SKT 1800

Capsule Thyristor

Line Thyristor

SKT 1800

Features

- Hermetic metal case with ceramic insulator
- Capsule package for double sided cooling
- Shallow design with single sided cooling
- Off-state and reverse voltages up to 1600 V
- Amplifying gate

Typical Applications

- DC motor control (e. g. for machine tools)
- Controlled rectifiers (e. g. for battery charging)
- AC controllers (e. g. for temperature control)
- Soft starters for AC motors
- Recommended snubber network e. g. for $V_{VRMS} \leq 400$ V: R = 33 Ω/32 W, C = 1 µF

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 4500 A (maximum value for continuous operation) I_{TAV} = 1800 A (sin. 180; DSC; T_c = 85 °C)
1300	1200	SKT 1800/12E
1500	1400	SKT 1800/14E
1700	1600	SKT 1800/16E

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 100 (85) °C;	2500 (1270)	A
I_D	2 x N4/250; T_a = 45 °C; B2 / B6	2500 / 3600	A
	2 x N4/400; T_a = 45 °C; B2 / B6	2800 /4000	A
I_{RMS}	2 x N4/250; T_a = 45 °C; W1C	2800	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	53000	A
	T_{vj} = 125 °C; 10 ms	45000	A
i^2t	T_{vj} = 25 °C; 8,3 ... 10 ms	14000000	A²s
	T_{vj} = 125 °C; 8,3 ... 10 ms	10000000	A²s
V_T	T_{vj} = 25 °C; I_T = 3000 A	max. 1,25	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 0,88	V
r_T	T_{vj} = 125 °C	max. 0,124	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 100	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. 150	A/µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 1000	V/µs
t_q	T_{vj} = 125 °C ,	200 ... 300	µs
I_H	T_{vj} = 25 °C; typ. / max.	500 / 1000	mA
I_L	T_{vj} = 25 °C; typ. / max.	2000 / 5000	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 300	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	0,015	K/W
$R_{th(j-c)}$	sin. 180; DSC / SSC	0,0155 / 0,033	K/W
$R_{th(j-c)}$	rec. 120; DSC / SSC	0,0165 / 0,0345	K/W
$R_{th(c-s)}$	DSC / SSC	0,003 / 0,006	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 130	°C
V_{isol}		-	V~
F	mounting force	27 ... 34	kN
a			m/s²
m	approx.	1000	g
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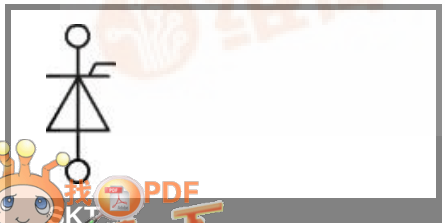


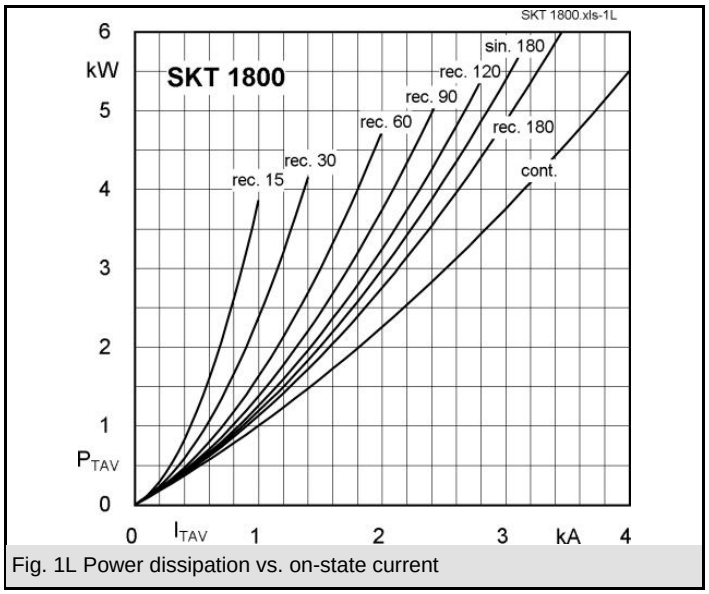


Fig. 1L Power dissipation vs. on-state current

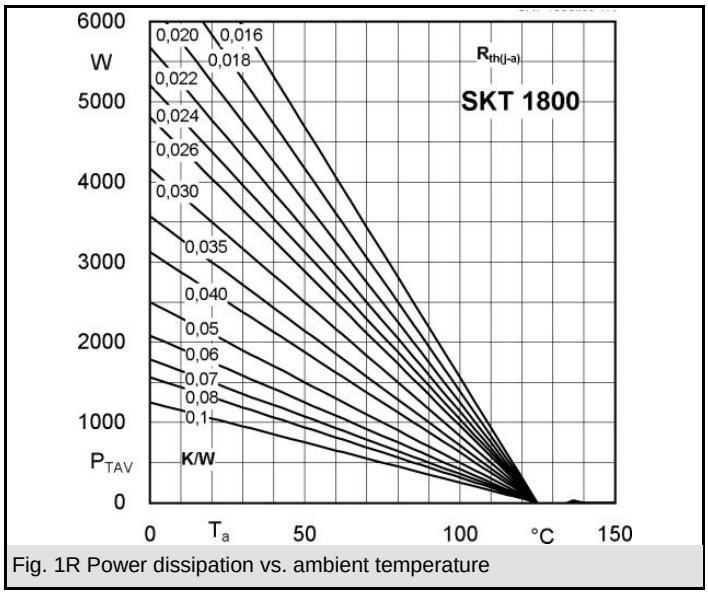


Fig. 1R Power dissipation vs. ambient temperature

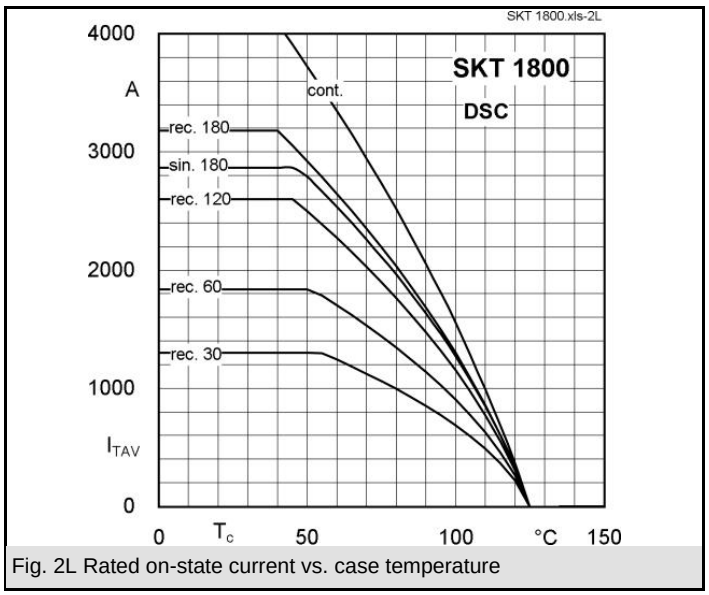


Fig. 2L Rated on-state current vs. case temperature

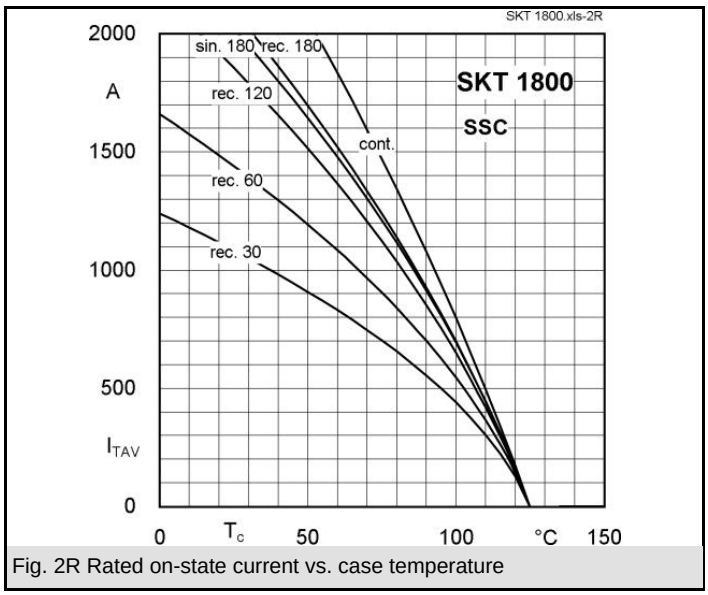


Fig. 2R Rated on-state current vs. case temperature

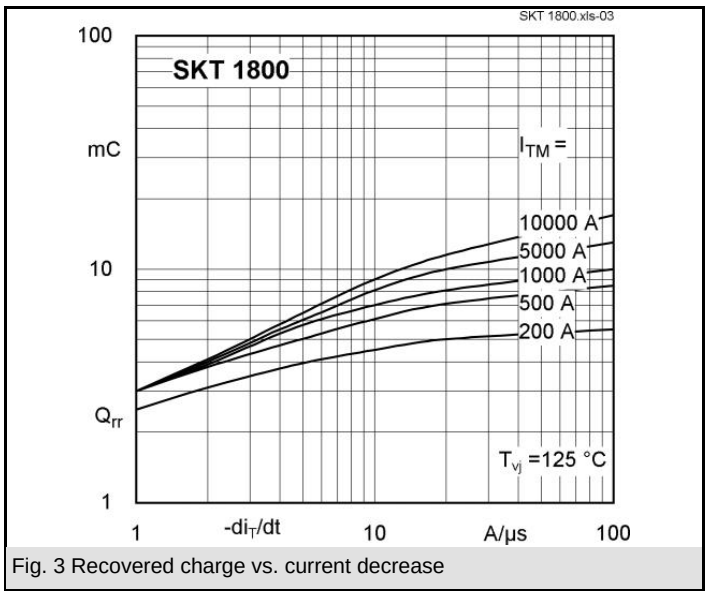


Fig. 3 Recovered charge vs. current decrease

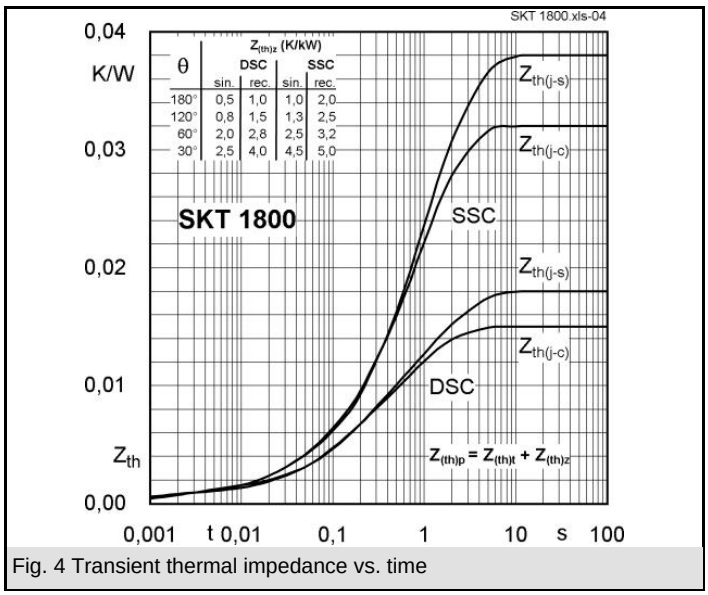


Fig. 4 Transient thermal impedance vs. time

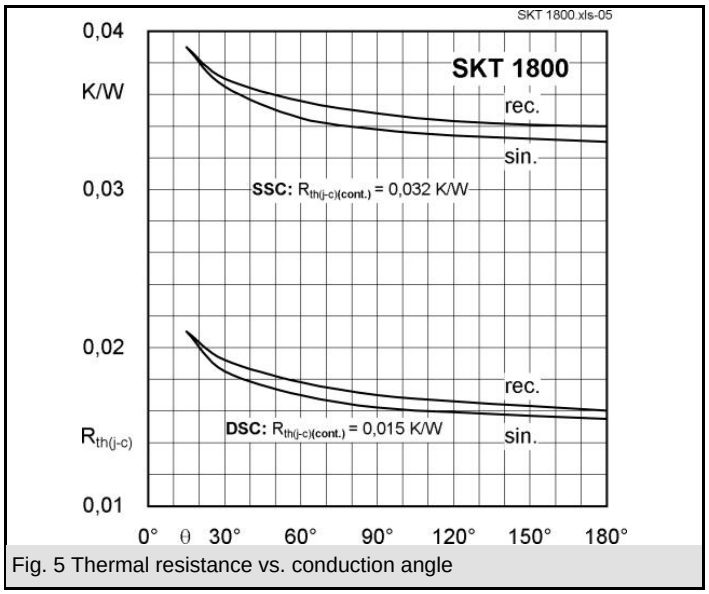


Fig. 5 Thermal resistance vs. conduction angle

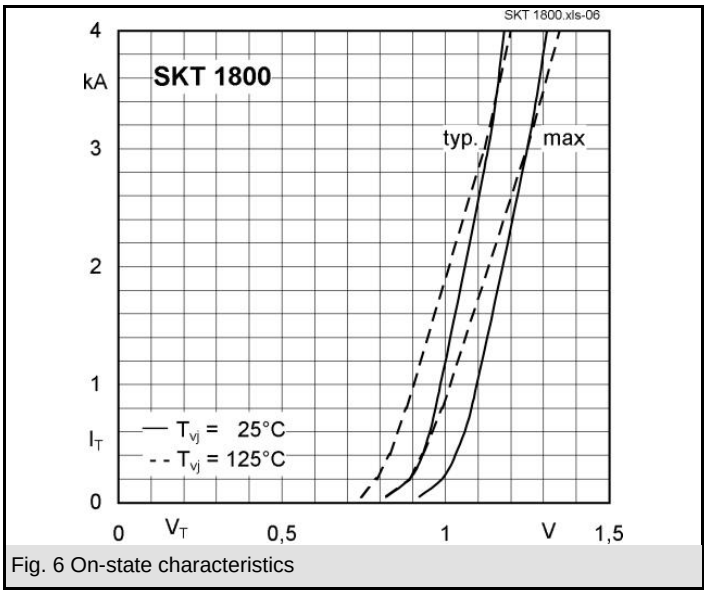


Fig. 6 On-state characteristics

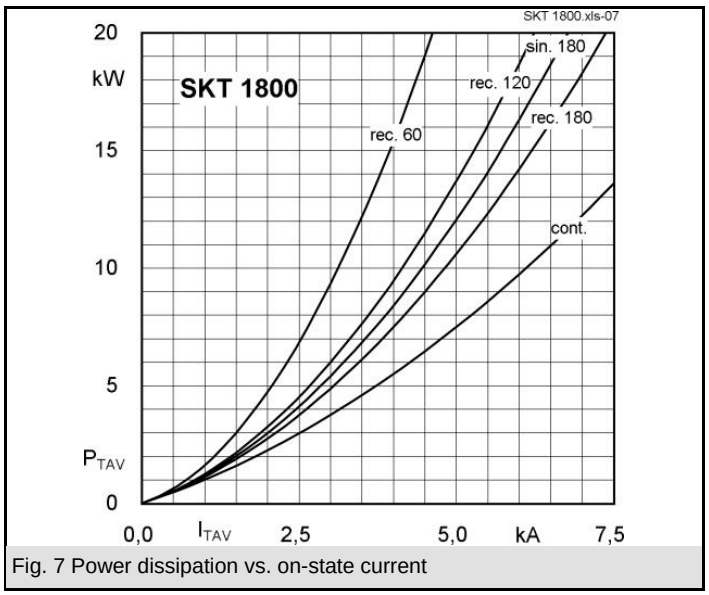


Fig. 7 Power dissipation vs. on-state current

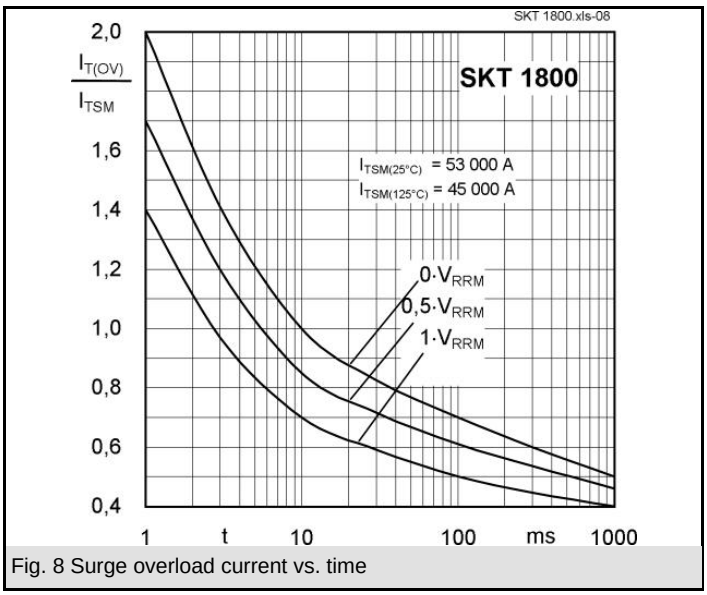


Fig. 8 Surge overload current vs. time

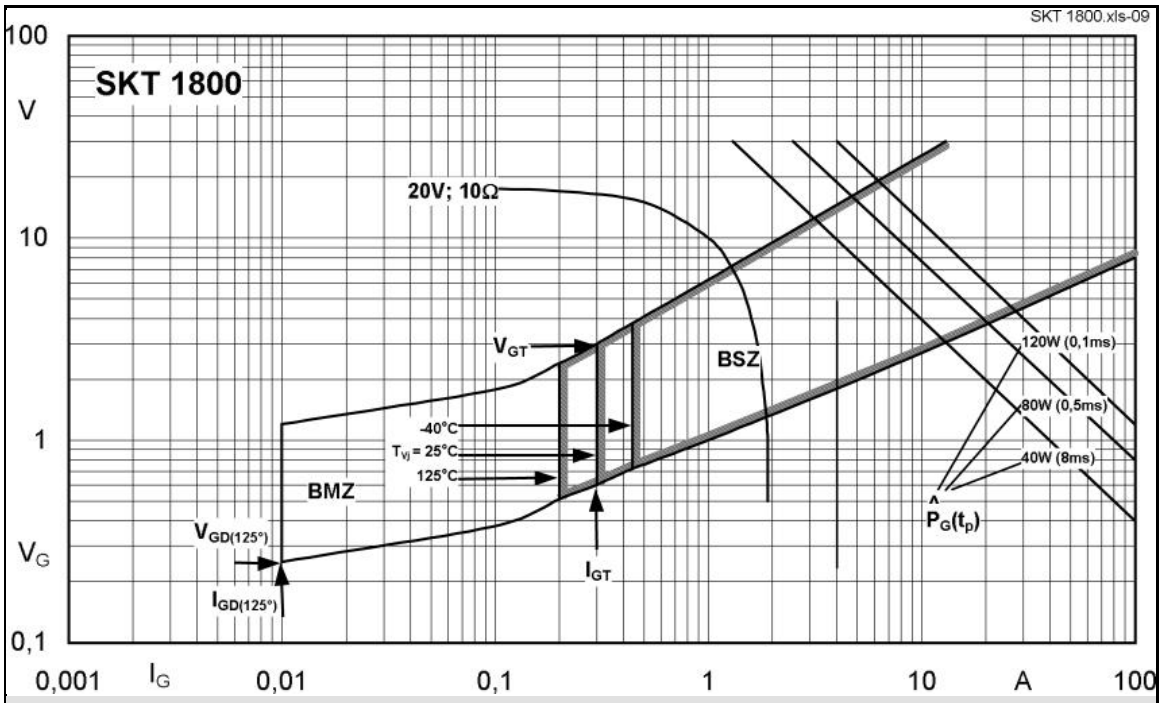
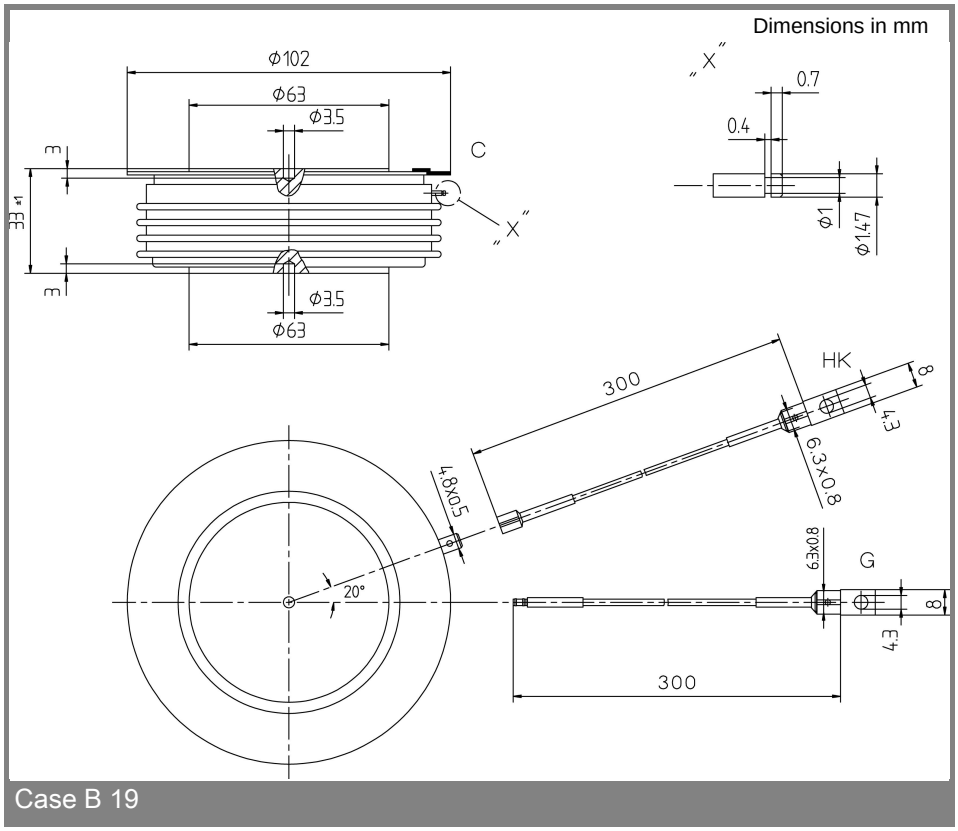


Fig. 9 Gate trigger characteristics



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