

Thyristors

SKT 40
SKT 50



| V _{RSM} | V _{R_{RRM}} V _{D_{DRM}} | $\left(\frac{dv}{dt}\right)_{cr}$ | I _{T_{RMS}} (maximum values for continuous operation) | |
|------------------|--|-----------------------------------|--|---------------------|
| | | | 63 A | 78 A |
| V | V | V/μs | I _{TAV} (sin. 180; T _{case} = . . . °C) | |
| | | | 40 A (80 °C) | 50 A (78 °C) |
| 500 | 400 | 500 | SKT 40/04 D | – |
| 700 | 600 | 500 | SKT 40/06 D | SKT 50/06 D* |
| 900 | 800 | 500 | SKT 40/08 D | SKT 50/08 D |
| 1300 | 1200 | 1000 | SKT 40/12 E | SKT 50/12 E* |
| 1500 | 1400 | 1000 | SKT 40/14 E | SKT 50/14 E* |
| 1700 | 1600 | 1000 | SKT 40/16 E | SKT 50/16 E* |
| 1900 | 1800 | 1000 | SKT 40/18 E+ | SKT 50/18 E+ |

| Symbol | Conditions | SKT 40 | SKT 50 | Units |
|-----------------------------------|--|----------------------|----------------------|--------------------------------------|
| I _{TAV} | sin. 180; T _{case} = 85 °C | 38 | 45 | A |
| I _{TSM} | T _{vj} = 25 °C; 10 ms T _{vj} = 130 °C; 10 ms | 700 600 | 1050 900 | A A |
| i ² t | T _{vj} = 25 °C; 8,35 ... 10 ms T _{vj} = 130 °C; 8,35 ... 10 ms | 2500 1800 | 5000 4000 | A ² s A ² s |
| 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 _{D_{DRM}} | typ. 1,5 | | μs |
| (di/dt) _{cr} | f = 50 ... 60 Hz | 50 | | A/μs |
| I _H | T _{vj} = 25 °C | typ. 100; max. 200 | | mA |
| I _L | T _{vj} = 25 °C; R _G = 33 Ω | typ. 250; max. 400 | | mA |
| t _q | T _{vj} = 130 °C; typ. | 100 | | μs |
| V _T | T _{vj} = 25 °C; I _T = 120 A; max. | 1,95 | 1,8 | V |
| V _{T(TO)} | T _{vj} = 130 °C | 1,0 | 1,1 | V |
| r _T | T _{vj} = 130 °C | 9 | 5 | mΩ |
| I _{DD} , I _{RD} | T _{vj} = 130 °C; V _{DD} = V _{D_{DRM}} V _{RD} = V _{R_{RRM}} | 8 | 8 | 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 | 5 | | mA |
| R _{thjc} | cont. sin. 180 rec. 120 | 0,60 0,66 0,70 | 0,57 0,60 0,65 | °C/W °C/W °C/W |
| R _{thch} | | 0,20 | | °C/W |
| T _{vj} | | – 40 ... +130 | | °C |
| T _{stg} | | – 55 ... +150 | | °C |
| M | SI units | 4 (UNF: 2,5) | | Nm |
| a | US units | 35 (UNF: 22) | | lb. in. |
| w | | 5 · 9,81 | | m/s ² |
| | | 2,2 | | g |
| Case | | B 3 | | |

Features

- Hermetic metal cases with glass insulators
- Threaded studs ISO M8 or UNF 1/4-28
- 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 1/4-28 UNF2A, e.g. SKT 50/06 D UNF

♦ available in limited quantities

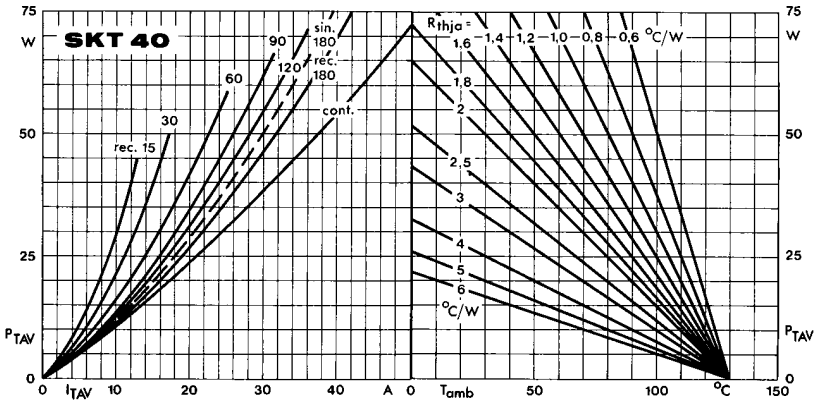


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

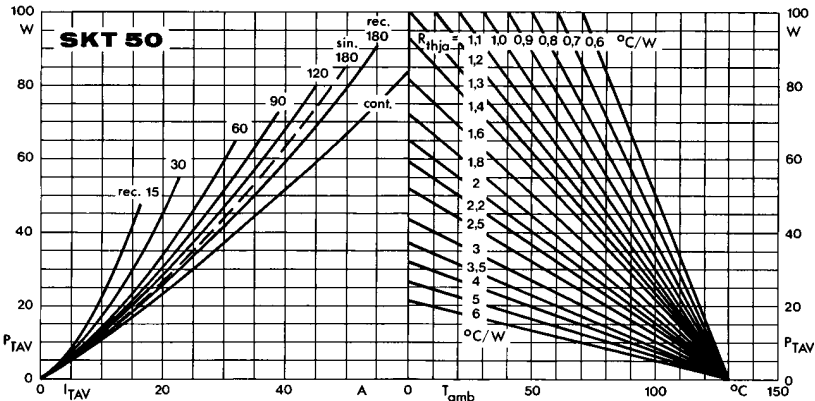


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

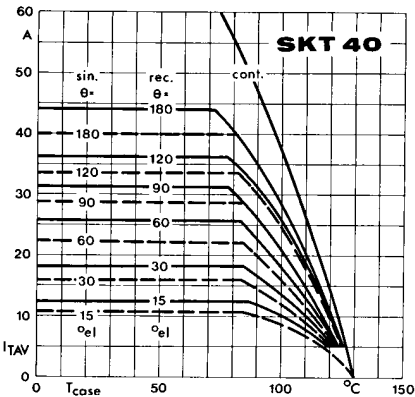


Fig. 2 a Rated on-state current vs. case temperature

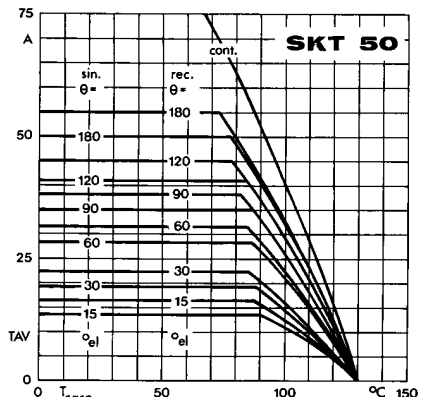


Fig. 2 b Rated on-state current vs. case temperature

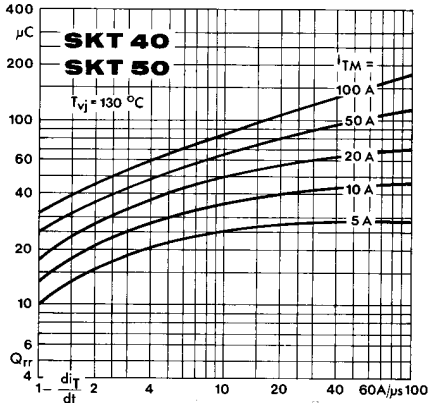


Fig. 3 Recovered charge vs. current decrease

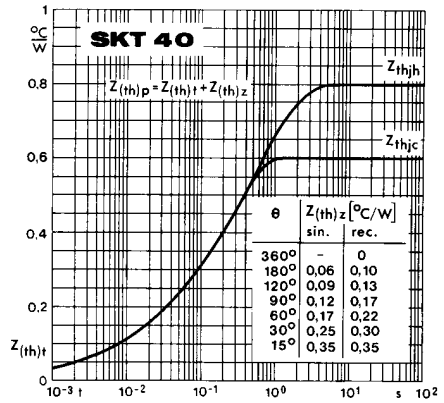


Fig. 4 a Transient thermal impedance vs. time

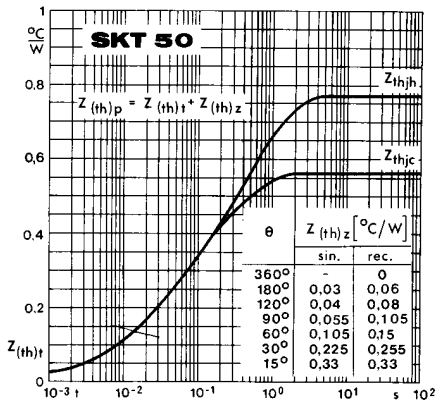


Fig. 4 b Transient thermal impedance vs. time

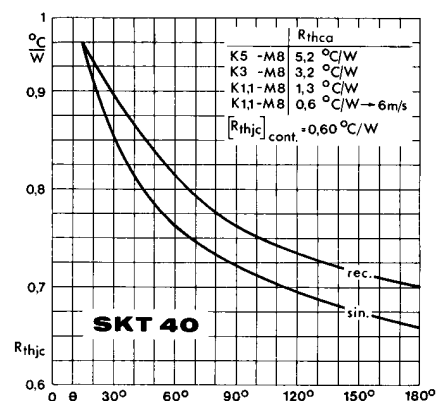


Fig. 5 a Thermal resistance vs. conduction angle

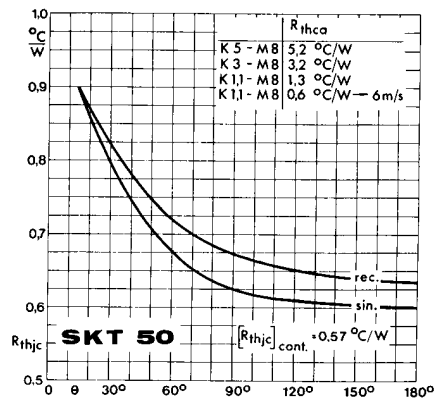


Fig. 5 b Thermal resistance vs. conduction angle

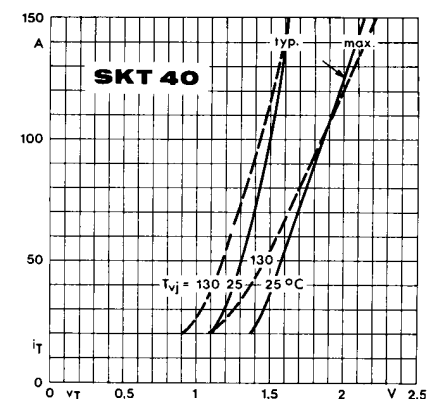


Fig. 6 a On-state characteristics

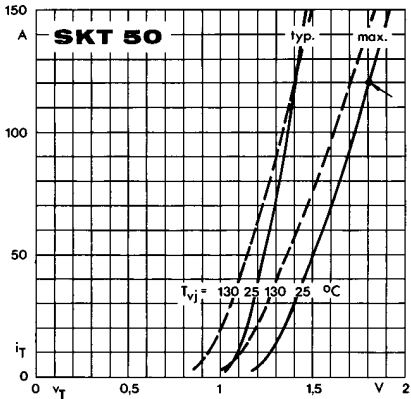


Fig. 6 b On-state characteristics

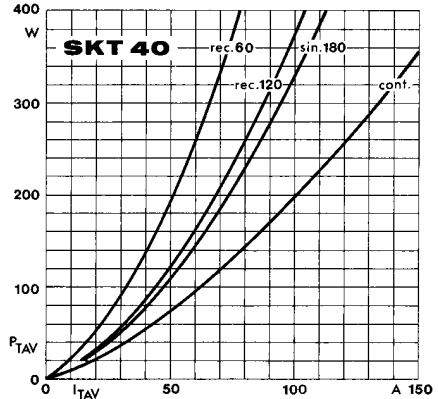


Fig. 7 a Power dissipation vs. on-state current

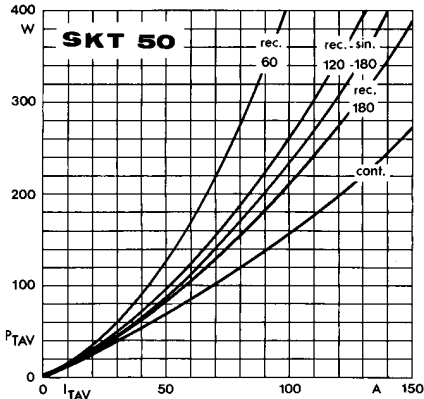


Fig. 7 b Power dissipation vs. on-state current

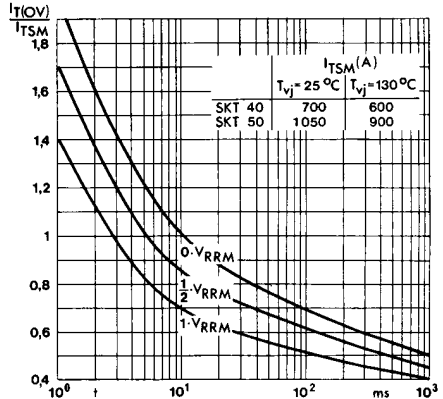


Fig. 8 Surge overload current vs. time

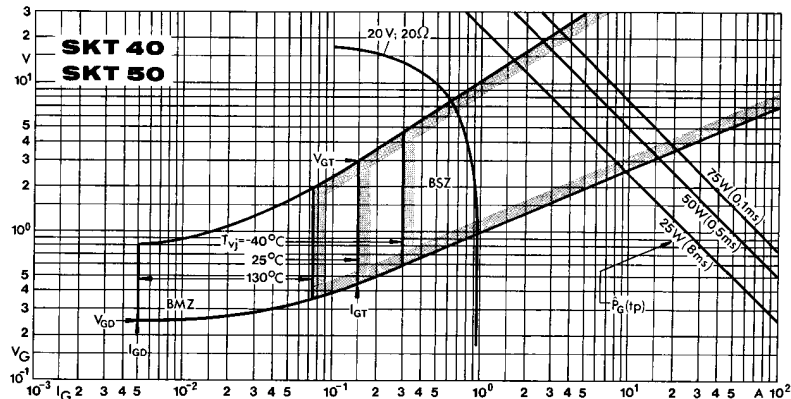


Fig. 9 Gate trigger characteristics