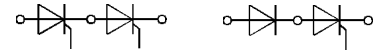
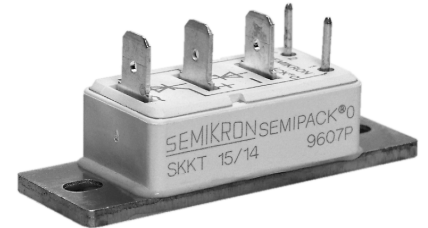


| | | | | |
|-----------|------------------------|----------------|--|---|
| V_{RSM} | V_{RRM} V_{DRM} | $(dv/dt)_{cr}$ | I_{TRMS} (maximum values for continuous operation) | |
| | | | 24 A ¹⁾ ; 30 A ²⁾ | 24 A ¹⁾ ; 45 A ²⁾ |
| V | V | V/ μ s | I_{TAV} (sin. 180; $T_{case} = 65\text{ }^{\circ}\text{C}$) | |
| | | | 17,5 A ²⁾ | 17,5 A ²⁾ |
| 500 | 400 | 500 | SKKT 15/04 D | SKKH 15/04 D |
| 700 | 600 | 500 | SKKT 15/06 D | SKKH 15/06 D |
| 900 | 800 | 500 | SKKT 15/08 D | SKKH 15/08 D |
| 1300 | 1200 | 1000 | SKKT 15/12 E | SKKH 15/12 E |
| 1500 | 1400 | 1000 | SKKT 15/14 E | SKKH 15/14 E |
| 1700 | 1600 | 1000 | SKKT 15/16 E | SKKH 15/16 E |

SEMIPACK® 0 Thyristor / Diode Modules

SKKT 15 SKKH 15



SKKT

SKKH

| Symbol | Conditions | SKKT 15 SKKH 15 | Units |
|---------------------|---|---|---|
| I_{TAV} | sin. 180; $T_{case} = 65\text{ }^{\circ}\text{C}$ $T_{case} = 75\text{ }^{\circ}\text{C}$ | 17,5 ²⁾ 15 ¹⁾ | A |
| I_D | B2/B6 $T_{amb} = 45\text{ }^{\circ}\text{C}$; P 13A/100 | 14 / 17 | A |
| I_{RMS} | W1/W3 $T_{amb} = 45\text{ }^{\circ}\text{C}$; P 13A/100 | 21 / 3 x 12 | A |
| I_{TSM} | $T_{vj} = 25\text{ }^{\circ}\text{C}$; 10 ms $T_{vj} = 125\text{ }^{\circ}\text{C}$; 10 ms | 320 280 | A |
| i^2t | $T_{vj} = 25\text{ }^{\circ}\text{C}$; 8,3 ... 10 ms $T_{vj} = 125\text{ }^{\circ}\text{C}$; 8,3 ... 10 ms | 510 390 | A ² s A ² s |
| t_{gd} | $T_{vj} = 25\text{ }^{\circ}\text{C}$ $I_G = 1\text{ A}$ $di_G/dt = 1\text{ A}/\mu\text{s}$ | 1 | μs |
| t_{gr} | $V_D = 0,67 \cdot V_{DRM}$ | 1 | μs |
| $(di/dt)_{cr}$ | $T_{vj} = 125\text{ }^{\circ}\text{C}$ | 100 | A/ μs |
| t_q | $T_{vj} = 125\text{ }^{\circ}\text{C}$ | typ. 80 | μs |
| I_H | $T_{vj} = 25\text{ }^{\circ}\text{C}$; typ./max. | 80 / 150 | mA |
| I_L | $T_{vj} = 25\text{ }^{\circ}\text{C}$; $R_G = 33\text{ }\Omega$; typ./max. | 150 / 300 | mA |
| V_T | $T_{vj} = 25\text{ }^{\circ}\text{C}$; $I_T = 75\text{ A}$ | max. 2,45 | V |
| $V_{T(TO)}$ | $T_{vj} = 125\text{ }^{\circ}\text{C}$ | 1,1 | V |
| r_T | $T_{vj} = 125\text{ }^{\circ}\text{C}$ | 20 | m Ω |
| I_{DD} ; I_{RD} | $T_{vj} = 125\text{ }^{\circ}\text{C}$; $V_{RD} = V_{RRM}$ $V_{DD} = V_{DRM}$ | max. 8 | mA |
| V_{GT} | $T_{vj} = 25\text{ }^{\circ}\text{C}$; d.c. | 3 | V |
| I_{GT} | $T_{vj} = 25\text{ }^{\circ}\text{C}$; d.c. | 100 | 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. | 5 | mA |
| R_{thjh} | cont. } sin. 180 } per thyristor / rec. 120 } per module | 1,6 / 0,8 1,7 / 0,9 1,8 / 0,9 | $^{\circ}\text{C}/\text{W}$ $^{\circ}\text{C}/\text{W}$ $^{\circ}\text{C}/\text{W}$ |
| R_{thch} | | 0,2 / 0,1 | $^{\circ}\text{C}/\text{W}$ |
| 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 | Case to heatsink; SI (US) units | 1,5 (13 lb. in.) \pm 15 % ³⁾ | Nm |
| a | | 5 - 9,81 | m/s ² |
| w | approx. | 50 | g |
| Case | → page B 1 – 30 | SKKT 15: A 1 SKKH 15: A 2 | |

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) Using tin plated connectors with flexible leads of 6 mm² for the main terminals

2) Flexible leads of 6 mm² soldered to the main terminals

3) See the assembly instructions

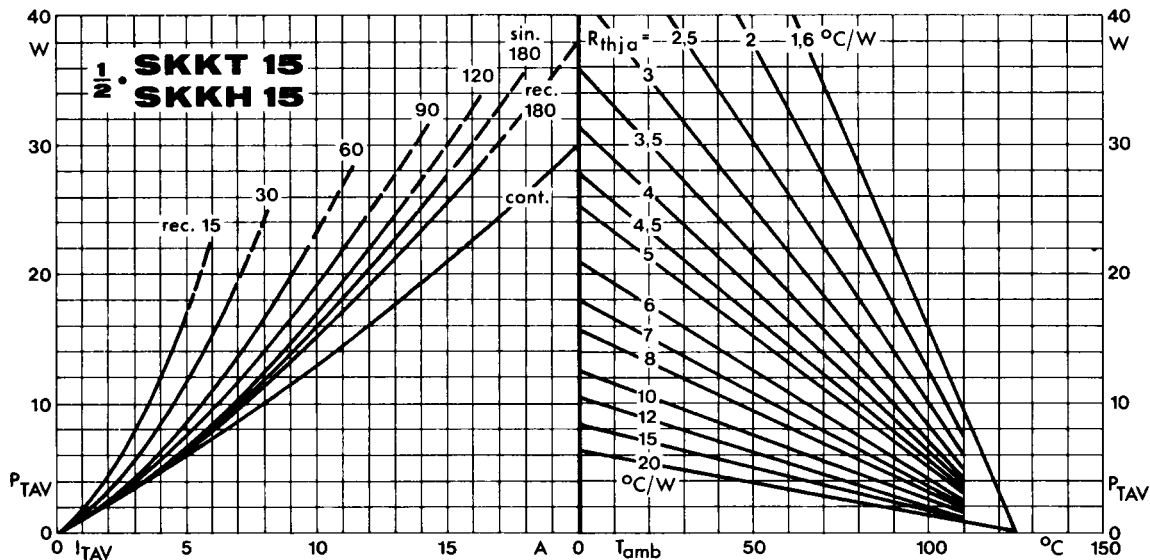


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

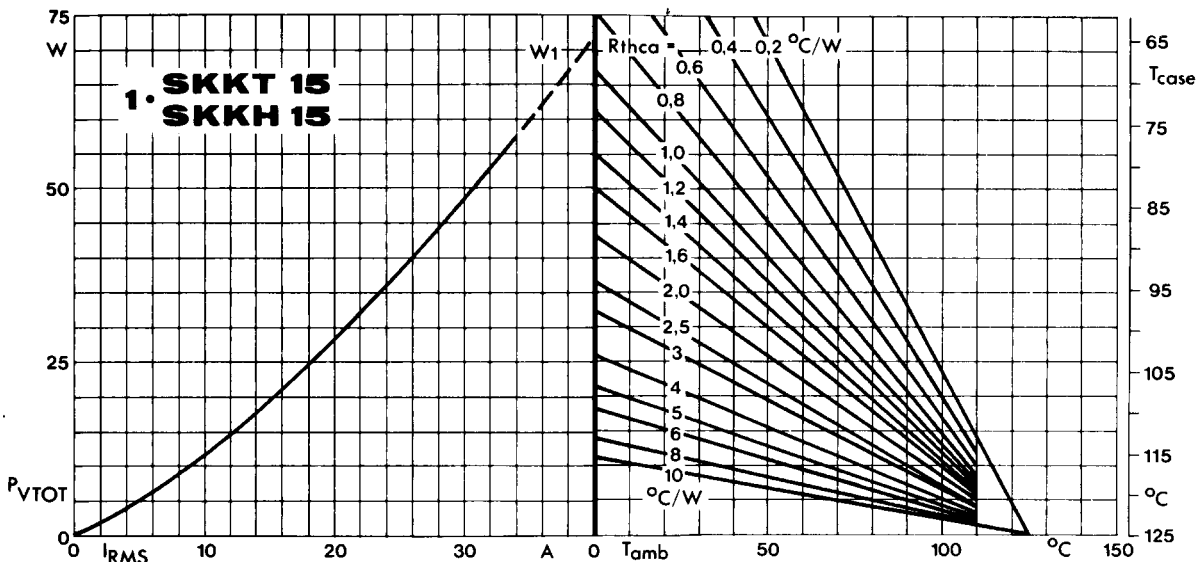


Fig. 2 Power dissipation per module vs. rms current and case temperature

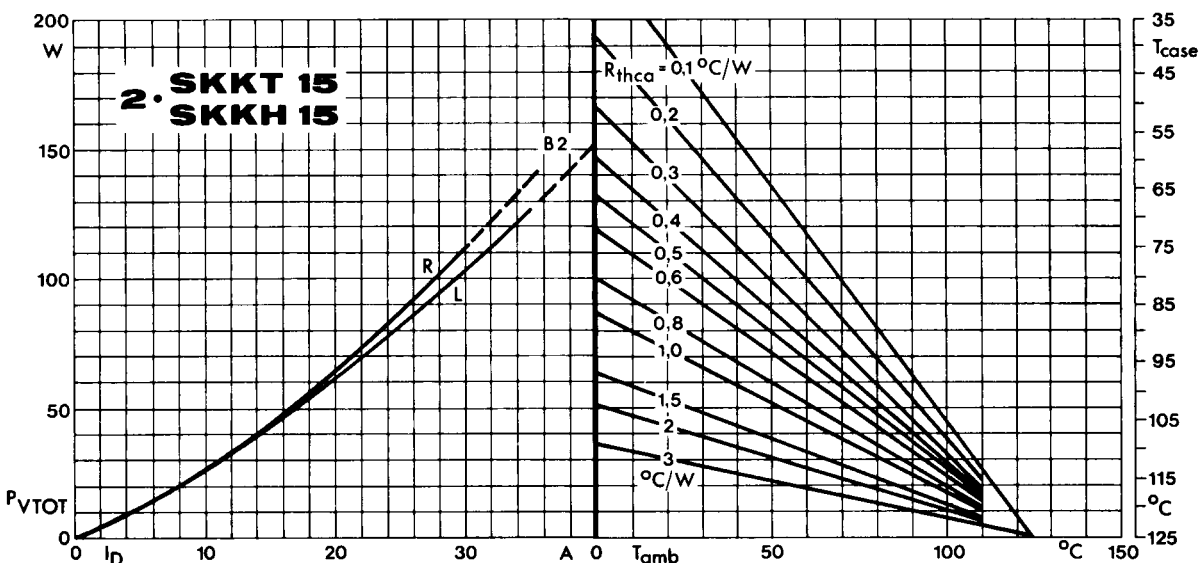


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

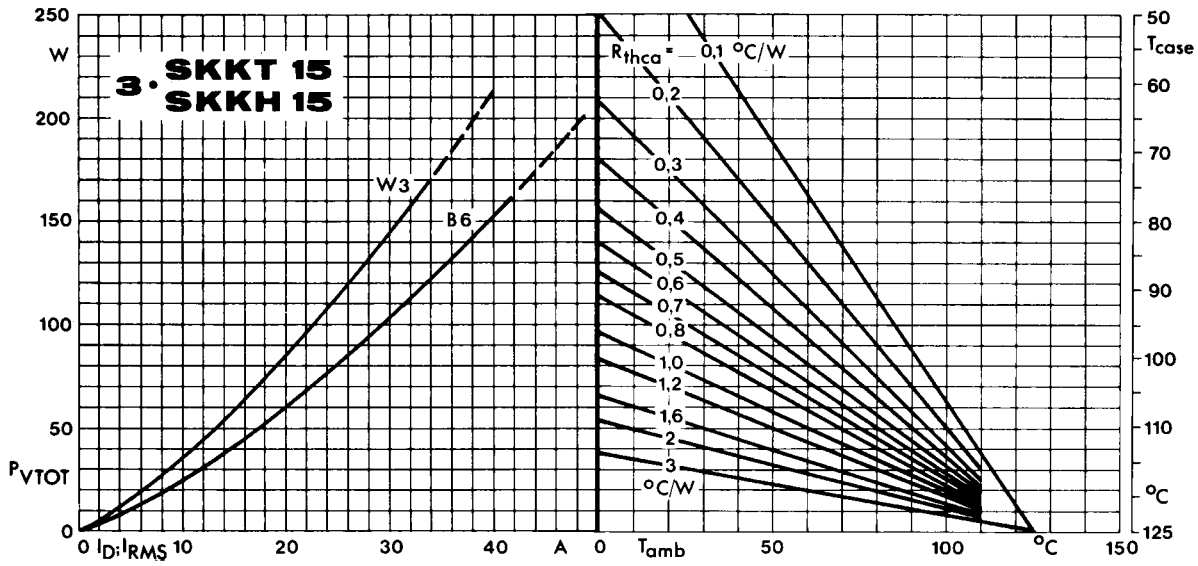


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

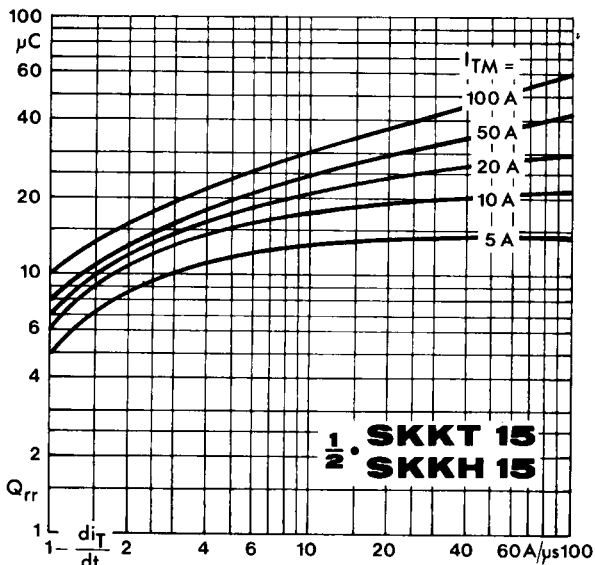


Fig. 5 Recovered charge vs. current decrease

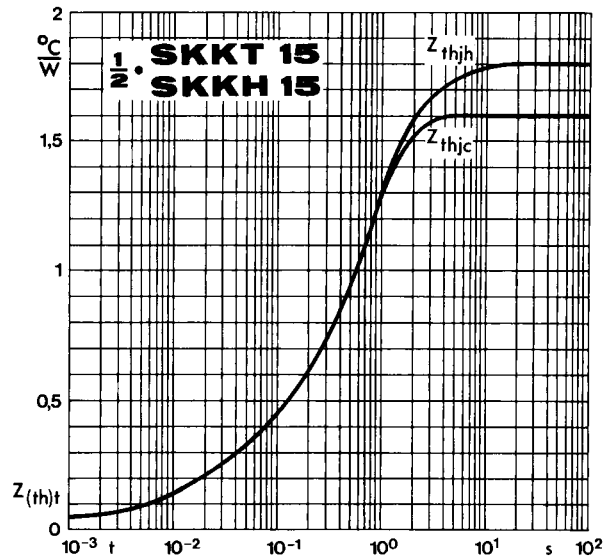


Fig. 6 Transient thermal impedance vs. time

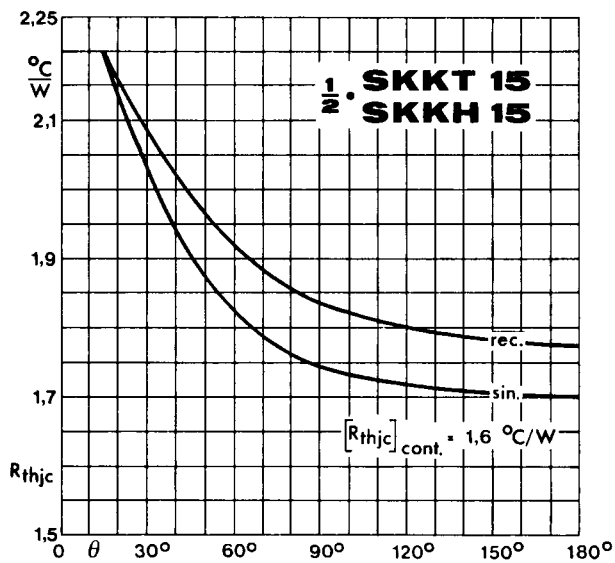


Fig. 7 Thermal resistance vs. conduction angle

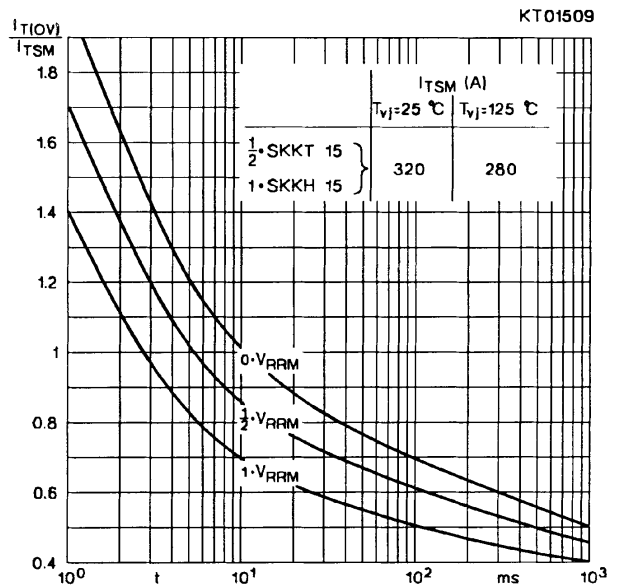
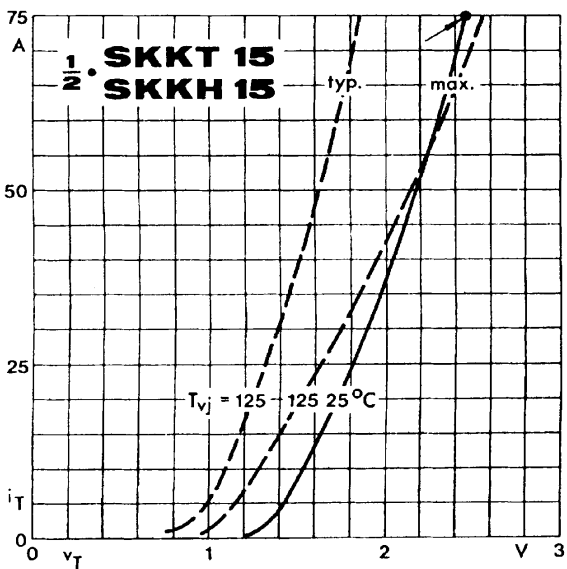


Fig. 8 On-state characteristics

Fig. 9 Surge overload current vs. time

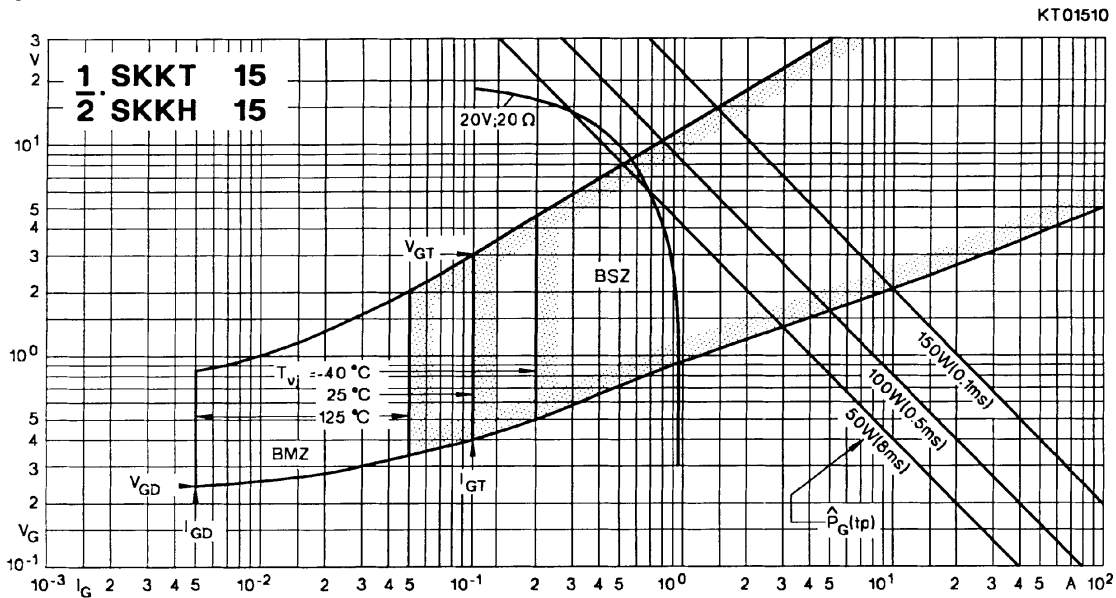


Fig. 10 Gate trigger characteristics

