

# SKT 813



Capsule Thyristor

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 1600$ A (maximum value for continuous operation) $I_{TAV} = 810$ A (sin. 180 DSC; $T_c = 88^\circ\text{C}$ )
500	400	SKT 813/04 D
900	800	SKT 813/08 D
1300	1200	SKT 813/12 E
1700	1600	SKT 813/16 E
1900	1800	SKT 813/18 E

## Thyristors

### SKT 813

#### Features

- Hermetic metal case with epoxy insulator
- Capsule package for double sided cooling
- Off-state and reverse voltages up to 1800 V
- Amplifying gate

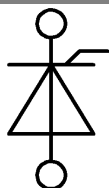
#### Typical Applications \*

- DC motor control
- Controlled and half-controlled rectifiers
- AC controllers
- Recommended snubber network

e.g. for  $V_{rms} \leq 400$  V:  
RC: 33  $\Omega$ /32 W, C = 1  $\mu$ F

1) With thermal compound

Symbol	Condition	Values	Units
$I_{TAV}$	sin. 180 ; $T_c = 100$ (85) $^\circ\text{C}$	605 (855)	A
$I_D$	2 x P8/180; $T_a = 45$ $^\circ\text{C}$ ; B2/B6 2 x P8/180F; $T_a = 35$ $^\circ\text{C}$ ; B2/B6	435 / 635 965 / 1370	A
$I_{RMS}$	2 x P8/180; $T_a = 45$ $^\circ\text{C}$ ; W1C	485	A
$I_{TSM}$	$T_{vj} = 25^\circ\text{C}$ ; 10 ms $T_{vj} = 125^\circ\text{C}$ ; 10 ms	15000 13000	A
$i^2t$	$T_{vj} = 25^\circ\text{C}$ ; 8,3...10 ms $T_{vj} = 125^\circ\text{C}$ ; 8,3...10 ms	1125000 845000	$\text{A}^2\text{s}$ $\text{A}^2\text{s}$
$V_T$	$T_{vj} = 25^\circ\text{C}$ , $I_T = 2400$ A	max. 1,65	V
$V_{T(TO)}$	$T_{vj} = 125^\circ\text{C}$	max. 0,92	V
$r_T$	$T_{vj} = 125^\circ\text{C}$	max. 0,30	$\text{m}\Omega$
$I_{DD}, I_{RD}$	$T_{vj} = 125^\circ\text{C}$ ; $V_{RD} = V_{RRM}$ ; $V_{RD} = V_{RRM}$	80	mA
$t_{gd}$	$T_{vj} = 25^\circ\text{C}$ ; $i_G = 1$ A; $di_G/dt = 1$ A/ $\mu$ s	1	$\mu$ s
$t_{gr}$	$V_D = 0,67 * V_{DRM}$	2	$\mu$ s
$(d_i/d_t)_{cr}$	$T_{vj} = 125^\circ\text{C}$	min. 125	A/ $\mu$ s
$(d_v/d_t)_{cr}$	$T_{vj} = 125^\circ\text{C}$	min. 1000	V/ $\mu$ s
$t_q$	$T_{vj} = 125^\circ\text{C}$	100 ... 200	$\mu$ s
$I_H$	$T_{vj} = 25^\circ\text{C}$ ; typ. / max	150 / 500	mA
$I_L$	$T_{vj} = 25^\circ\text{C}$ ; $R_G = 33$ $\Omega$ ; typ. / max	500 / 2000	mA
$V_{GT}$	$T_{vj} = 25^\circ\text{C}$ ; d.c.	min. 3	V
$I_{GT}$	$T_{vj} = 25^\circ\text{C}$ ; d.c.	min. 200	mA
$V_{GD}$	$T_{vj} = 125^\circ\text{C}$ ; d.c.	max. 0,25	V
$I_{GD}$	$T_{vj} = 125^\circ\text{C}$ ; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; DSC	0,029	K/W
$R_{th(j-c)}$	sin. 180; DSC / SSC	0,030 / 0,060	K/W
$R_{th(j-c)}$	rec. 120; DSC / SSC	0,032 / 0,064	K/W
$R_{th(c-s)}$ <sup>1)</sup>	DSC / SSC	0,0065 / 0,013	K/W
$T_{vj}$		-40...+125	$^\circ\text{C}$
$T_{stg}$		-55...+125	$^\circ\text{C}$
F	Mounting force ( SI units )	10 ... 13	kN
m	approx.	150	g
Case		B21	



SKT

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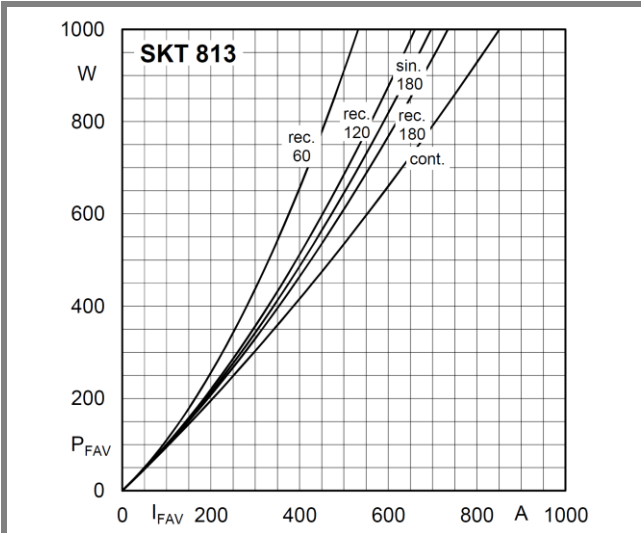


Fig. 1L Power dissipation vs. forward current

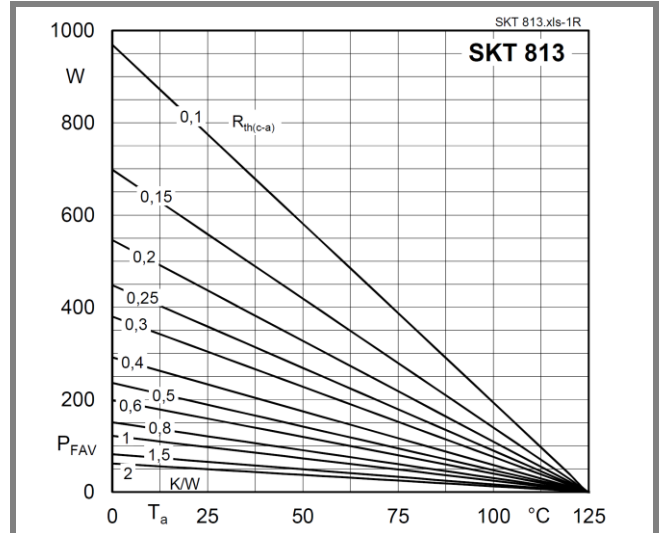


Fig. 1R Power dissipation vs. ambient temperature

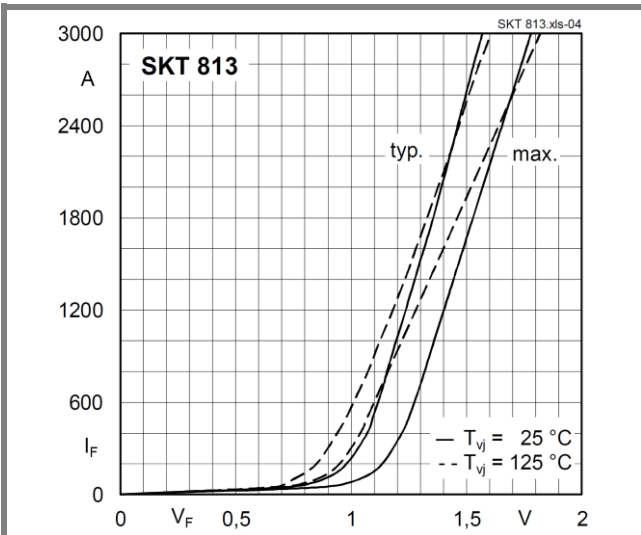


Fig. 4 Forward characteristics

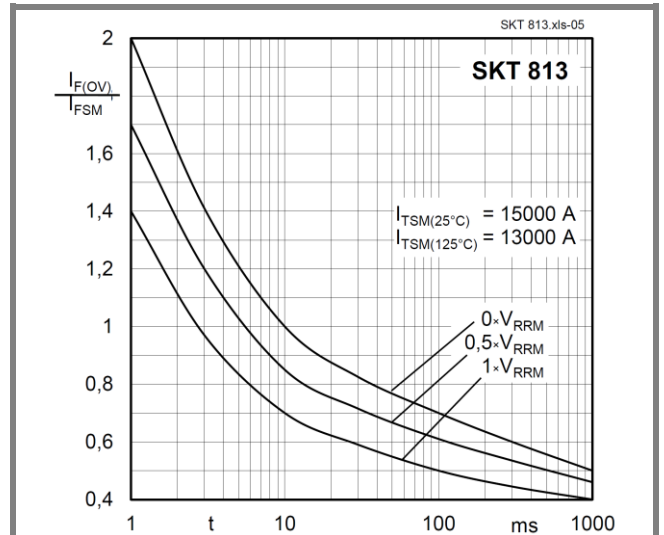


Fig. 5 Surge overload current vs. time

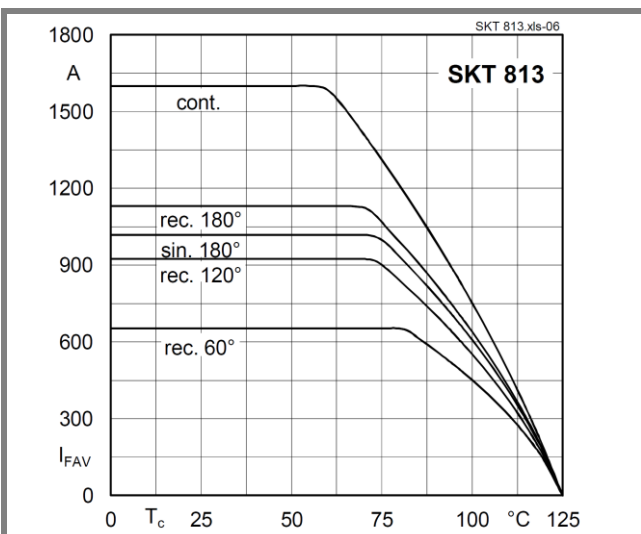


Fig. 6 Forward current vs. case temperature

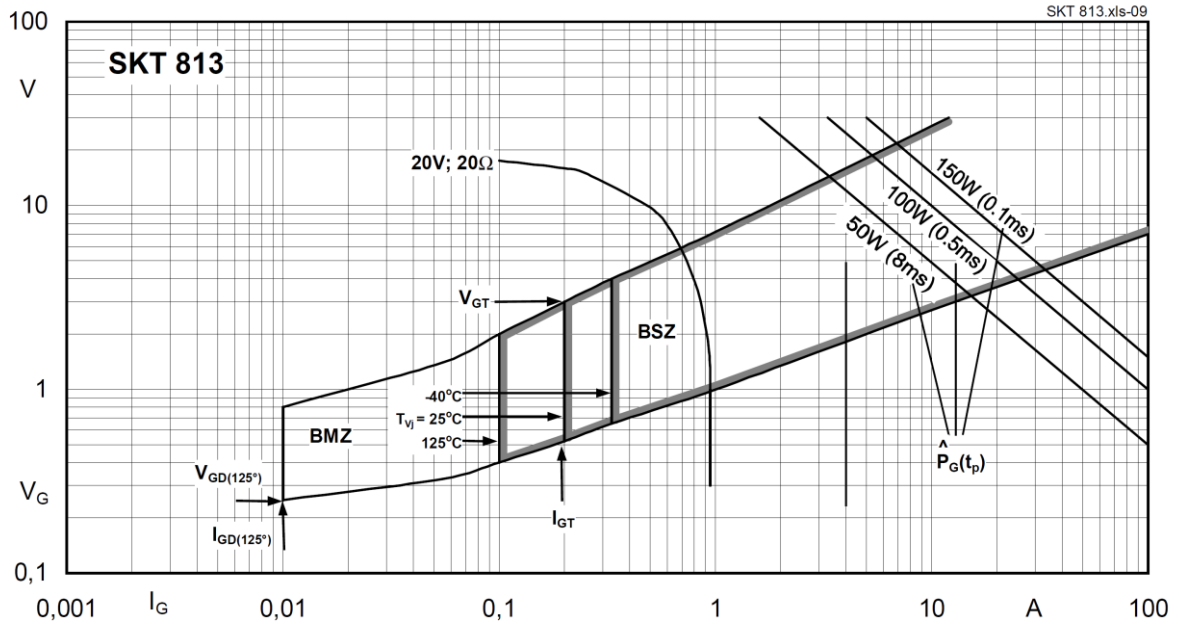
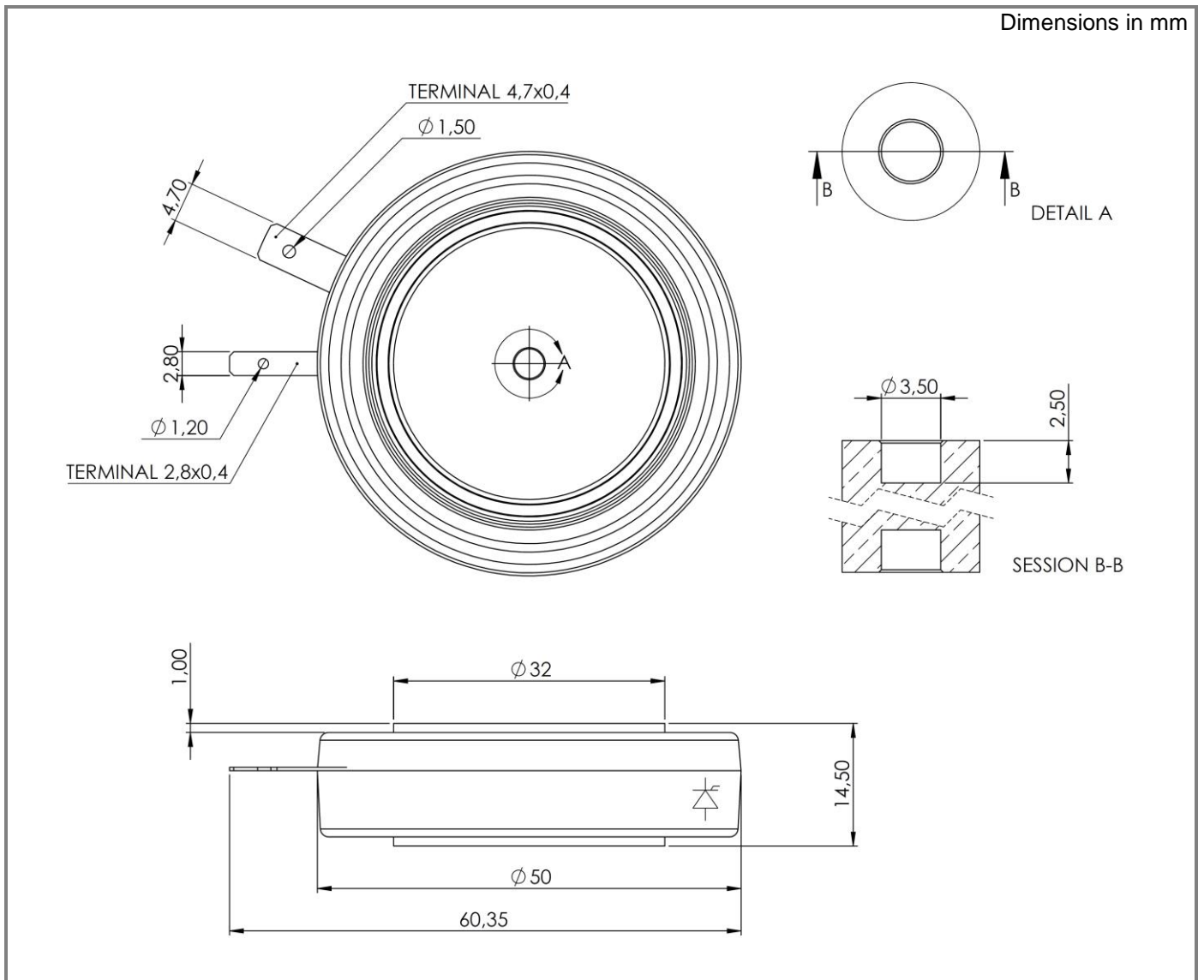


Fig. 9 Gate trigger characteristics



## Case B21

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