

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_{TRMS} (maximum values for continuous operation)	
			220 A	280 A
V	V	V/ μ s	I_{TAV} (sin. 180; $T_{case} = \dots$ °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	3500	4300	A
	$T_{vj} = 130$ °C; 10 ms	3000	3750	A
i^2t	$T_{vj} = 25$ °C; 8,35 ... 10 ms	61 000	92 500	A ² s
	$T_{vj} = 130$ °C; 8,35 ... 10 ms	45 000	70 000	A ² s
t_{gd}	$T_{vj} = 25$ °C; $I_G = 1$ A; $di_G/dt = 1$ A/ μ s	typ. 1		μ s
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	typ. 2		μ s
$(di/dt)_{cr}$	$f = 50 \dots 60$ Hz	100		A/ μ s
I_H	$T_{vj} = 25$ °C	typ. 150; max. 250		mA
I_L	$T_{vj} = 25$ °C; $R_G = 33$ Ω	typ. 300; max. 600		mA
t_q	$T_{vj} = 130$ °C; typ.	120		μ s
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	m Ω
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

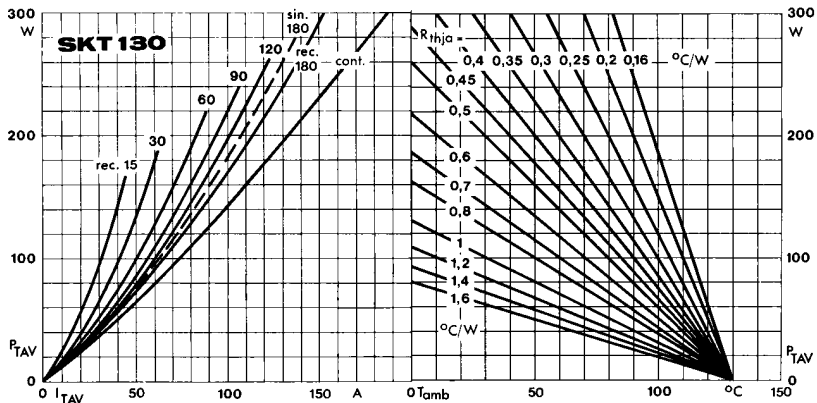


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

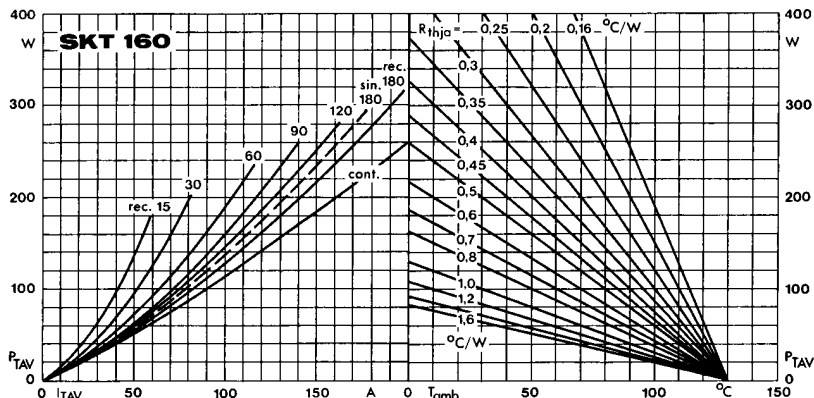


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

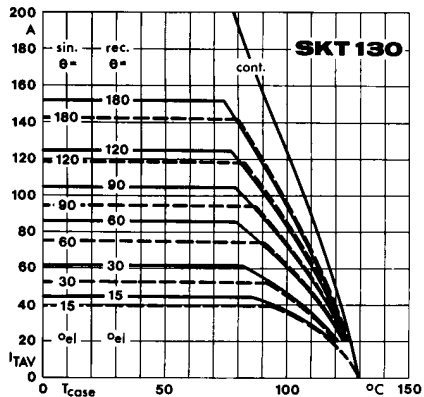


Fig. 2 a Rated on-state current vs. case temperature

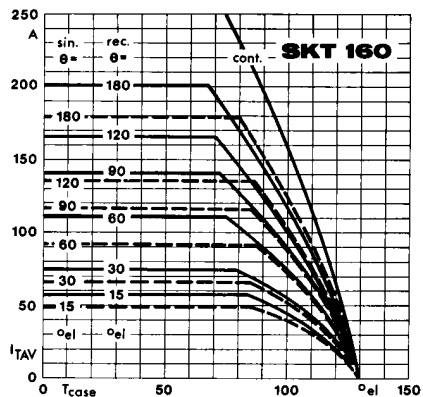


Fig. 2 b Rated on-state current vs. case temperature

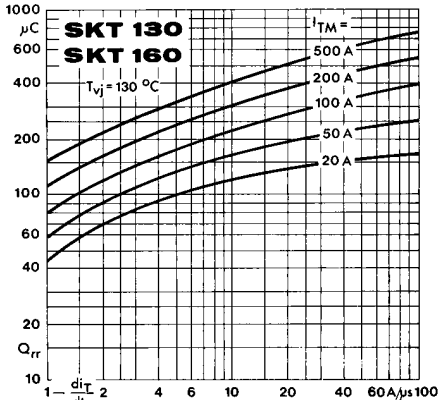


Fig. 3 Recovered charge vs. current decrease

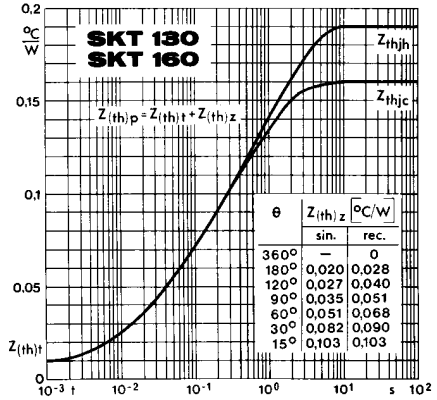


Fig. 4 Transient thermal impedance vs. time

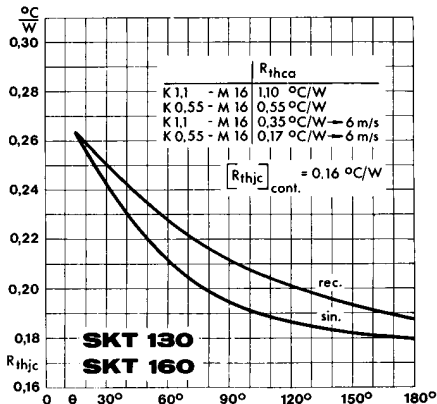


Fig. 5 Thermal resistance vs. conduction angle

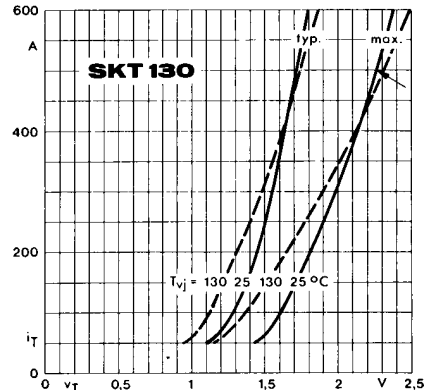


Fig. 6 a On-state characteristics

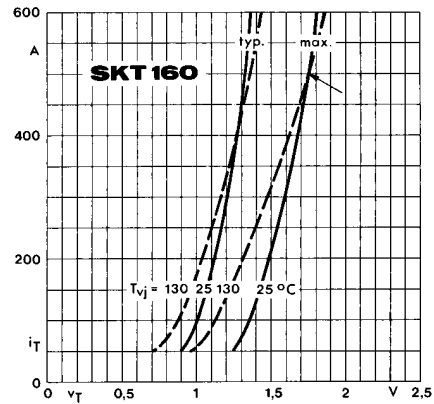


Fig. 6 b On-state characteristics

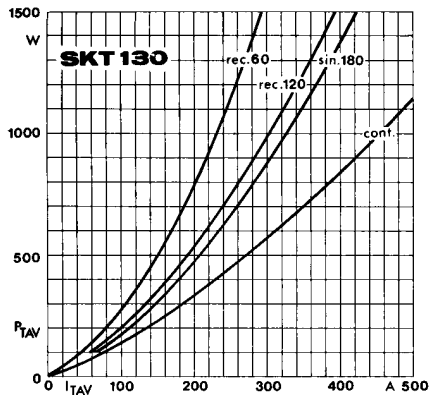


Fig. 7 a Power dissipation vs. on-state current

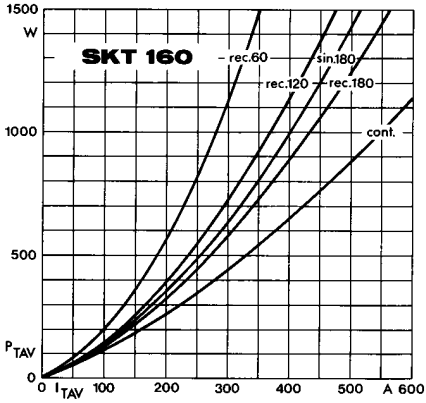


Fig. 7 b Power dissipation vs. on-state current

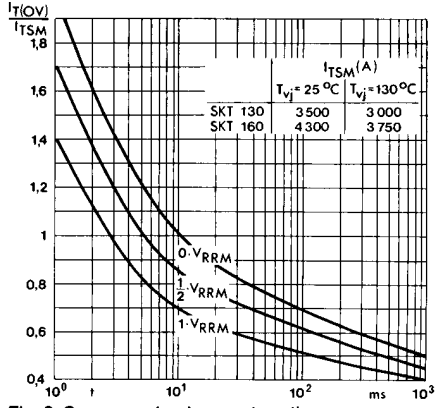


Fig. 8 Surge overload current vs. time

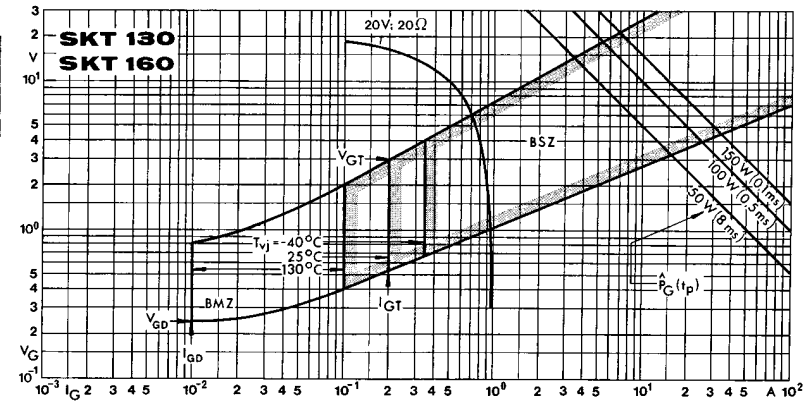


Fig. 9 Gate trigger characteristics