Capsule Thyristor

Line Thyristor

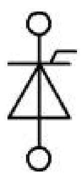
SKT 240

Features

- Hermetic metal case with ceramic insulator
- Capsule package for double sided cooling
- Shallow design with single sided cooling
- International standard case
- Off-state and reverse voltages up to1800 V

Typical Applications

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)
- Recommended snubber network e. g. for $V_{VRMS} \leq$ 400 V: R = 33 Ω/32 W, C = 0,47 µF



SKT

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 600 A (maximum value for continuous operation) I_{TAV} = 240 A (sin. 180; DSC; T_c = 93 °C)		
500	400	SKT 240/04E		
900	800	SKT 240/08E		
1300	1200	SKT 240/12E		
1500	1400	SKT 240/14E		
1700	1600	SKT 240/16E		
1900	1800	SKT 240/18E		

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 100 (85) °C;	204 (282)	A
I_D	2 x P8/180; T_a = 45 °C; B2 / B6	275 / 390	A
	2 x P8/180F; T_a = 35 °C; B2 / B6	540 /750	A
I_{RMS}	2 x P8/180; T_a = 45 °C; W1C	300	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	5000	A
	T_{vj} = 125 °C; 10 ms	4500	A
i²t	T_{vj} = 25 °C; 8,3 ... 10 ms	125000	A²s
	T_{vj} = 125 °C; 8,3 ... 10 ms	101000	A²s
V_T	T_{vj} = 25 °C; I_T = 1000 A	max. 2,3	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 1	V
r_T	T_{vj} = 125 °C	max. 1,4	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; $V_{RD} = V_{RRM}$; $V_{DD} = V_{DRM}$	max. 40	mA
t_{gd}	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	1	µs
t_{gr}	V_D = 0,67 * V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj} = 125 °C	max. 125	A/µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 1000	V/µs
t_q	T_{vj} = 125 °C ,	50 ... 150	µs
I_H	T_{vj} = 25 °C; typ. / max.	150 / 400	mA
I_L	T_{vj} = 25 °C; typ. / max.	300 / 1000	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 2	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 150	mA
V_{GD}	T_{vj} = 125 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 125 °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; DSC	0,07	K/W
$R_{th(j-c)}$	sin. 180; DSC / SSC	0,072 / 0,151	K/W
$R_{th(j-c)}$	rec. 120; DSC / SSC	0,08 / 0,168	K/W
$R_{th(c-s)}$	DSC / SSC	0,02 / 0,04	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 130	°C
V_{isol}		-	V~
F	mounting force	4 ... 5	kN
a			m/s²
m	approx.	55	g
Case		B 8	

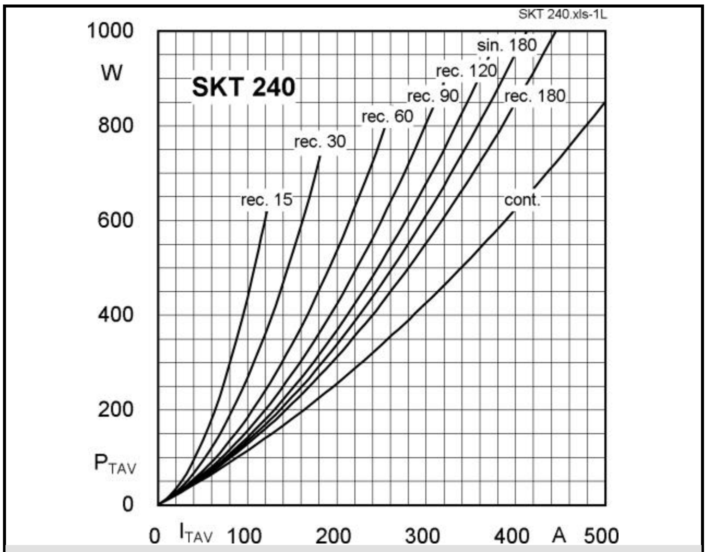


Fig. 1L Power dissipation vs. on-state current

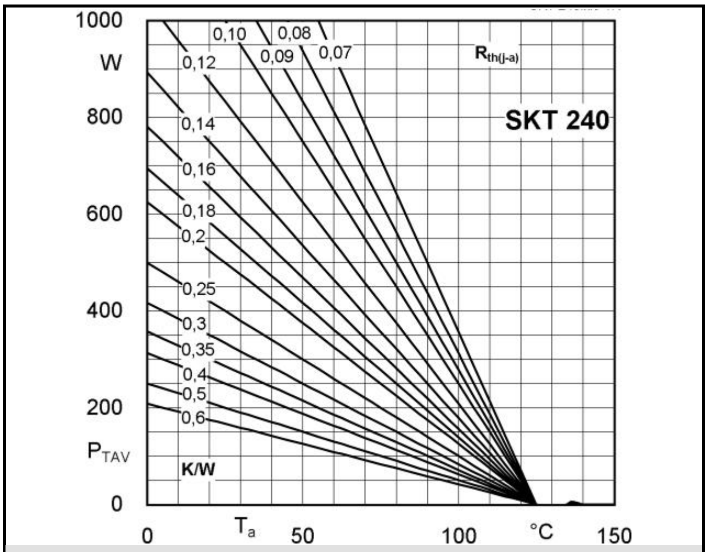


Fig. 1R Power dissipation vs. ambient temperature

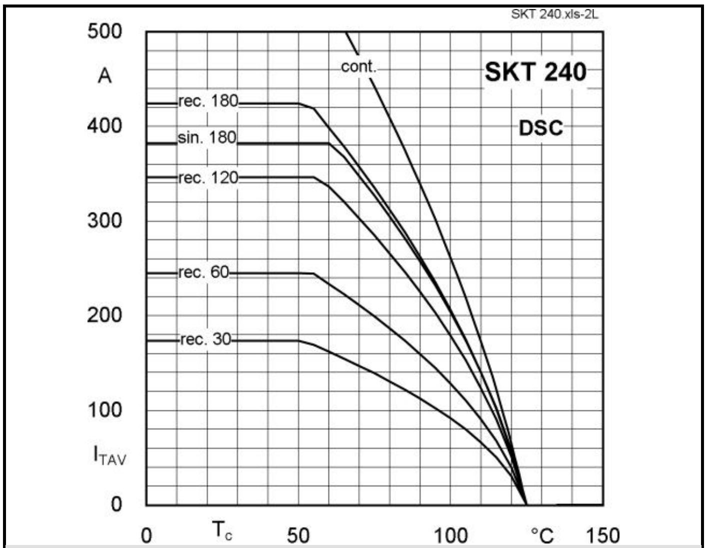


Fig. 2L Rated on-state current vs. case temperature

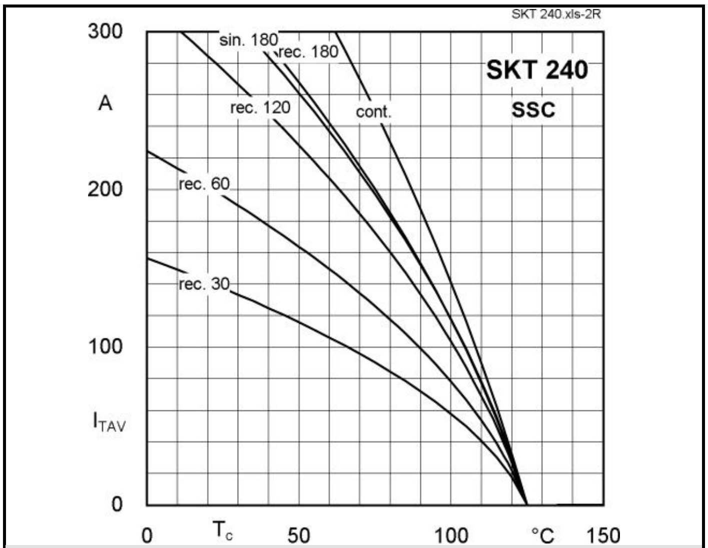


Fig. 2R Rated on-state current vs. case temperature

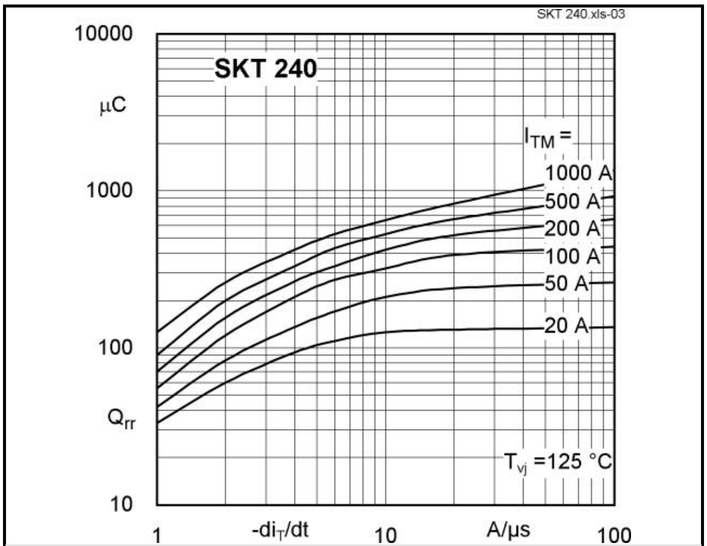
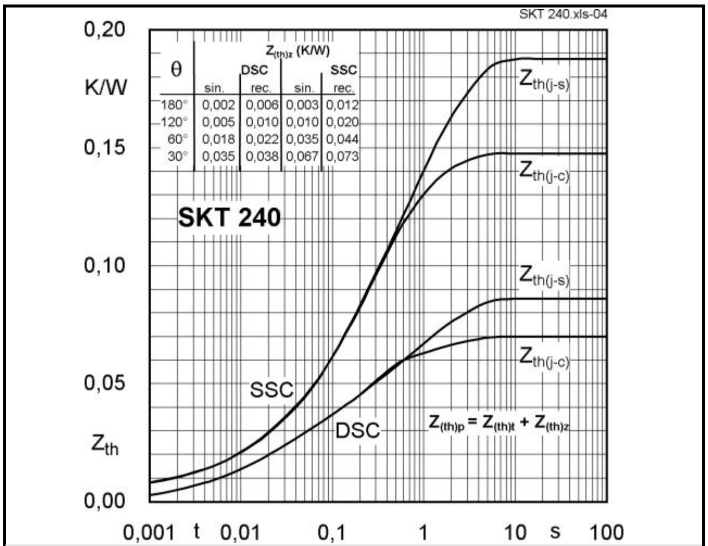


Fig. 3 Recovered charge vs. current decrease



θ	$Z_{(th)z}$ (K/W) DSC sin.	DSC rec.	SSC sin.	SSC rec.
180°	0,002	0,006	0,003	0,012
120°	0,005	0,010	0,010	0,020
60°	0,018	0,022	0,035	0,044
30°	0,035	0,038	0,067	0,073

Fig. 4 Transient thermal impedance vs. time

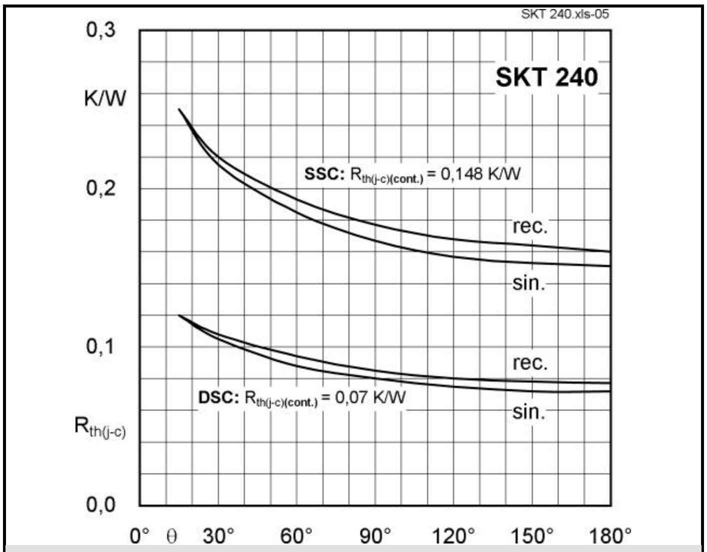


Fig. 5 Thermal resistance vs. conduction angle

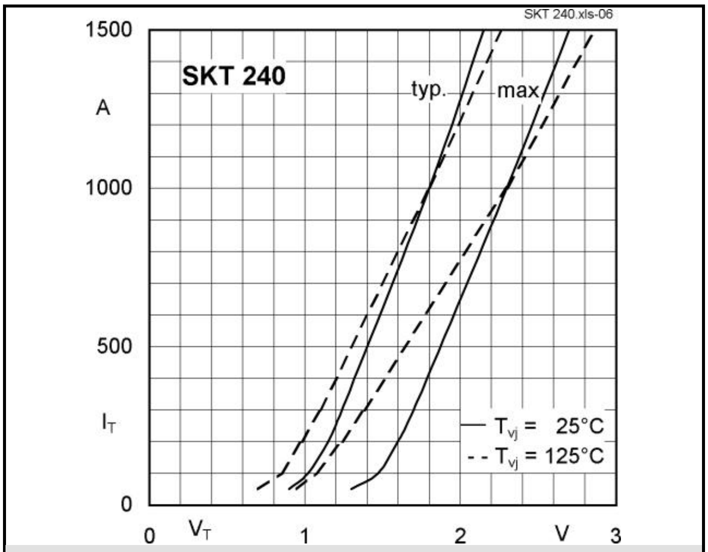


Fig. 6 On-state characteristics

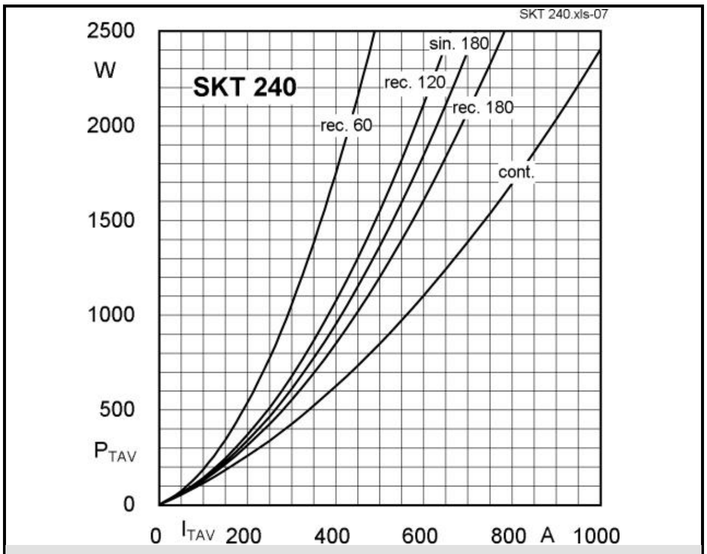


Fig. 7 Power dissipation vs. on-state current

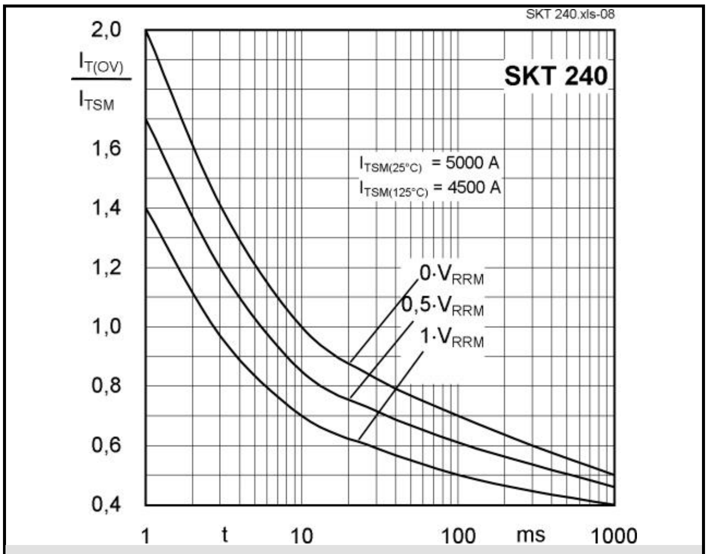


Fig. 8 Surge overload current vs. time

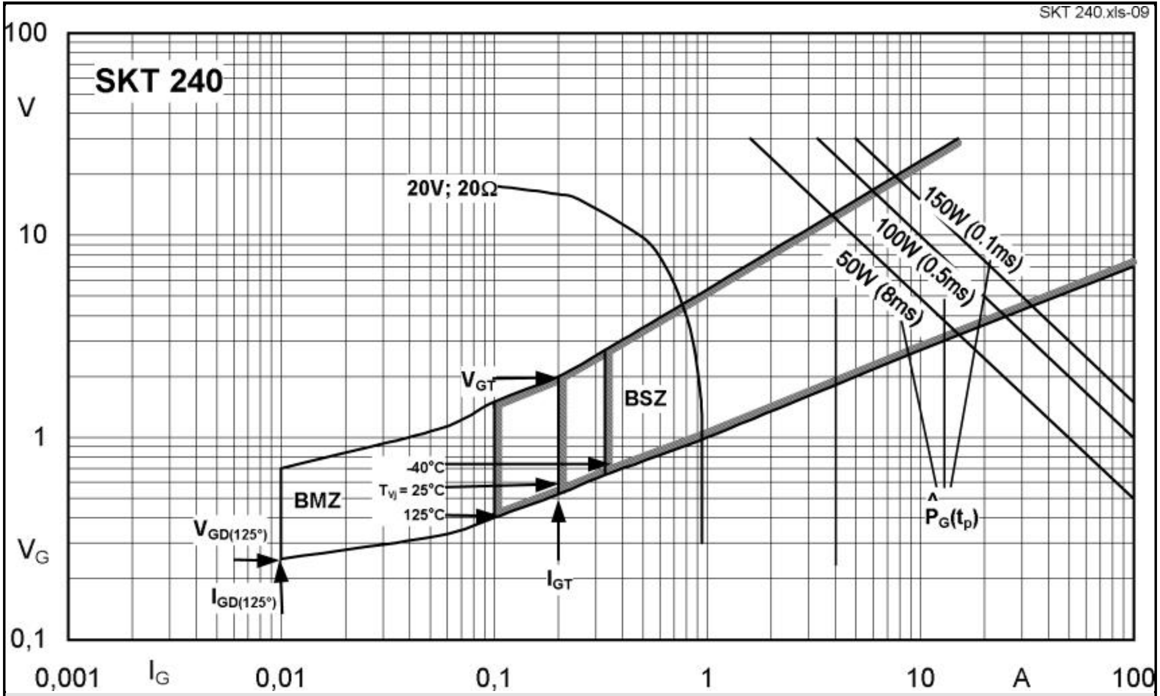
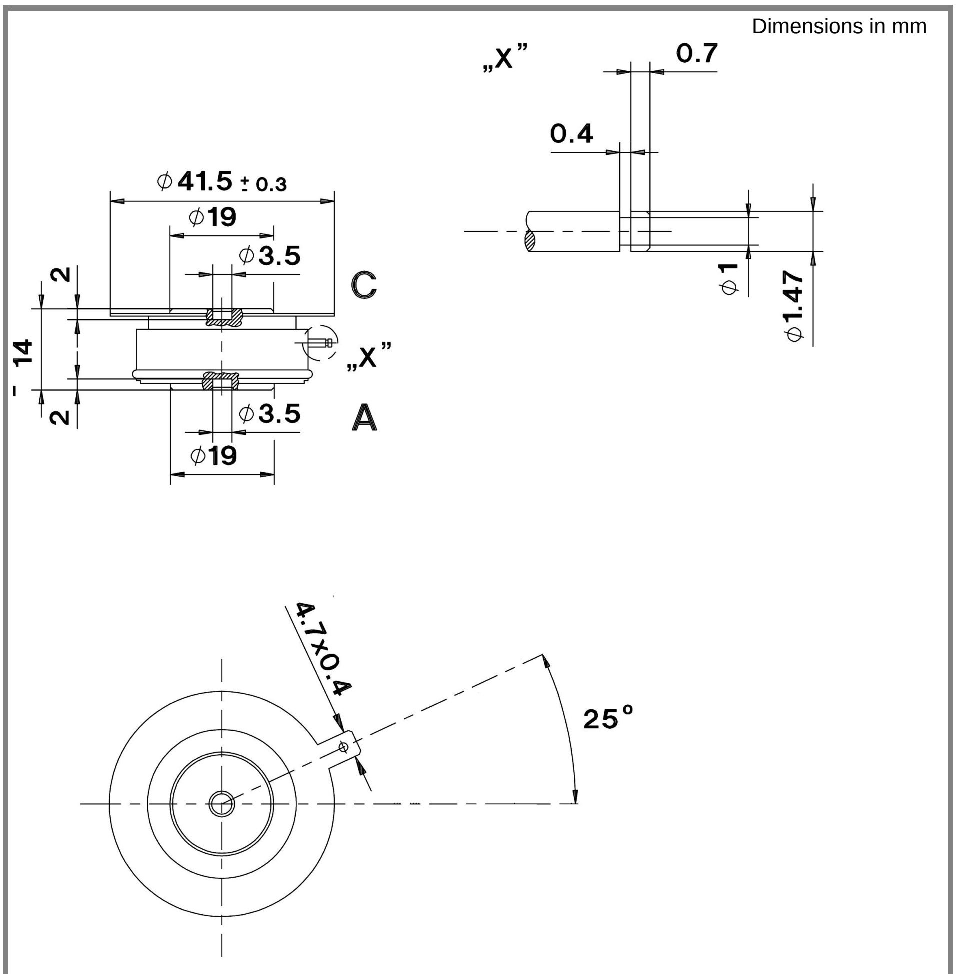
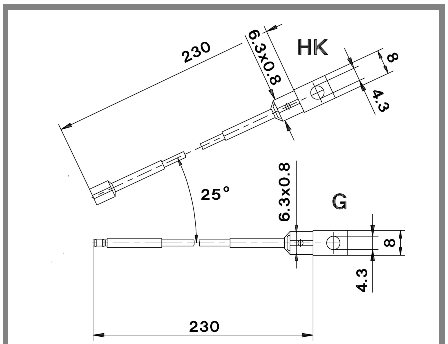


Fig. 9 Gate trigger characteristics



Case B 8 (JEDEC: TO-200AB)



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