

SKT 1200/16 E



Capsule Thyristor

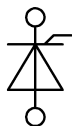
Line Thyristor SKT 1200/16 E

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 to 1800 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)
- Recommended snubber network e. g. for $V_{VRMS} \leq 400$ V: $R = 33 \Omega / 32$ W, $C = 1 \mu F$



SKT

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Chip				
$I_{T(AV)}$	sinus 180°	$T_c = 85 \text{ °C}$	1200	A
		$T_c = 100 \text{ °C}$	840	A
I_{TSM}	10 ms	$T_j = 25 \text{ °C}$	30000	A
		$T_j = 125 \text{ °C}$	25500	A
i^2t	10 ms	$T_j = 25 \text{ °C}$	4500000	A ² s
		$T_j = 125 \text{ °C}$	3251250	A ² s
V_{RSM}			1600	V
V_{RRM}			1600	V
V_{DRM}			1600	V
$(di/dt)_{cr}$	$T_j = 125 \text{ °C}$		125	A/ μ s
$(dv/dt)_{cr}$	$T_j = 125 \text{ °C}$		1000	V/ μ s
T_j			-40 ... +125	°C
Module				
T_{stg}			-40 ... +130	°C

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Chip					
V_T	$T_j = 25 \text{ °C}$, $I_T = 3600$ A			1.65	V
$V_{T(TO)}$	$T_j = 125 \text{ °C}$			0.95	V
r_T	$T_j = 125 \text{ °C}$			0.18	m Ω
$I_{DD}; I_{RD}$	$T_j = 125 \text{ °C}$, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$			160	mA
t_{gd}	$T_j = 25 \text{ °C}$, $I_G = 1$ A, $di_G/dt = 1$ A/ μ s		1		μ s
t_{gr}	$V_D = 0.67 \cdot V_{DRM}$		2		μ s
t_q	$T_j = 125 \text{ °C}$	100		250	μ s
I_H	$T_j = 25 \text{ °C}$		250	500	mA
I_L	$T_j = 25 \text{ °C}$, $R_G = 33 \Omega$		500	2000	mA
V_{GT}	$T_j = 25 \text{ °C}$, d.c.	3			V
I_{GT}	$T_j = 25 \text{ °C}$, d.c.	250			mA
V_{GD}	$T_j = 125 \text{ °C}$, d.c.			0.25	V
I_{GD}	$T_j = 125 \text{ °C}$, d.c.			10	mA
$R_{th(j-c)}$	continuous DC	SSC			K/W
		DSC		0.021	K/W
$R_{th(j-c)}$	sin. 180°	SSC		0.054	K/W
		DSC		0.0225	K/W
$R_{th(j-c)}$	rec. 120°	SSC		0.06	K/W
		DSC		0.027	K/W
Module					
$R_{th(c-s)}$	SSC		0.01		K/W
	DSC		0.005		K/W
F		22		25	KN
a					m/s ²
w			480		g

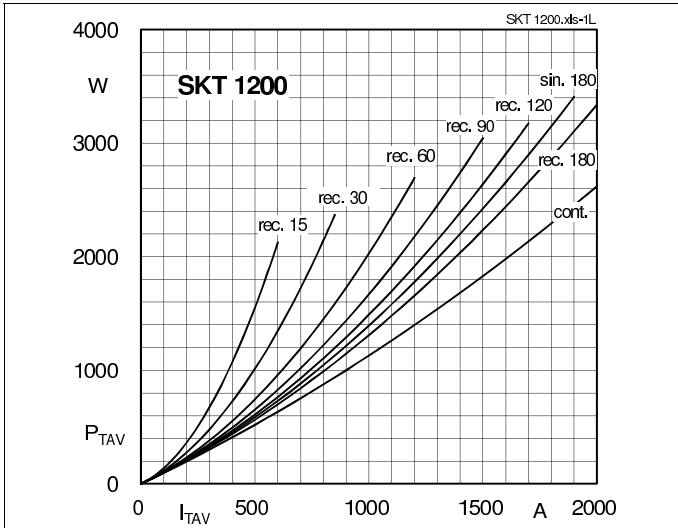


Fig. 1L: Power dissipation vs. on-state current

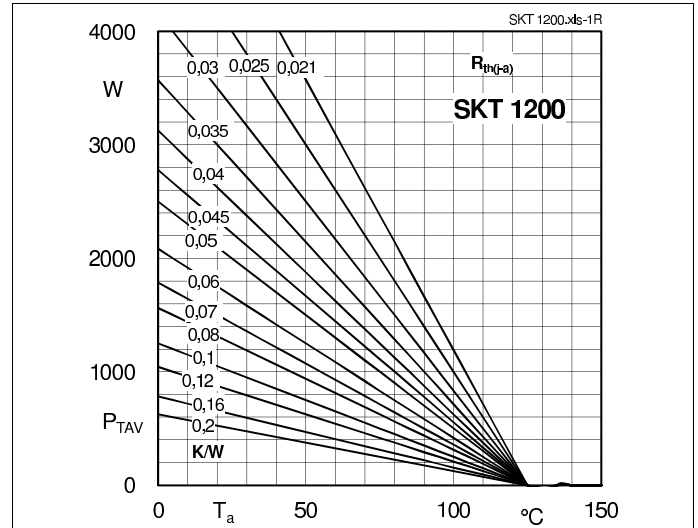


Fig. 1R: Power dissipation vs. ambient temperature

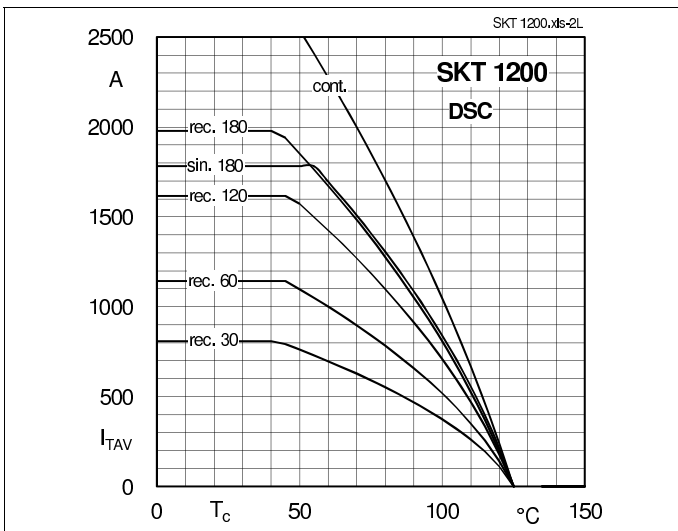


Fig. 2L: Rated on-state current vs. case temperature

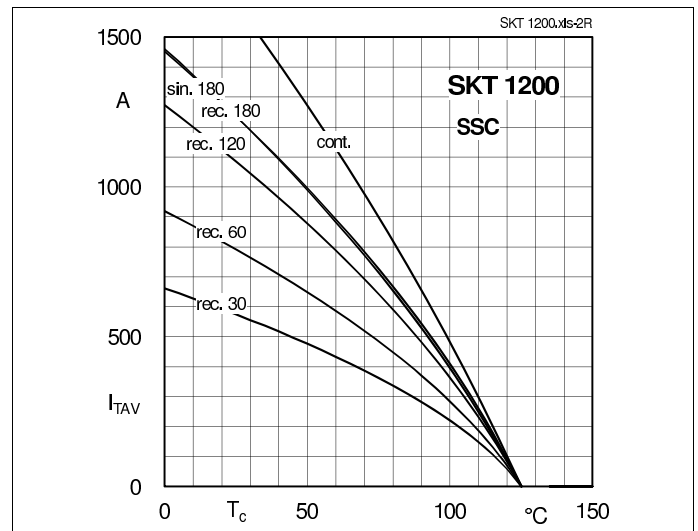


Fig. 2R: Rated on-state current vs. case temperature

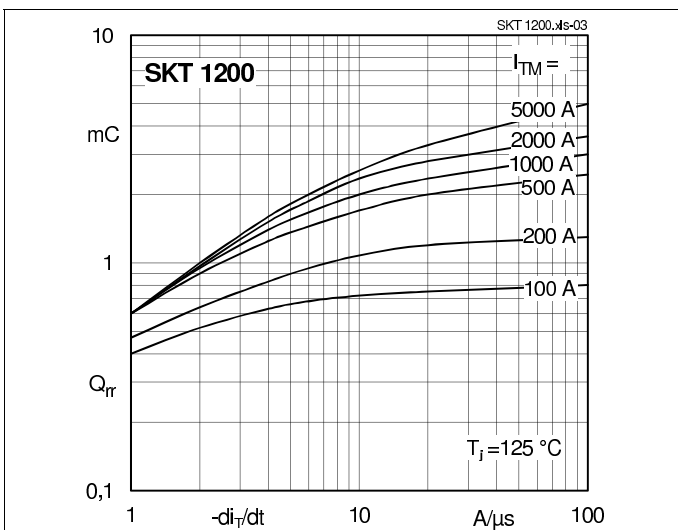


Fig. 3: Recovered charge vs. current decrease

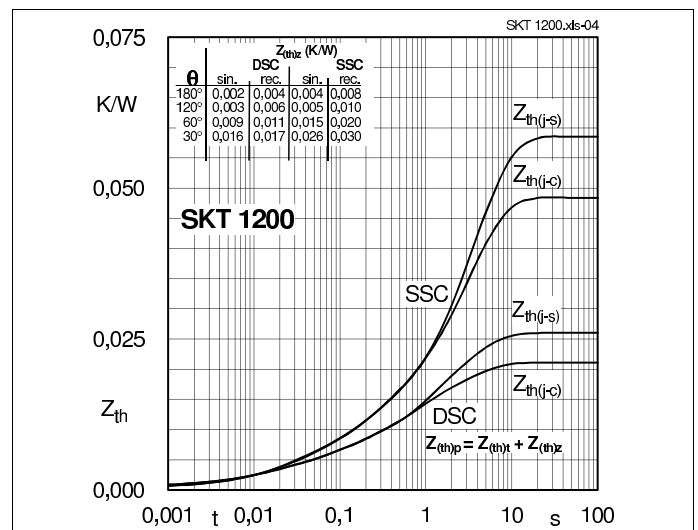


Fig. 4: Transient thermal impedance vs. time

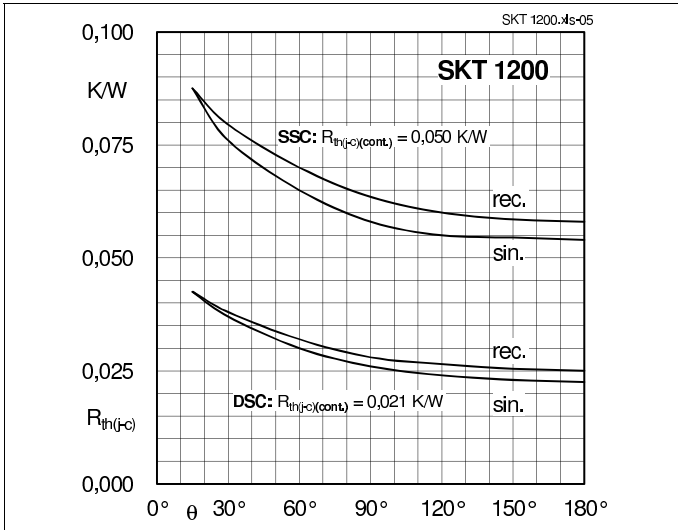


Fig. 5: Thermal resistance vs. conduction angle

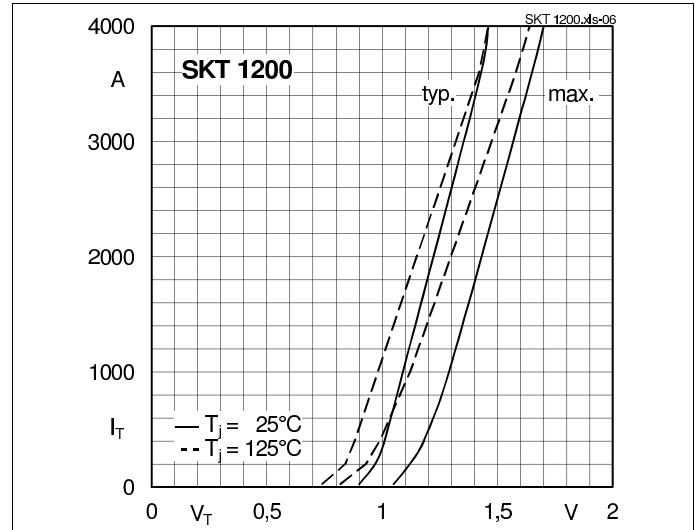


Fig. 6: On-state characteristics

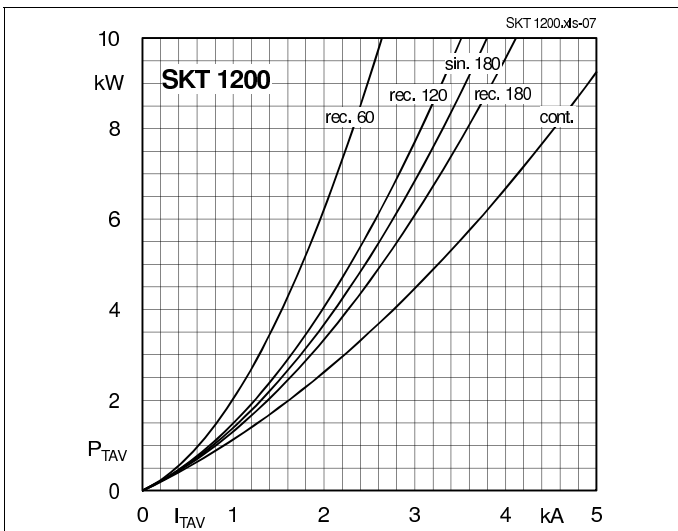


Fig. 7: Power dissipation vs. on-state current

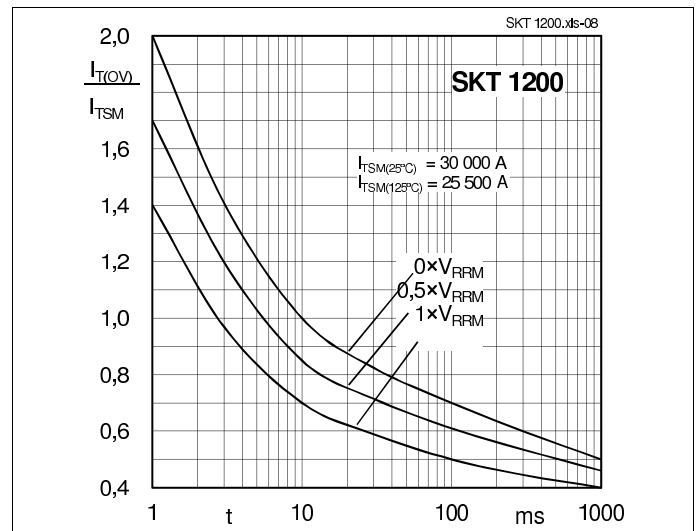


Fig. 8: Surge overload current vs. time

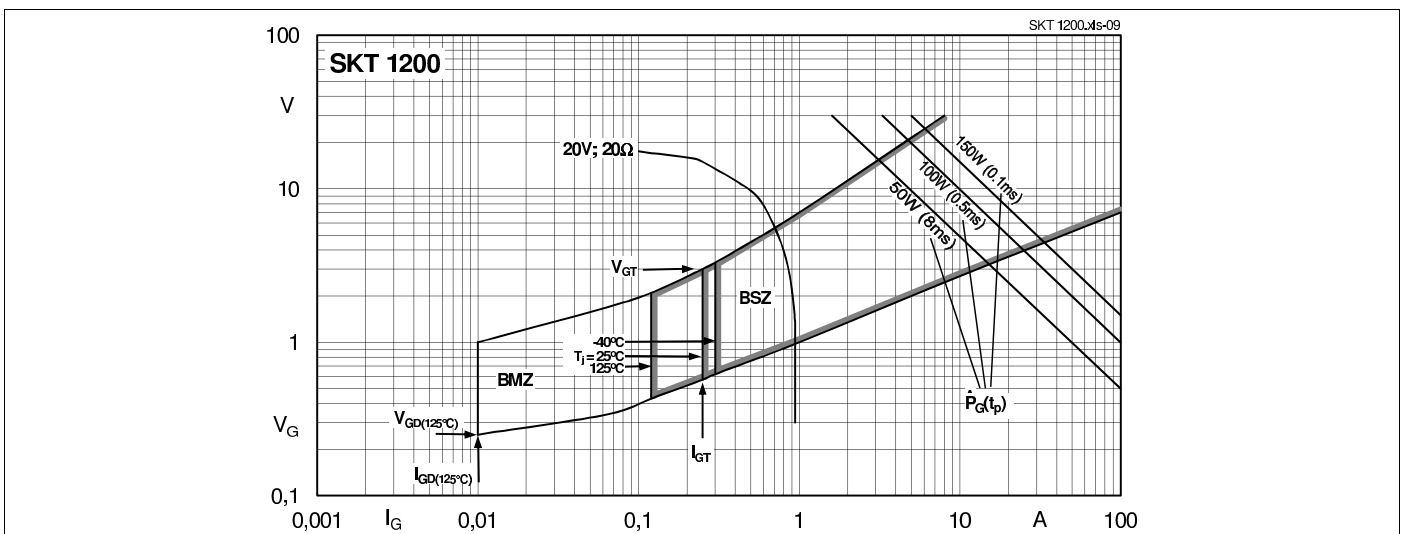


Fig. 9: Gate trigger characteristics

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