

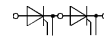
SEMPACK® 3 Thyristor/ Diode Modules

SKKT 131 SKKH 131
SKKT 161 SKKH 161

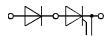


| V _{RSM} | V _{RRM} | (dv/dt) _{cr} | I _{T(RMS)} (maximum values for continuous operation) | | | |
|------------------|------------------|-----------------------|---|-----------------|-----------------|-----------------|
| | | | 240 A | 270 A | 240 A | 270 A |
| V | V | V/μs | I _{TAV} (sin. 180; T _{case} = . . .) | | | |
| | | | 150 A (85 °C) | 172 A (81 °C) | 150 A (85 °C) | 172 A (81 °C) |
| 900 | 800 | 500 | SKKT | SKKT | SKKH | SKKH |
| 1300 | 1200 | 500 | 131/08 D | 161/08 D | 131/08 D | 161/08 D |
| 1300 | 1200 | 1000 | 131/12 D | 161/12 D | – | 161/12 D |
| 1300 | 1200 | 1000 | 131/12 E | 161/12 E | 131/12 E | 161/12 E |
| 1500 | 1400 | 1000 | 131/14 E | 161/14 E | 131/14 E | 161/14 E |
| 1700 | 1600 | 1000 | 131/16 E | 161/16 E | 131/16 E | 161/16 E |
| 1900 | 1800 | 1000 | 131/18 E | 161/18 E | 131/18 E | 161/18 E |
| 2100 | 2000 | 1000 | 131/20 E | – | 131/20 E | – |
| 2300 | 2200 | 1000 | 131/22 E | – | 131/22 E | – |

| Symbol | Conditions | SKKT 131 SKKH 131 | SKKT 161 SKKH 161 | Units | |
|---|--|--|---|--------------------------------------|----------------------------|
| I _{TAV} | sin. 180; T _{case} = 81 °C 85 °C 92 °C | – 150 130 | 172 160 – | A A A | |
| I _D | B2/B6 T _{amb} = | P 16/170 F P 16/200 F P 16/300 F | 295/375 300/380 – /390 | 325/410 330/415 – /425 | A A A A A A |
| I _{RMS} | W1/W3 35 °C; P 16/170 F P 16/200 F P 16/300 F | 340/3x290 385/3x312 – /3x318 | 380/3x310 385/3x337 – /3x344 | A A A A | |
| I _{TSM} | T _{vj} = 25 °C; 10 ms T _{vj} = 130 °C; 10 ms | 4 700 4 000 | 5 400 5 000 | A A | |
| i ² t | T _{vj} = 25 °C; 8,3 ... 10 ms T _{vj} = 130 °C; 8,3 ... 10 ms | 110 000 80 000 | 145 000 125 000 | A ² s A ² s | |
| 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} = 130 °C | | 200 | A/μs | |
| t _q | T _{vj} = 130 °C | | typ. 50 ... 150 | μs | |
| I _H | T _{vj} = 25 °C | | typ. 150; max. 400 | mA | |
| I _L | T _{vj} = 25 °C; R _G = 33 Ω | | typ. 0,3; max. 1 | A | |
| V _T | T _{vj} = 25 °C; I _T = 500 A | max. 1,7 | max. 1,55 | V | |
| V _(TO) | T _{vj} = 130 °C | 1 | 1 | V | |
| r _T | T _{vj} = 130 °C | 1,4 | 1,0 | mΩ | |
| I _{DD} ; I _{RD} | T _{vj} = 130 °C; V _{DD} = V _{DRM} V _{RD} = V _{RRM} | max. 50 | max. 50 | mA | |
| V _{GT} | T _{vj} = 25 °C; d. c. | | 3 | V | |
| I _{GT} | T _{vj} = 25 °C; d. c. | | 150 | mA | |
| V _{GD} | T _{vj} = 130 °C; d. c. | | 0,25 | V | |
| I _{GD} | T _{vj} = 130 °C; d. c. | | 10 | mA | |
| R _{thjc} | cont. } sin. 180 } rec. 120 } per thyristor/ per module | | 0,19/0,09 0,20/0,10 0,22/0,11 0,06/0,03 – 40 ... +130 | °C/W °C/W °C/W °C/W °C | |
| R _{thch} T _{vj} ; T _{stg} | | | | | |
| V _{isol} | a. c. 50 Hz; r.m.s.; 1 s/1 min | | 3600/3000 | V~ | |
| M ₁ | to heatsink | SI (US) units | 5 (44 lb. in.) ± 15 % ¹⁾ | Nm | |
| M ₂ | to terminals | SI (US) units | 9 (80 lb. in.) ± 15 % ²⁾ | Nm | |
| a | | | 5 · 9,81 | m/s ² | |
| w | approx. | | 820 | g | |
| Case | → page B 1 – 76 | SKKT: A 13 | SKKH: A 14 | | |



SKKT



SKKH

Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- UL recognized, file no. 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
2) The screws must be lubricated

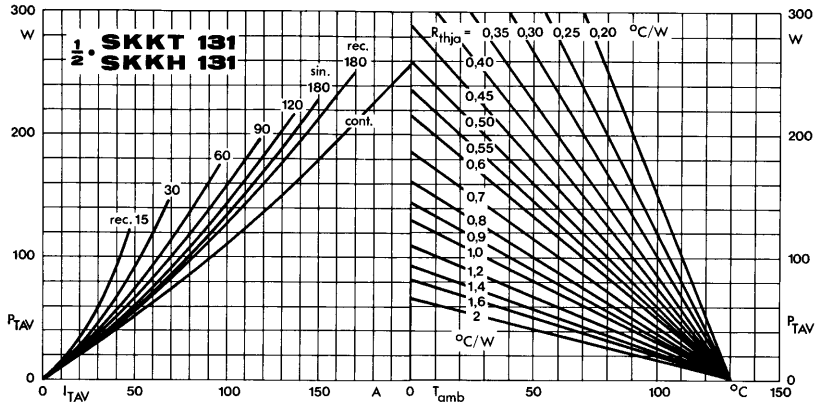


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

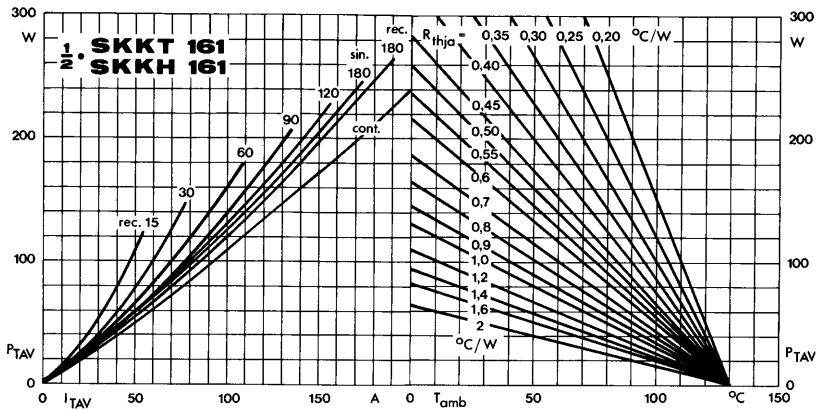


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

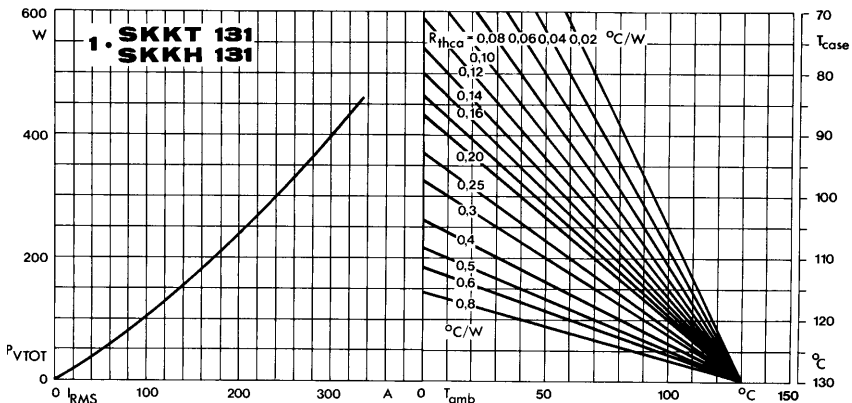


Fig. 2 a Power dissipation per module vs. rms current and case temperature

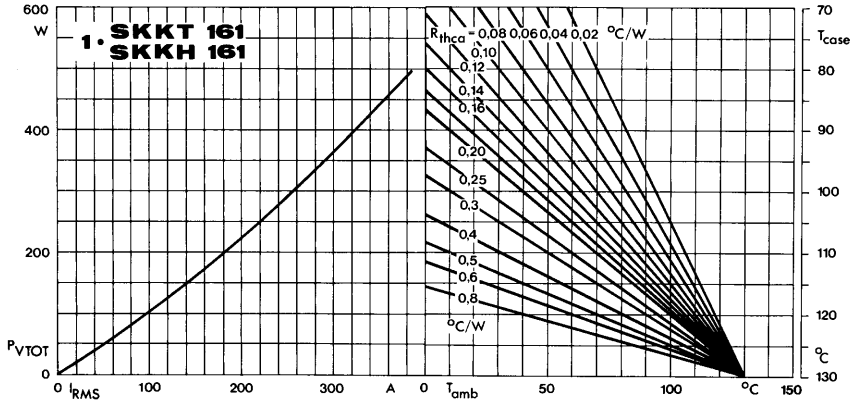


Fig. 2 b Power dissipation per module vs. rms current and case temperature

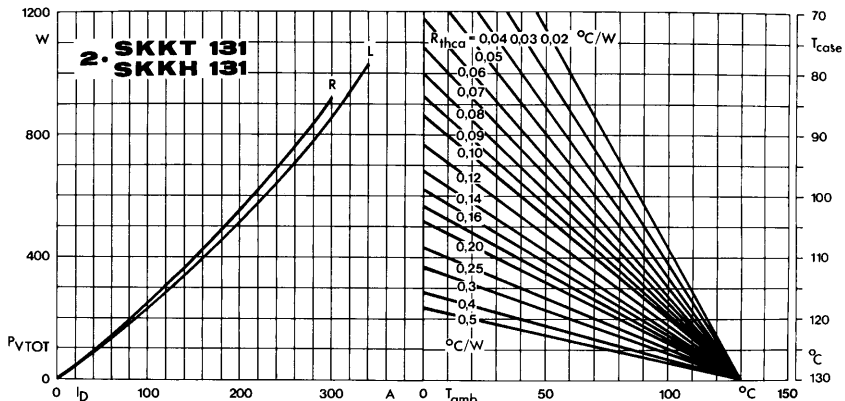


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

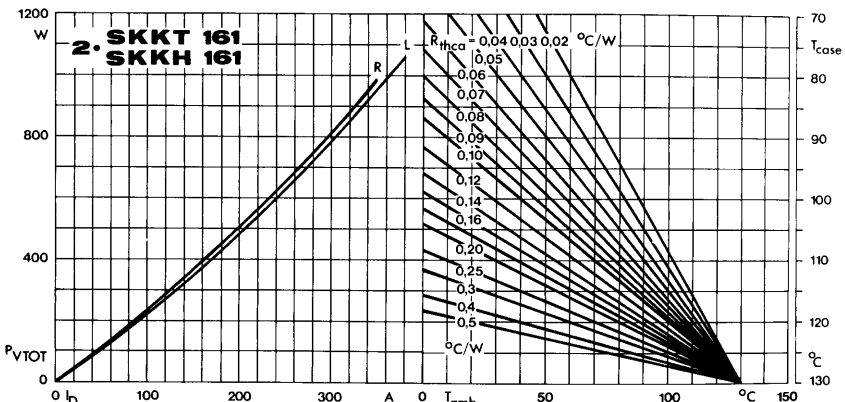


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

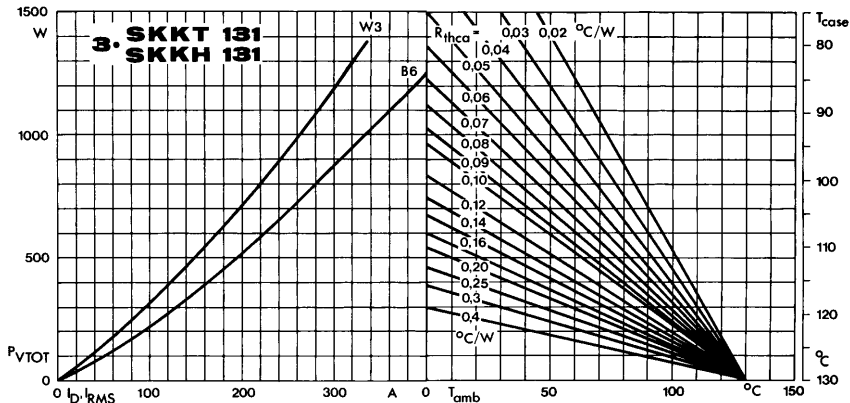


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

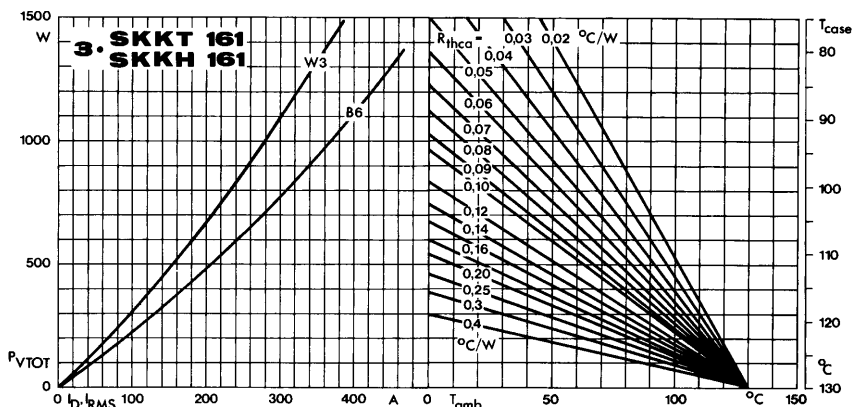


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

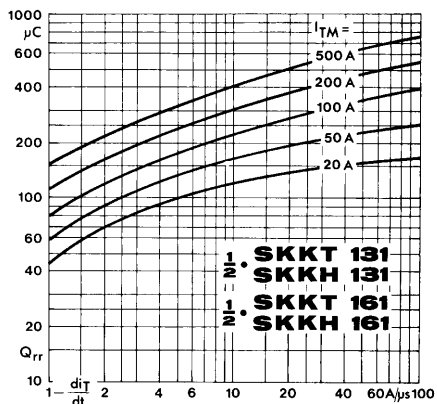


Fig. 5 Recovered charge vs. current decrease

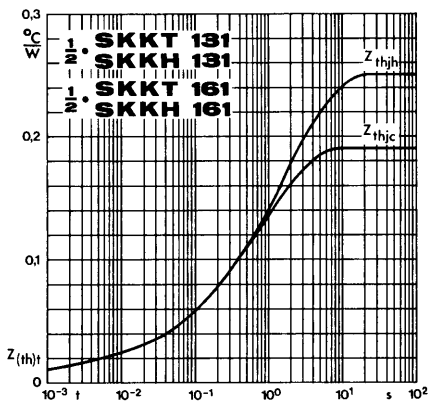


Fig. 6 Transient thermal impedance vs. time

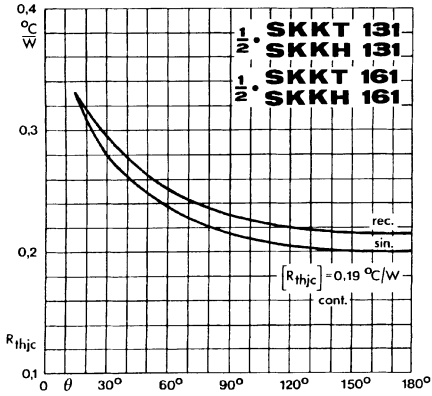


Fig. 7 Thermal resistance vs. conduction angle

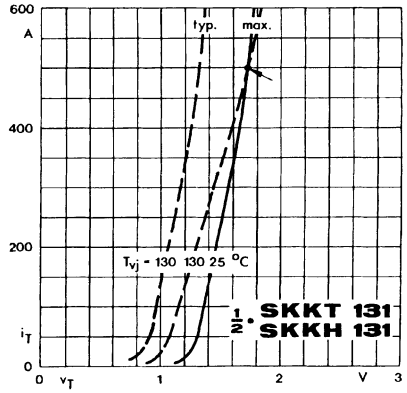


Fig. 8 a On-state characteristic

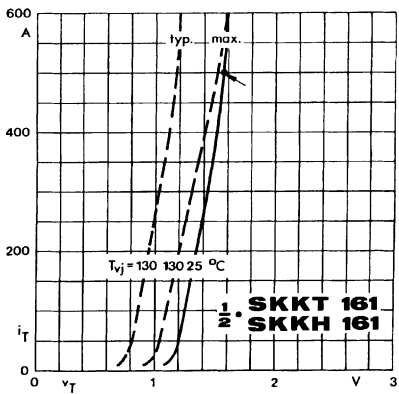


Fig. 8 b On-state characteristics

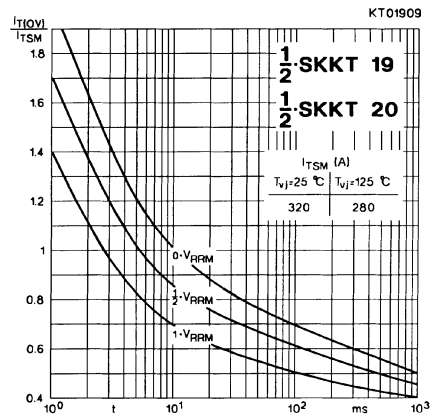


Fig. 9 Surge overload current vs. time

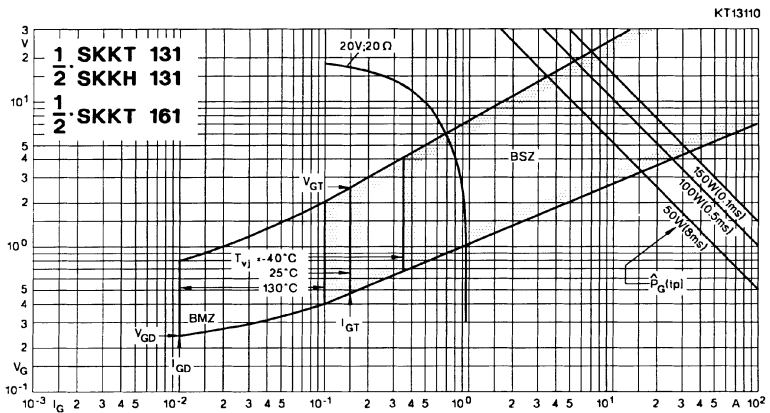
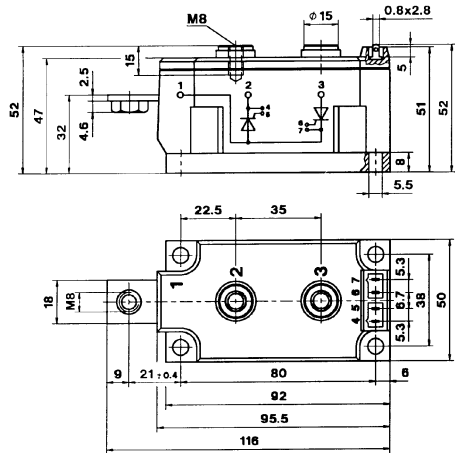


Fig. 10 Gate trigger characteristics

SKKT 131, SKKT 161

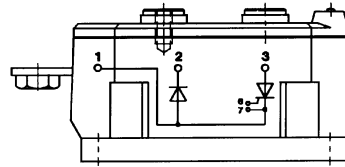
Case A 13

SEMPACK 3 UL recognized, file no. E 63 532



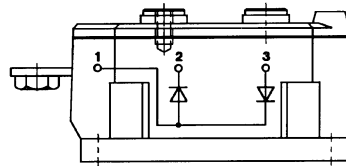
SKKL 131, SKKL 161

Case A 15



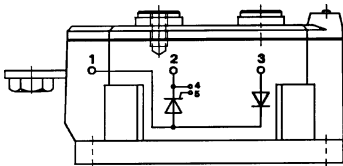
SKKD 201

Case A 16



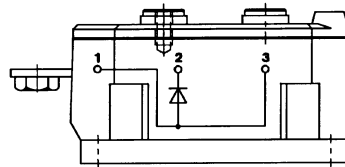
SKKH 131, SKKH 161

Case A 14



SKKE 201

Case A 17



Dimensions in mm