# Thyristors

## SKT 55
## SKT 80
## SKT 100

| $V_{RSM}$ | $V_{RRM}$ $V_{DRM}$ | $\left(\frac{dv}{dt}\right)_{cr}$ | $I_{TRMS}$ (maximum values for continuous operation) 110 A | 135 A | 175 A |
|---|---|---|---|---|---|
| | | | $I_{TAV}$ (sin. 180; $T_{case}$ = 80 °C) | | |
| V | V | V/µs | 70 A | 86 A | 110 A |
| 500 | 400 | 500 | **SKT 55/04 D** | – | **SKT 100/04 D** |
| 700 | 600 | 500 | **SKT 55/06 D** | **SKT 80/06 D*** | **SKT 100/06 D*** |
| 900 | 800 | 500 | **SKT 55/08 D** | **SKT 80/08 D** | **SKT 100/08 D** |
| 1300 | 1200 | 1000 | **SKT 55/12 E** | **SKT 80/12 E*** | **SKT 100/12 E*** |
| 1500 | 1400 | 1000 | **SKT 55/14 E** | **SKT 80/14 E** | **SKT 100/14 E*** |
| 1700 | 1600 | 1000 | **SKT 55/16 E** | **SKT 80/16 E*** | **SKT 100/16 E*** |
| 1900 | 1800 | 1000 | **SKT 55/18 E♦** | **SKT 80/18 E♦** | **SKT 100/18 E♦** |

| Symbol | Conditions | SKT 55 | SKT 80 | SKT 100 | Units |
|---|---|---|---|---|---|
| $I_{TAV}$ | sin. 180; ($T_{case}$ = . . . °C) | 55 (92) | 80 (85) | 100 (85) | A °C |
| $I_{TSM}$ | $T_{vj}$ = 25 °C; 10 ms | 1300 | 1700 | 2000 | A |
| | $T_{vj}$ = 130 °C; 10 ms | 1100 | 1500 | 1750 | A |
| $i^2t$ | $T_{vj}$ = 25 °C; 8,35 ... 10 ms | 8 500 | 14 500 | 20 000 | $A^2s$ |
| | $T_{vj}$ = 130 °C; 8,35 ... 10 ms | 6 000 | 11 000 | 15 000 | $A^2s$ |
| $t_{gd}$ | $T_{vj}$ = 25 °C; $I_G$ = 1 A; $di_G/dt$ = 1 A/µs | typ. 1 | | | µs |
| $t_{gr}$ | $V_D$ = 0,67 · $V_{DRM}$ | typ. 2 | | | µs |
| $(di/dt)_{cr}$ | f = 50 . . . 60 Hz | 50 | | | A/µs |
| $I_H$ | $T_{vj}$ = 25 °C | typ. 150; max. 250 | | | mA |
| $I_L$ | $T_{vj}$ = 25 °C | typ. 300; max. 600 | | | mA |
| $t_q$ | $T_{vj}$ = 130 °C; typ. | 100 | | | µs |
| $V_T$ | $T_{vj}$ = 25 °C; ($I_T$ = ...); max. | 1,8 (200) | 2,25 (300) | 1,75 (300) | V A |
| $V_{T(TO)}$ | $T_{vj}$ = 130 °C | 0,9 | 1,2 | 1,0 | V |
| $r_T$ | $T_{vj}$ = 130 °C | 4 | 4 | 2,4 | mΩ |
| $I_{DD}$, $I_{RD}$ | $T_{vj}$ = 130 °C; $V_{DD}$ = $V_{DRM}$; $V_{RD}$ = $V_{RRM}$ | 25 | 30 | 30 | mA |
| $V_{GT}$ | $T_{vj}$ = 25 °C | 3 | | | V |
| $I_{GT}$ | $T_{vj}$ = 25 °C | 150 | | | mA |
| $V_{GD}$ | $T_{vj}$ = 130 °C | 0,25 | | | V |
| $I_{GD}$ | $T_{vj}$ = 130 °C | 10 | | | mA |
| $R_{thjc}$ | cont. | 0,40 | 0,25 | | °C/W |
| | sin. 180/rec. 120 | 0,47/0,53 | 0,28/0,31 | | °C/W |
| $R_{thch}$ | | 0,08 | | | °C/W |
| $T_{vj}$ | | – 40 ... +130 | | | °C |
| $T_{stg}$ | | – 55 ... +150 | | | °C |
| M | SI units (US units) | 10 (90 lb.in.) | | | Nm |
| a | | 5 . 9,81 | | | $m/s^2$ |
| w | | 65 | 80 | | g |
| Case | | B 5 | | | |

### Features

- Hermetic metal cases with ceramic insulators
- Threaded studs ISO M12 or UNF 1/2-20
- Interchangeable with international standard cases

### Typical Applications

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)

* Available with UNF thread 1/2-20 UNF2A; e.g. SKT 80/06 D UNF

♦ available in limited quantities

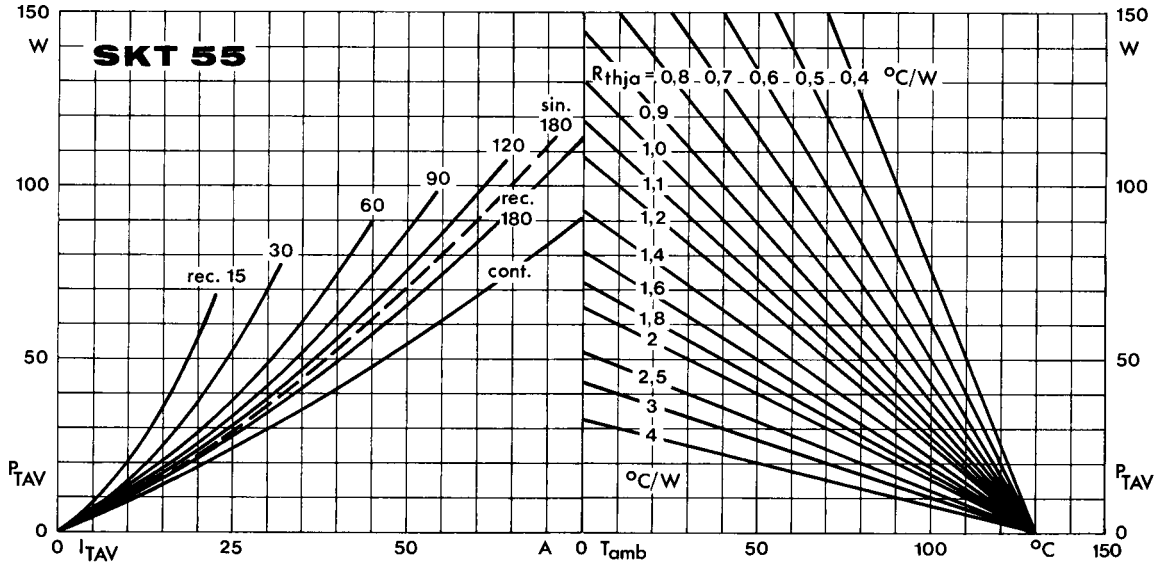



Fig. 1 a Power dissipation vs. on-state current and ambient temperature

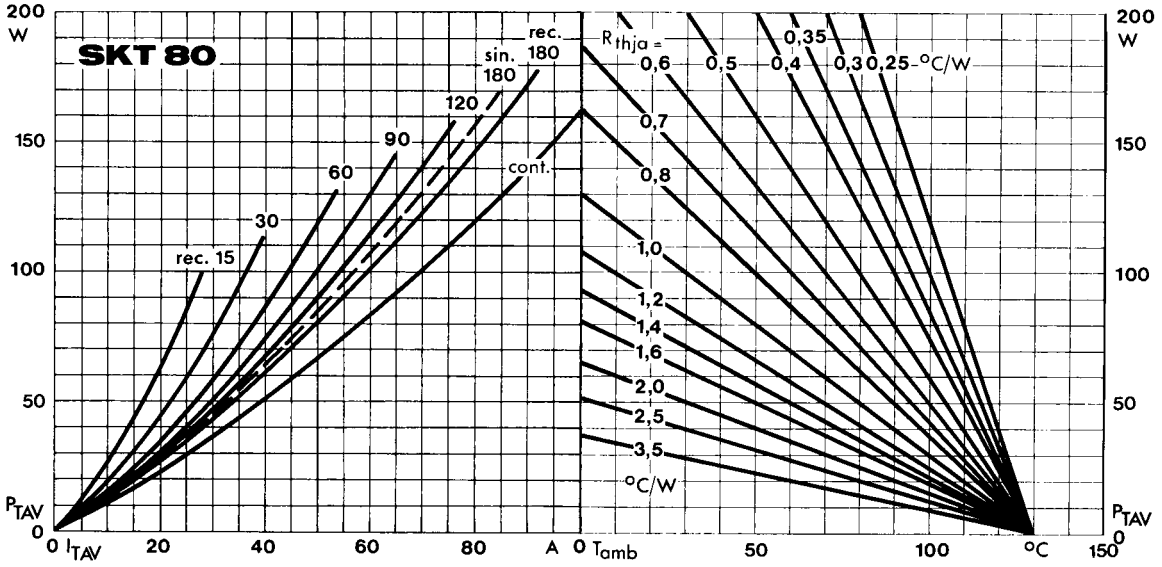



Fig. 1 b Power dissipation vs. on-state current and ambient temperature

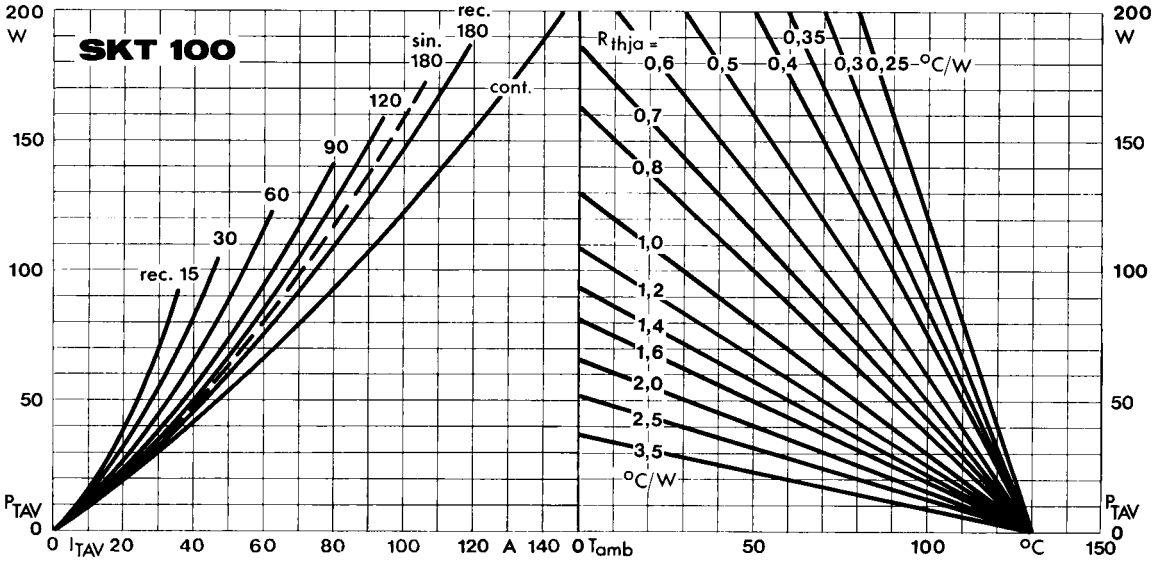



Fig. 1 c Power dissipation vs. on-state current and ambient temperature

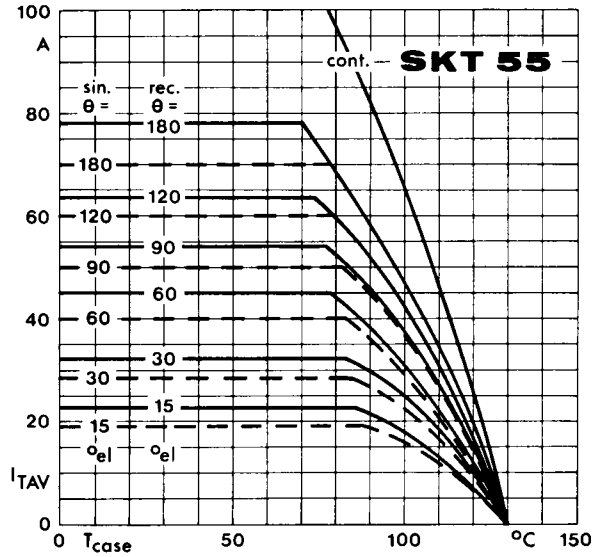



Fig. 2 a Rated on-state current vs. case temperature

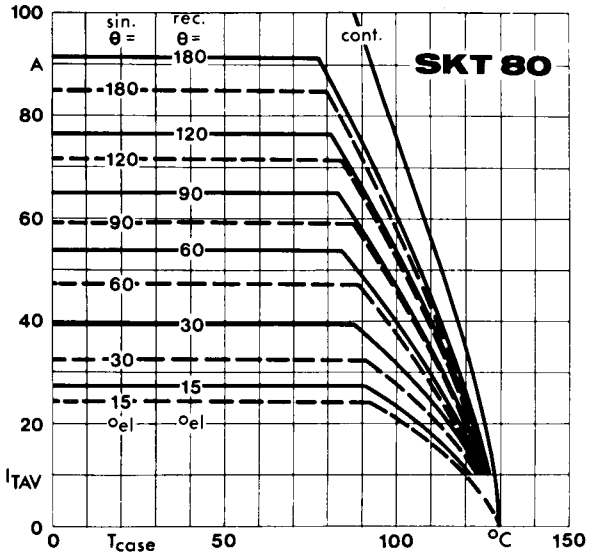



Fig. 2 b Rated on-state current vs. case temperature

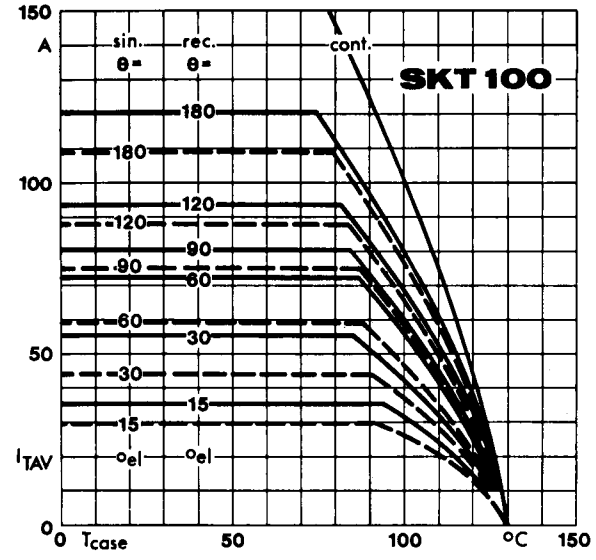



Fig. 2 c Rated on-state current vs. case temperature

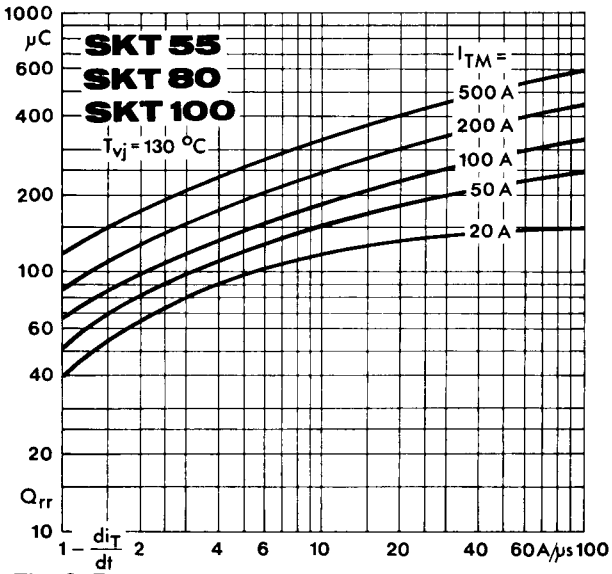



Fig. 3 Recovered charge vs. current decrease

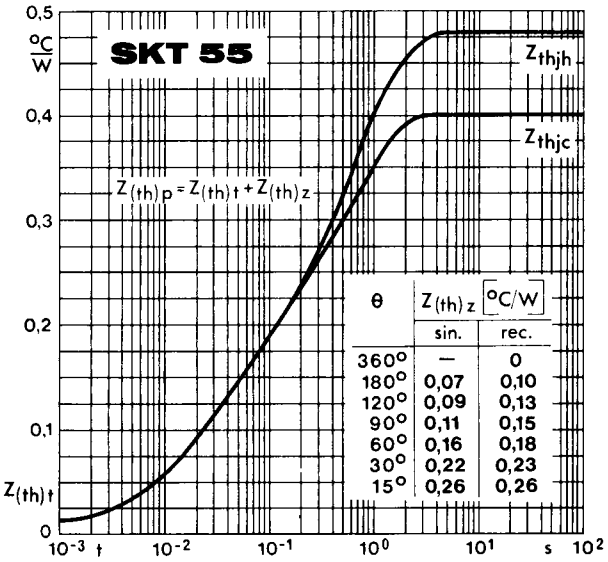



Fig. 4 a Transient thermal impedance vs. time

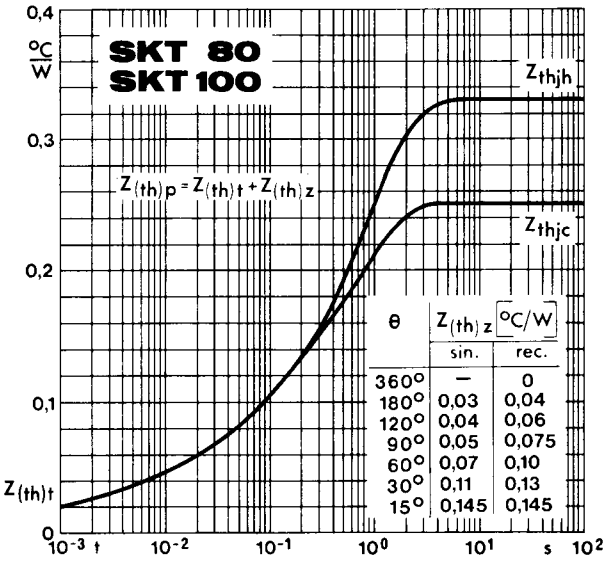



Fig. 4 b Transient thermal impedance vs. time

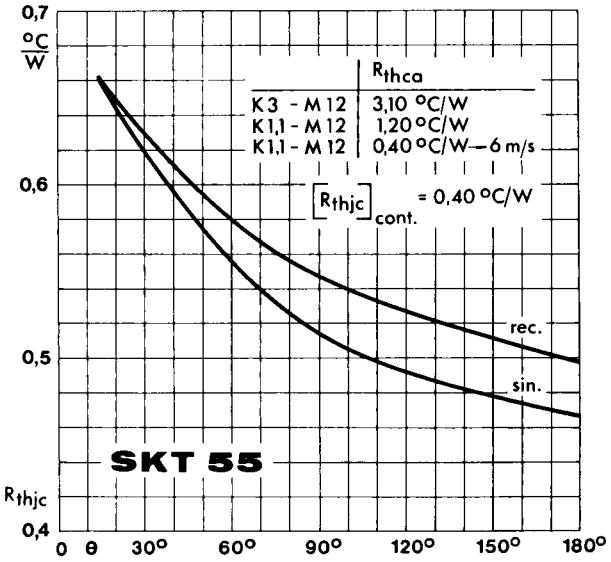



Fig. 5 a Thermal resistance vs. conduction angle

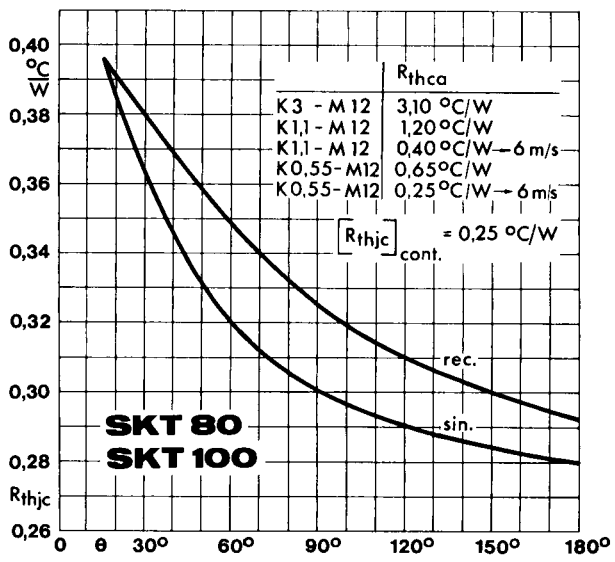



Fig. 5 b Thermal resistance vs. conduction angle

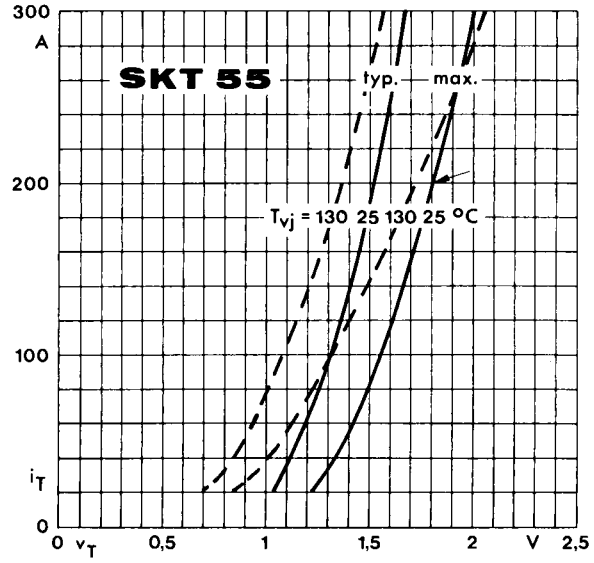



Fig. 6 a On-state characteristics

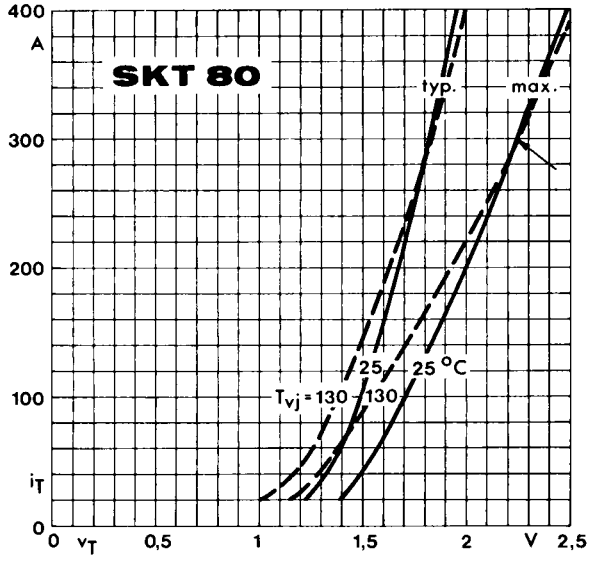



Fig. 6 b On-state characteristics

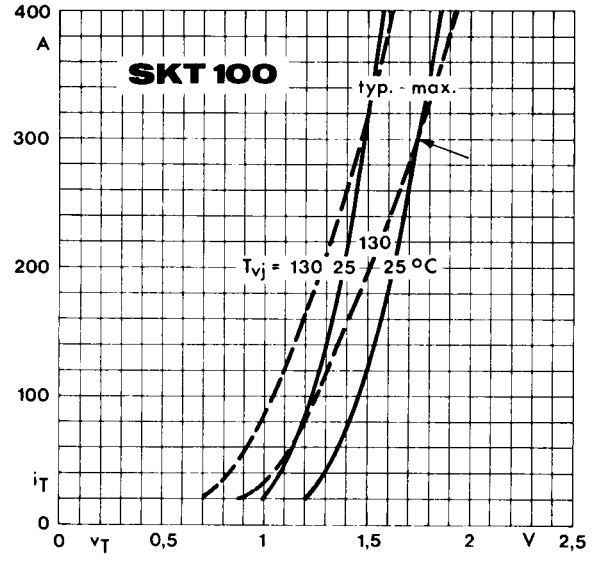



Fig. 6 c On-state characteristics

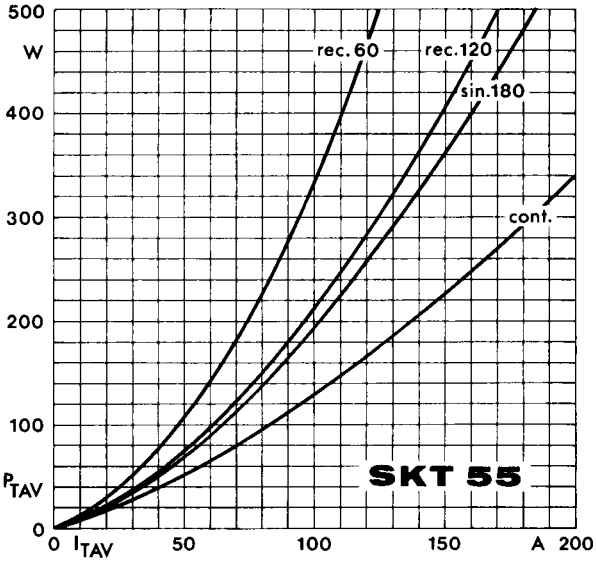



Fig. 7 a Power dissipation vs. on-state current

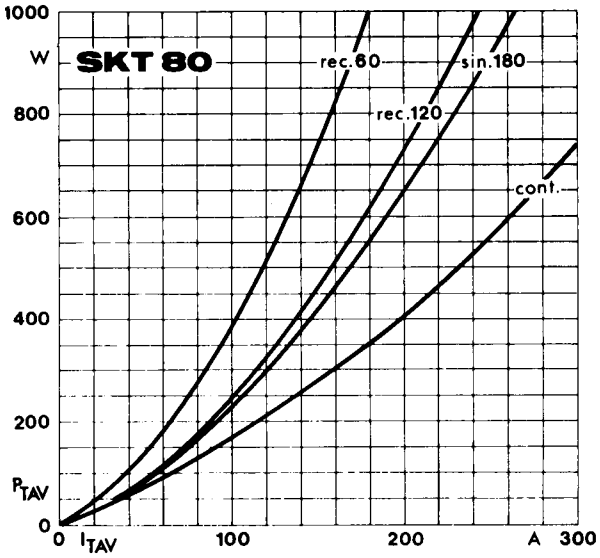



Fig. 7 b Power dissipation vs. on-state current

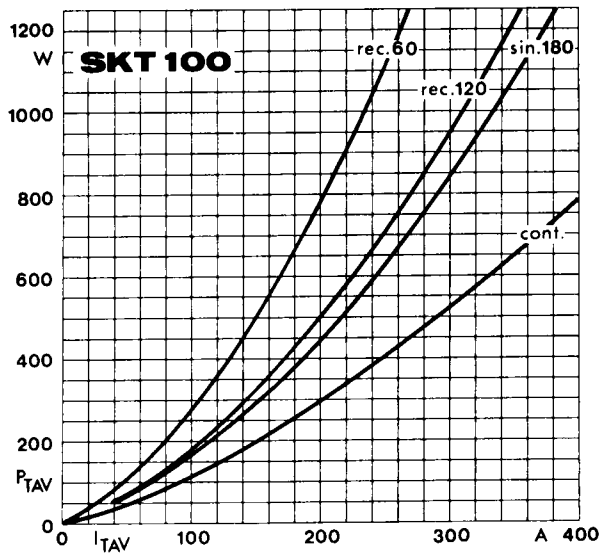



Fig. 7 c Power dissipation vs. on-state current

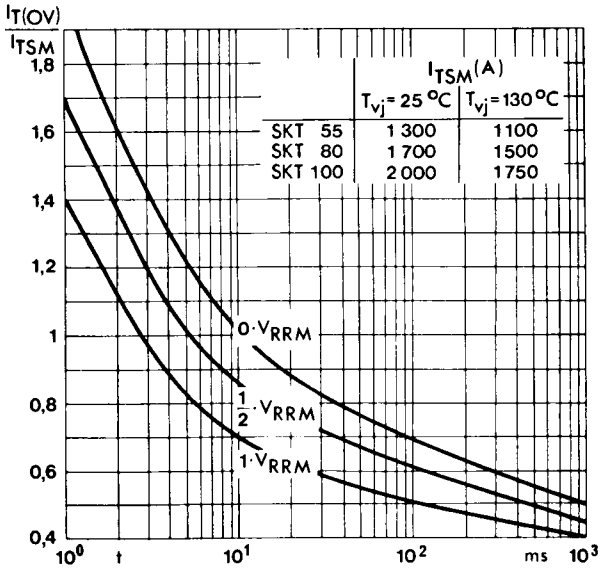



Fig. 8 Surge overload current vs. time

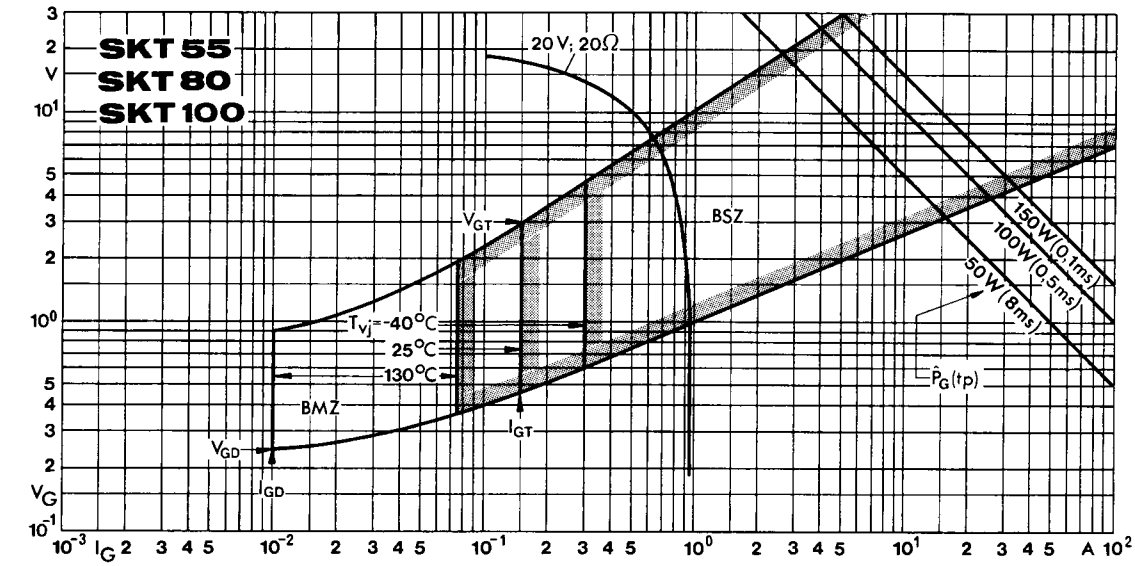
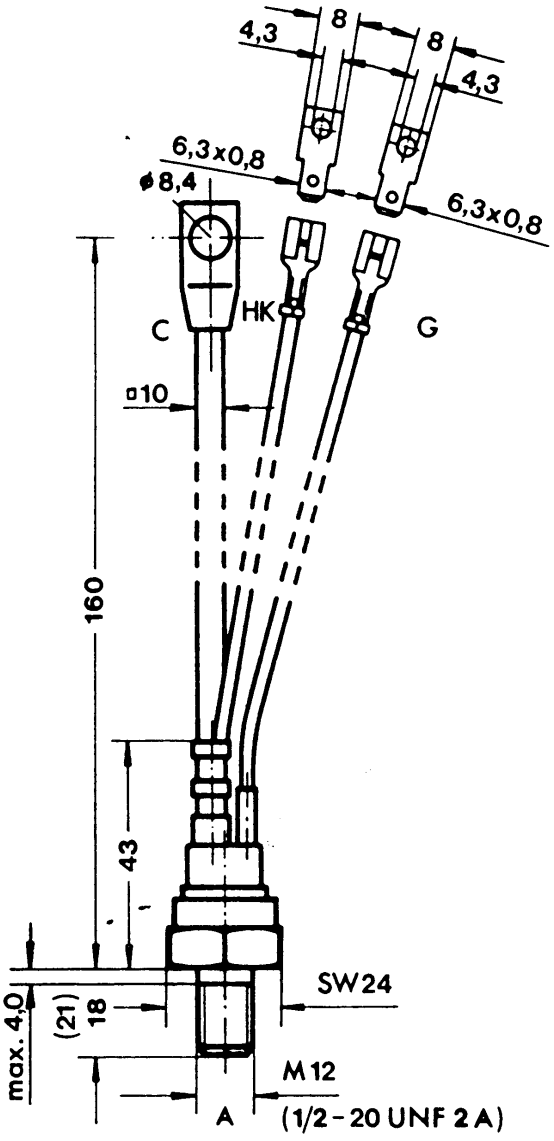



Fig. 9 Gate trigger characteristics

**SKT 55**
**SKT 80**
**SKT 100**

Case B 5

IEC-Publ. 191-2: (A 12 MA, A 12 U)
DIN 41892: (204 B 3)
BS 3934: SO – 30 C
JEDEC: TO – 209 (TO – 94)[1)]

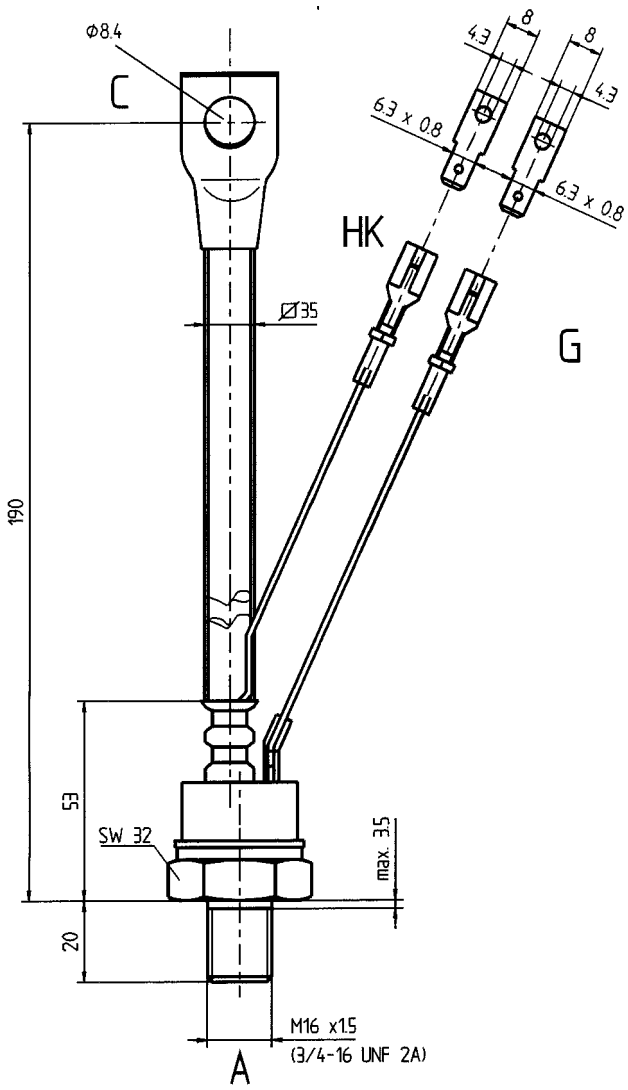



[1)] modified version. In the USA and Canada these types are available with the original TO-209 (TO-94) dimensions. TO-208 AD (TO-83) with flag terminals is also available.

**SKT 130**
**SKT 160**

Case B 6

IEC-Publ. 191-2: A 47 MC
DIN 41893: 205 B 4
JEDEC: TO-209 (TO-93)




C: Cathode terminal (red sleeve)
A: Anode terminal
G: Gate terminal (yellow sleeve)
HK: Auxiliary cathode terminal (red sleeve)

Dimensions in mm