Thyristors

SKT 40
SKT 50

V_{RSM} V	V_{RRM} V_{DRM} V	$(dv/dt)_{cr}$ V/µs	I_{TRMS} (maximum values for continuous operation) 63 A	78 A
			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	700	1050	A
	T_{vj} = 130 °C; 10 ms	600	900	A
i^2t	T_{vj} = 25 °C; 8,35 ... 10 ms	2500	5000	A^2s
	T_{vj} = 130 °C; 8,35 ... 10 ms	1800	4000	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. 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_{DRM}; V_{RD} = V_{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.	0,60	0,57	°C/W
	sin. 180	0,66	0,60	°C/W
	rec. 120	0,70	0,65	°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
	US units	35 (UNF: 22)		lb. in.
a		5 · 9,81		m/s^2
w		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

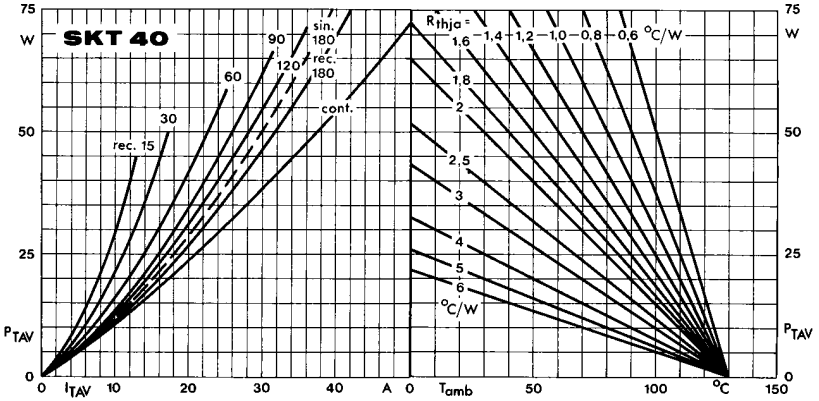

Fig. 1 a Power dissipation vs. on-state current and ambient temperature

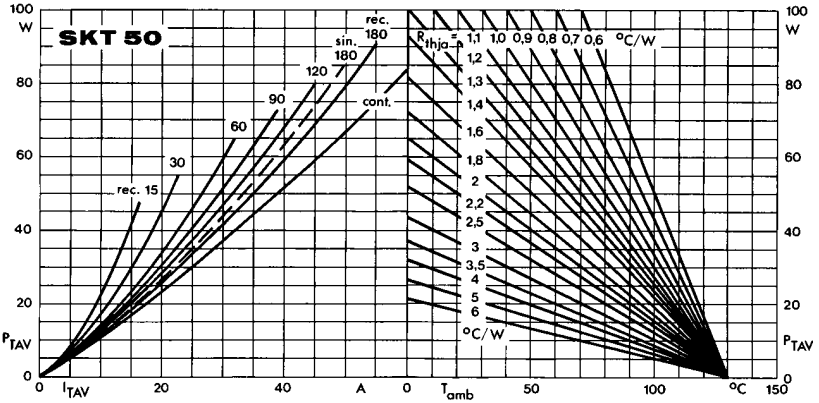

Fig. 1 b Power dissipation vs. on-state current and ambient temperature

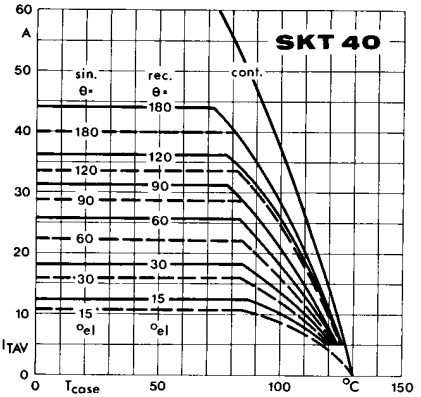

Fig. 2 a Rated on-state current vs. case temperature

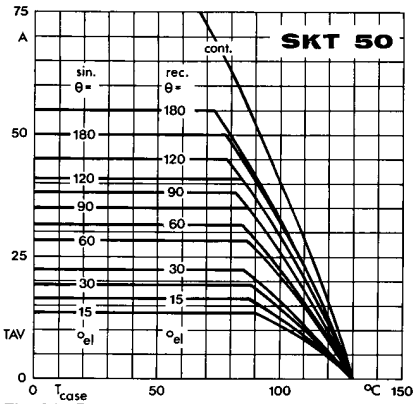

Fig. 2 b Rated on-state current vs. case temperature

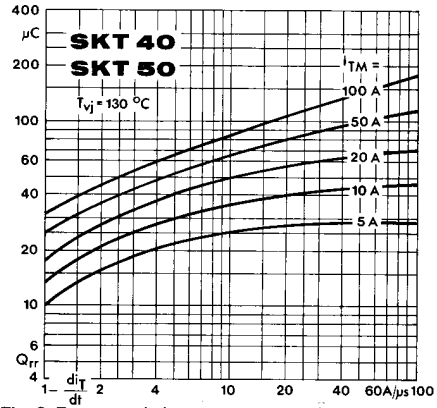

Fig. 3 Recovered charge vs. current decrease

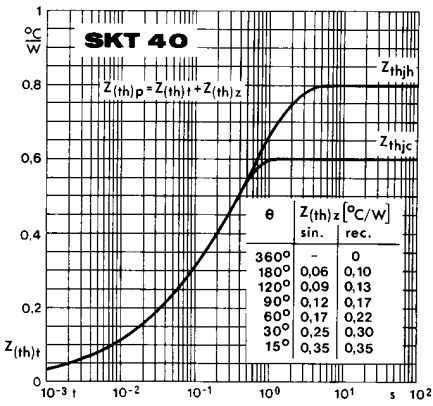

Fig. 4 a Transient thermal impedance vs. time

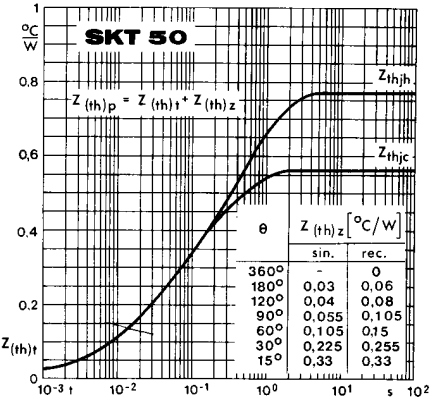

Fig. 4 b Transient thermal impedance vs. time

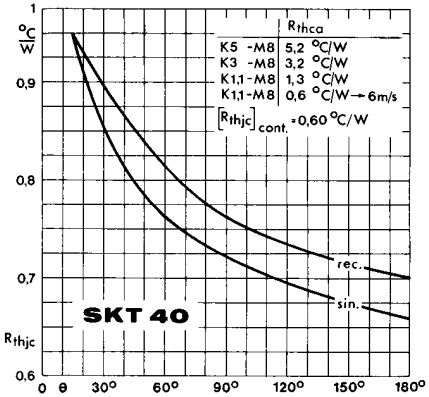

Fig. 5 a Thermal resistance vs. conduction angle

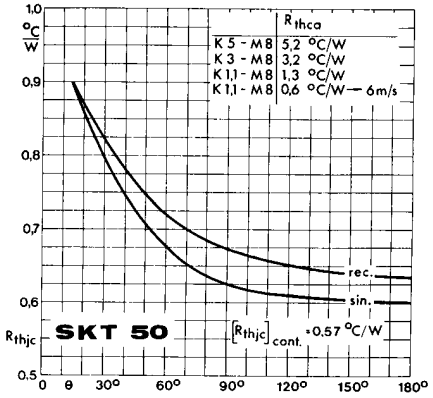

Fig. 5 b Thermal resistance vs. conduction angle

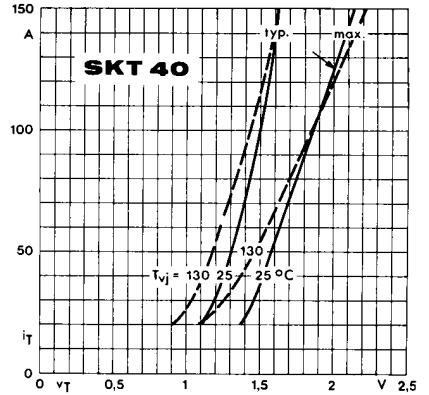

Fig. 6 a On-state characteristics

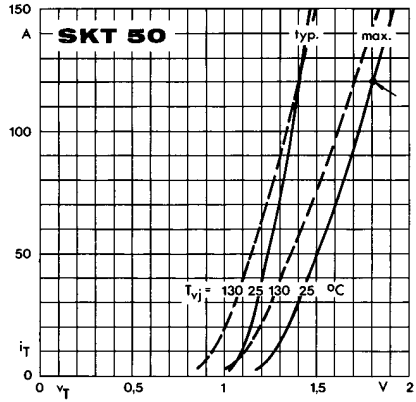

Fig. 6 b On-state characteristics

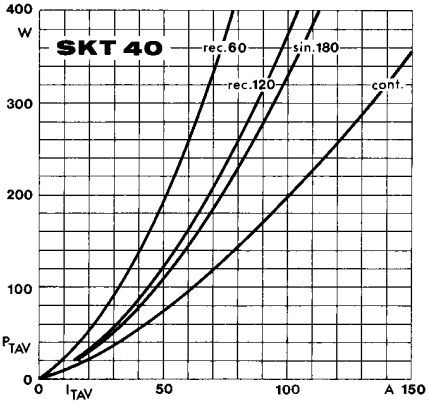

Fig. 7 a Power dissipation vs. on-state current

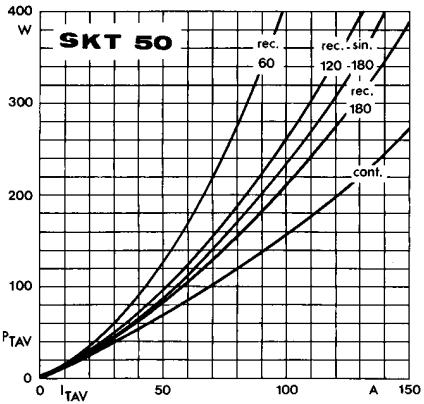

Fig. 7 b Power dissipation vs. on-state current

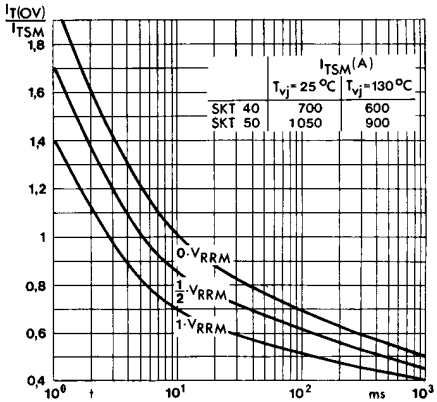

Fig. 8 Surge overload current vs. time

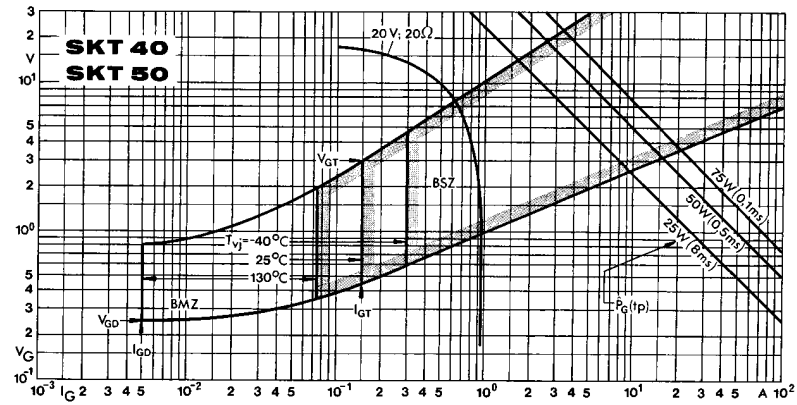

Fig. 9 Gate trigger characteristics