

Thyristors

SKT 130 SKT 160



Features

- Hermetic metal cases with ceramic insulators
- Threaded studs ISO M16 x 1,5 or UNF 3/4-16
- 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)

| V _{RSM} | V _{RRM} V _{DRM} | $\left(\frac{dv}{dt}\right)_{cr}$ | I _{T(RMS)} (maximum values for continuous operation) | |
|------------------|--------------------------------------|-----------------------------------|---|----------------------|
| | | | 220 A | 280 A |
| V | V | V/μs | I _{TAV} (sin. 180; T _{case} = . . . °C) | |
| | | | 140 A (80 °C) | 178 A (78 °C) |
| 500 | 400 | 500 | SKT 130/04 D | SKT 160/04 D |
| 700 | 600 | 500 | SKT 130/06 D | SKT 160/06 D |
| 900 | 800 | 500 | SKT 130/08 D | SKT 160/08 D |
| 1300 | 1200 | 1000 | SKT 130/12 E | SKT 160/12 E* |
| 1500 | 1400 | 1000 | SKT 130/14 E | SKT 160/14 E |
| 1700 | 1600 | 1000 | SKT 130/16 E | SKT 160/16 E* |

| Symbol | Conditions | SKT 130 | SKT 160 | Units |
|-----------------------------------|---|--------------------|------------------|--------------------------------------|
| I _{TAV} | sin. 180; T _{case} = 85 °C | 130 | 160 | A |
| I _{TSM} | T _{vj} = 25 °C; 10 ms T _{vj} = 130 °C; 10 ms | 3500 3000 | 4300 3750 | A A |
| i ² t | T _{vj} = 25 °C; 8,35 ... 10 ms T _{vj} = 130 °C; 8,35 ... 10 ms | 61 000 45 000 | 92 500 70 000 | A ² s A ² s |
| t _{gd} | T _{vj} = 25 °C; I _G = 1 A; di _G /dt = 1 A/μs | typ. 1 typ. 2 | | μs μs |
| t _{gr} | V _D = 0,67 · V _{DRM} | 100 | | A/μs |
| (di/dt) _{cr} | f = 50 ... 60 Hz | typ. 150; max. 250 | | mA |
| I _H | T _{vj} = 25 °C | typ. 300; max. 600 | | mA |
| I _L | T _{vj} = 25 °C; R _G = 33 Ω | 120 | | μs |
| t _q | T _{vj} = 130 °C; typ. | | | |
| V _T | T _{vj} = 25 °C; I _T = 500 A; max. | 2,25 | 1,75 | V |
| V _{T(TO)} | T _{vj} = 130 °C | 1,20 | 1,0 | V |
| r _T | T _{vj} = 130 °C | 2,2 | 1,5 | mΩ |
| I _{DD} , I _{RD} | T _{vj} = 130 °C; V = V _{DRM} ; V _{RRM} | 50 | 50 | mA |
| V _{GT} | T _{vj} = 25 °C | 3 | | V |
| I _{GT} | T _{vj} = 25 °C | 200 | | mA |
| V _{GD} | T _{vj} = 130 °C | 0,25 | | V |
| I _{GD} | T _{vj} = 130 °C | 10 | | mA |
| R _{thjc} | cont. | 0,16 | | °C/W |
| | sin. 180/rec. 120 | 0,18/0,20 | | °C/W |
| R _{thch} | | 0,03 | | °C/W |
| T _{vj} | | - 40 ... +130 | | °C |
| T _{stg} | | - 55 ... +150 | | °C |
| M | SI units | 30 | | Nm |
| | US units | 265 | | lb. in. |
| a | | 5 · 9,81 | | m/s ² |
| w | | 210 | | g |
| Case | | B 6 | | |

* Available with UNF thread 3/4-16 UNF2A; e.g. SKT 160/12 E UNF

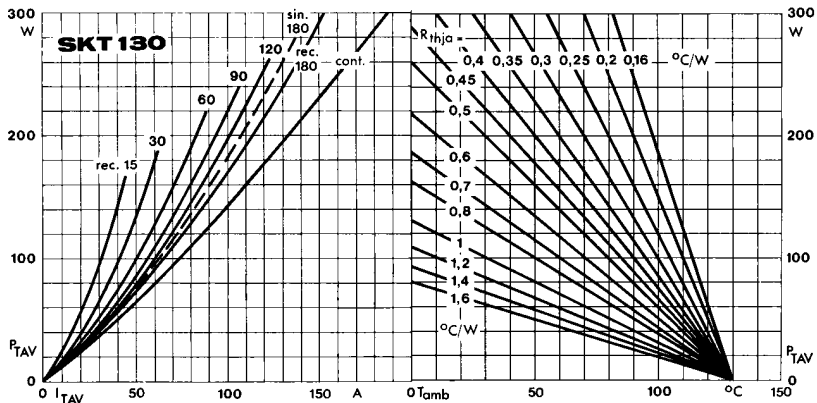


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

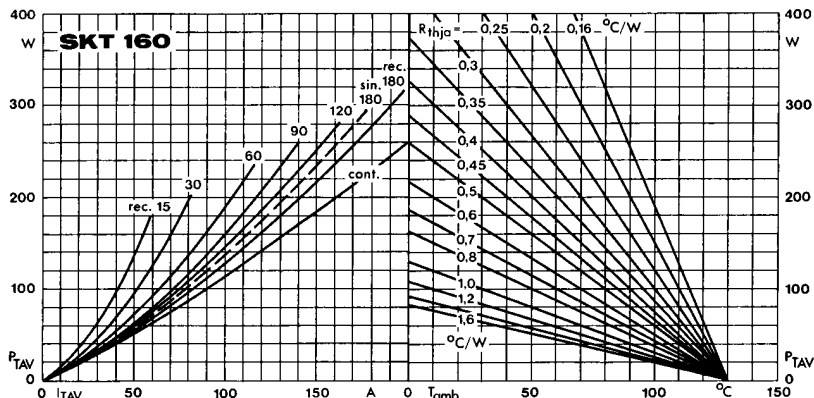


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

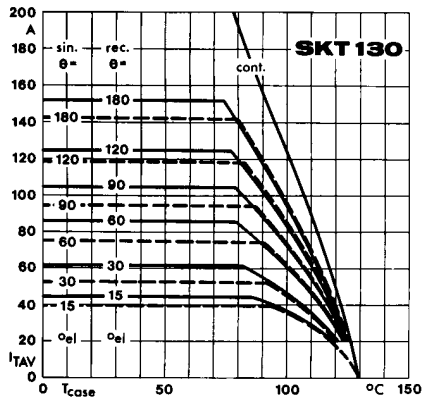


Fig. 2 a Rated on-state current vs. case temperature

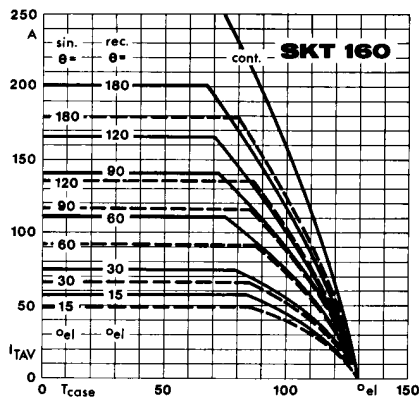


Fig. 2 b Rated on-state current vs. case temperature

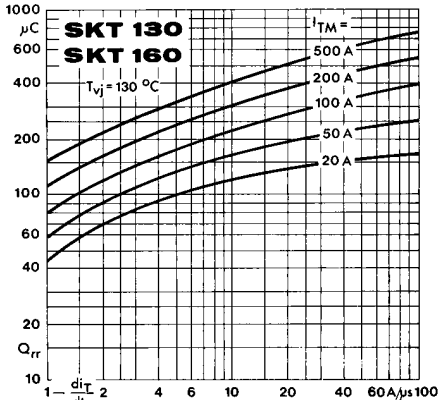


Fig. 3 Recovered charge vs. current decrease

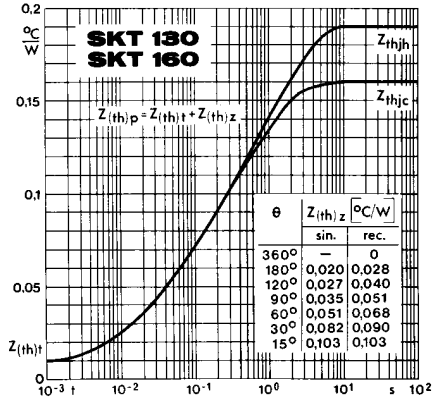


Fig. 4 Transient thermal impedance vs. time

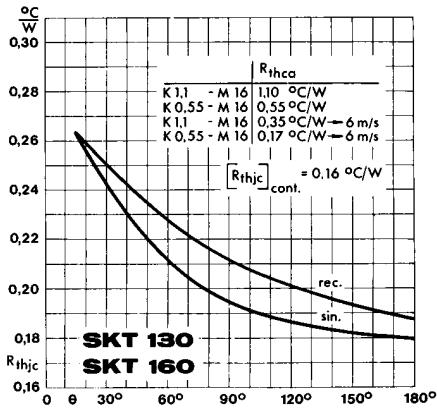


Fig. 5 Thermal resistance vs. conduction angle

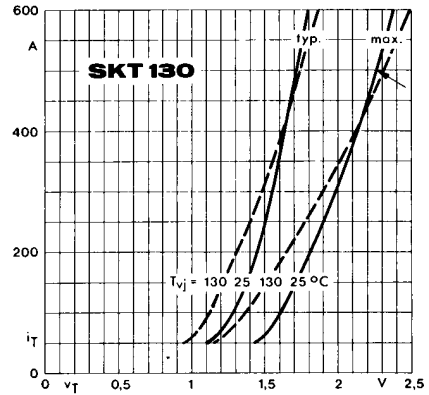


Fig. 6 a On-state characteristics

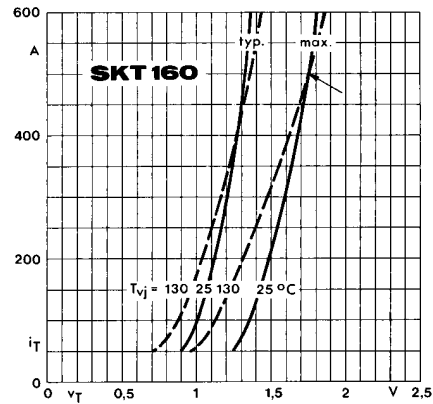


Fig. 6 b On-state characteristics

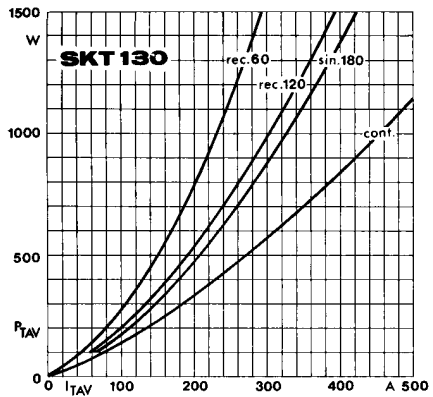


Fig. 7 a Power dissipation vs. on-state current

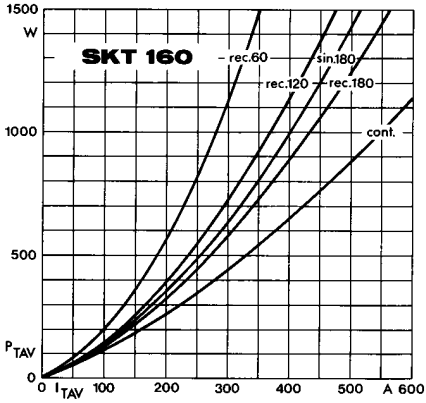


Fig. 7 b Power dissipation vs. on-state current

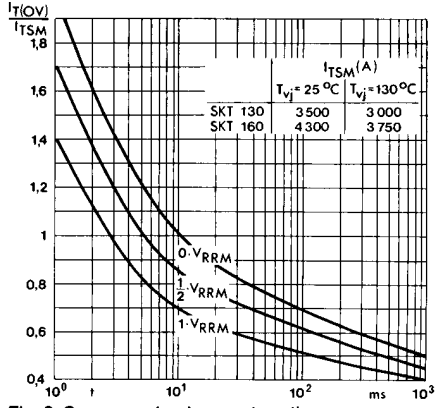


Fig. 8 Surge overload current vs. time

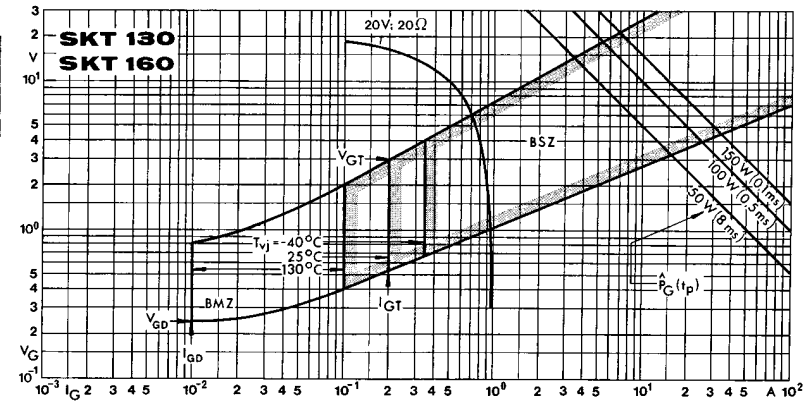


Fig. 9 Gate trigger characteristics