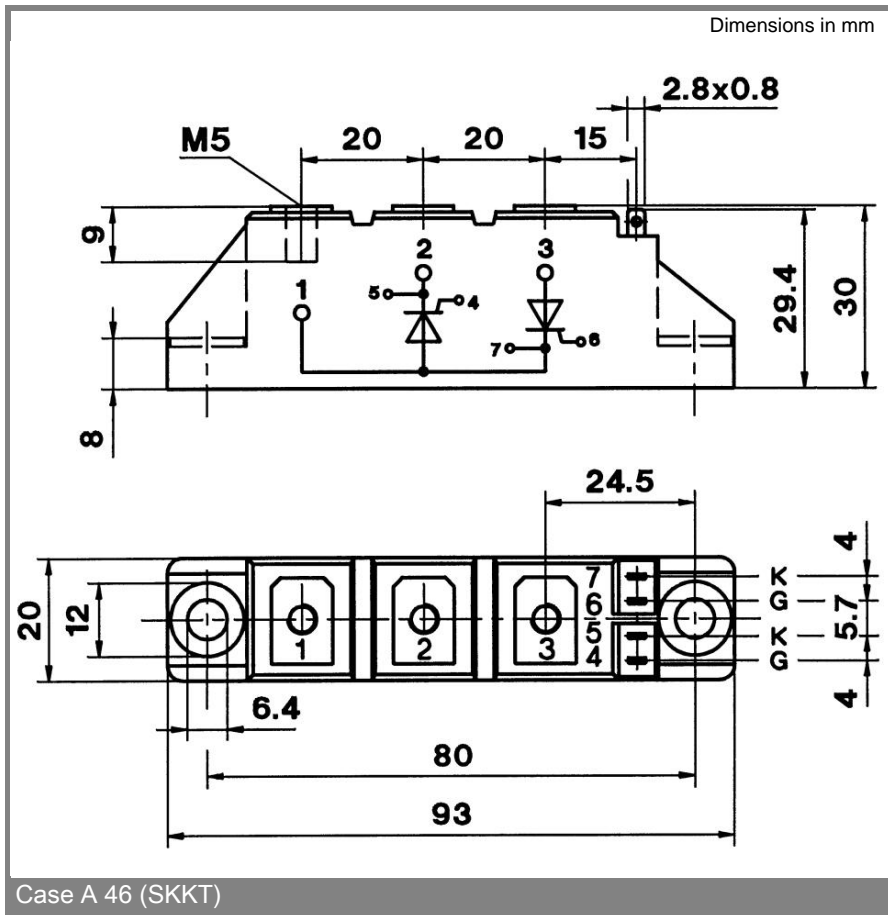
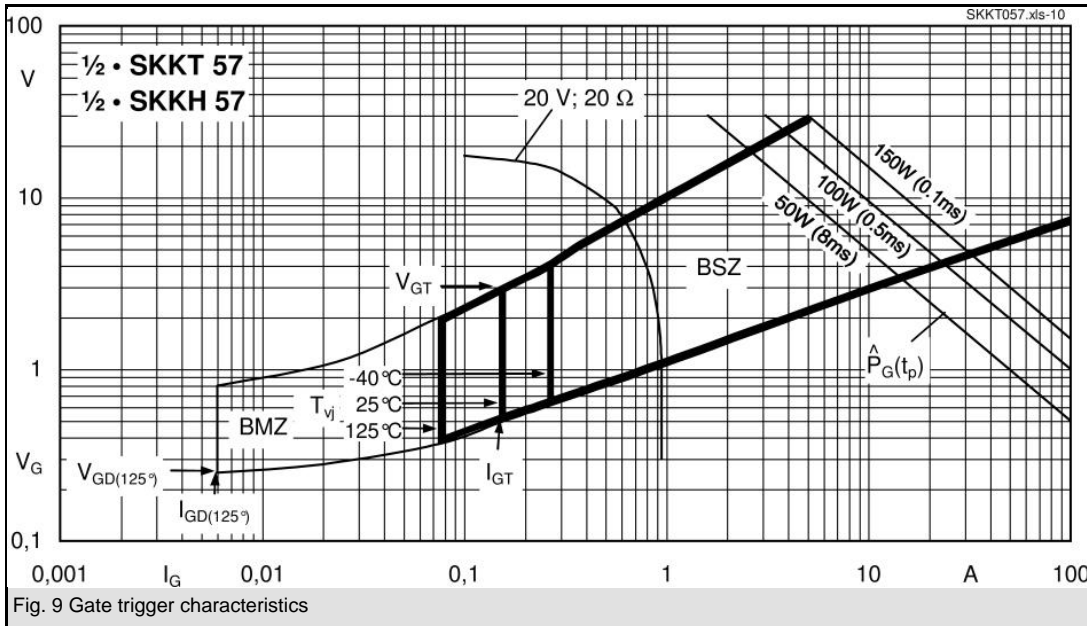


Fig. 8 Surge overload current vs. time



* 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.