

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

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

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

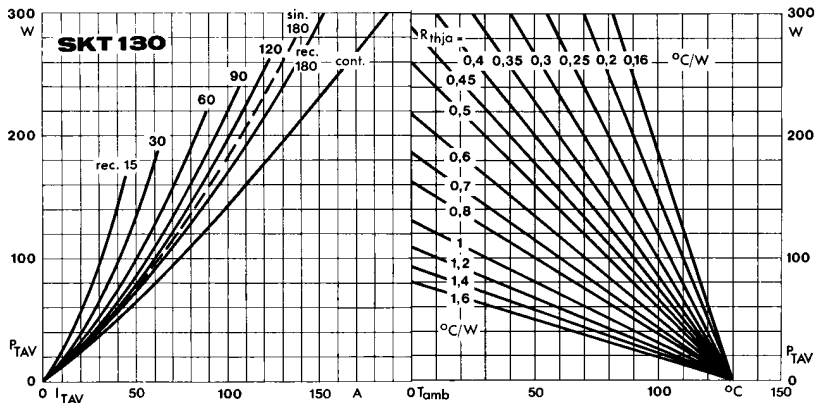


Fig. 1 a Power dissipation vs. on-state current and ambient temperature

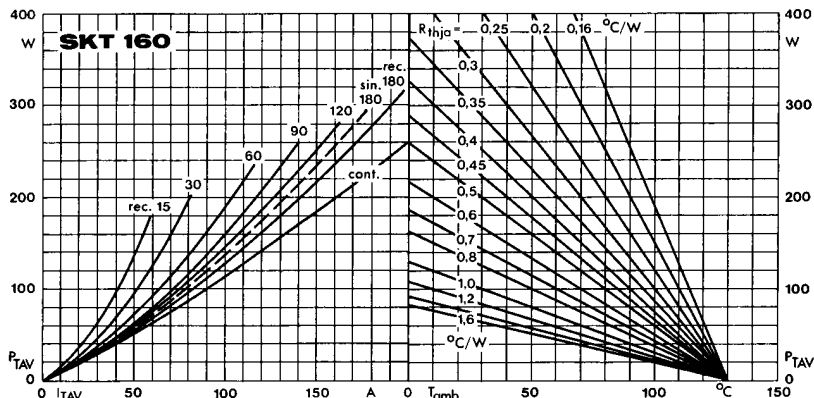


Fig. 1 b Power dissipation vs. on-state current and ambient temperature

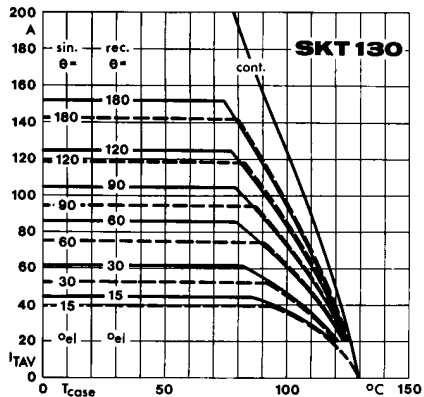


Fig. 2 a Rated on-state current vs. case temperature

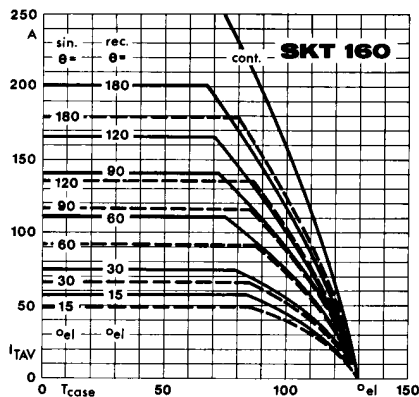


Fig. 2 b Rated on-state current vs. case temperature

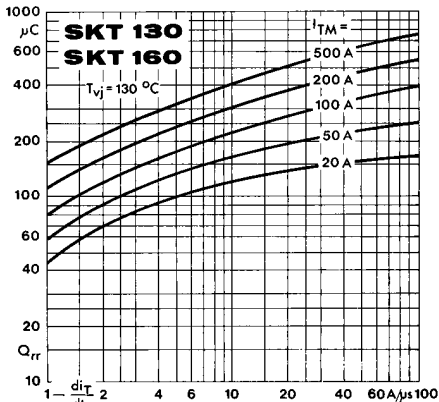


Fig. 3 Recovered charge vs. current decrease

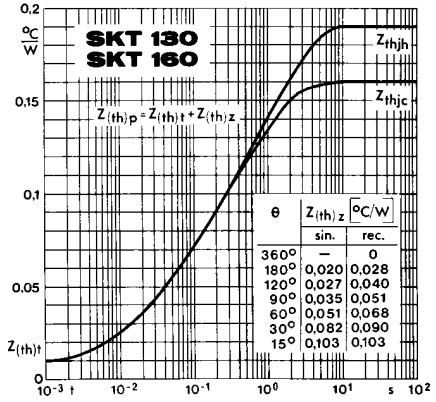


Fig. 4 Transient thermal impedance vs. time

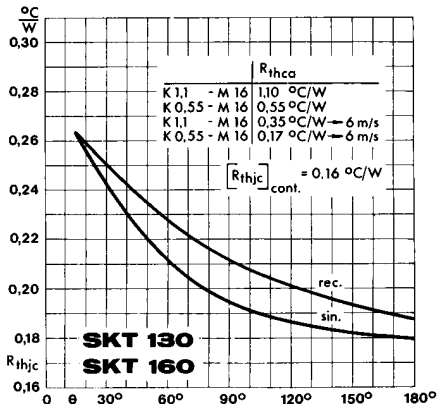


Fig. 5 Thermal resistance vs. conduction angle

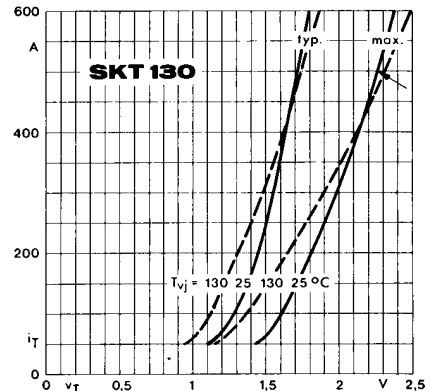


Fig. 6 a On-state characteristics

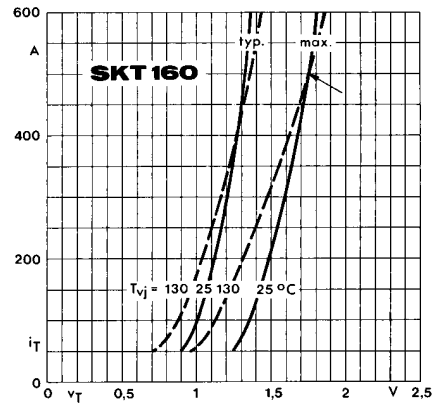


Fig. 6 b On-state characteristics

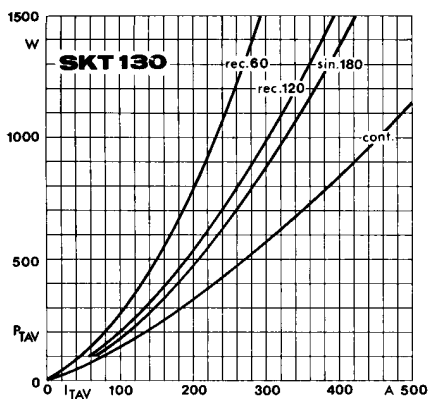


Fig. 7 a Power dissipation vs. on-state current

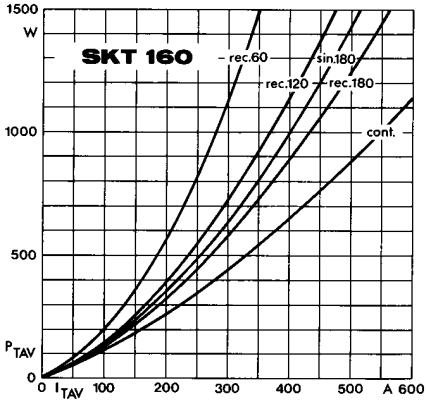


Fig. 7 b Power dissipation vs. on-state current

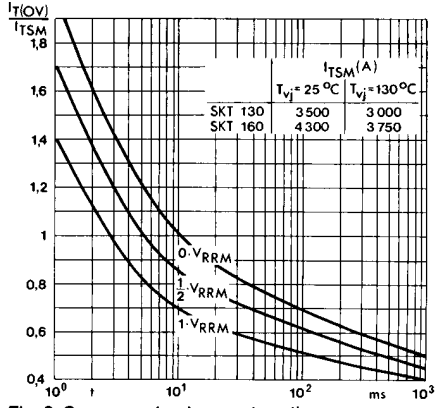


Fig. 8 Surge overload current vs. time

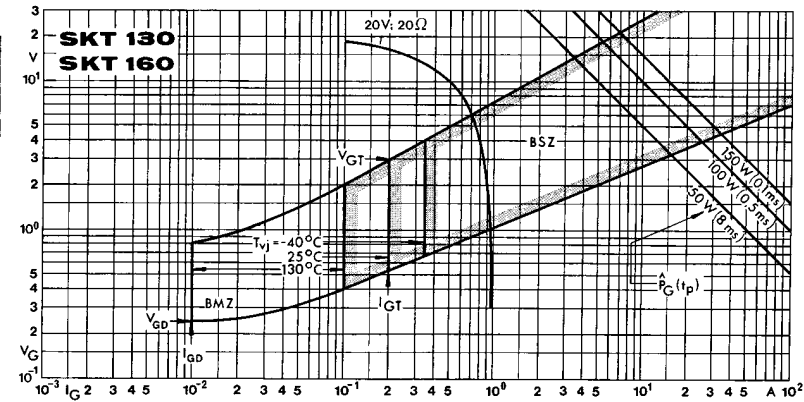


Fig. 9 Gate trigger characteristics