

# SKET 801/18 E



SEMIPACK® 6

## Thyristor Modules

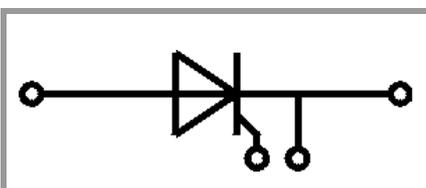
### SKET 801/18 E

#### Features

- Precious metal pressure contacts for high reliability
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

#### Typical Applications\*

- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Softstart application



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Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
<b>Chip</b>				
$I_{T(AV)}$	sinus 180°	$T_c = 85\text{ °C}$	819	A
		$T_c = 100\text{ °C}$	564	A
$I_{TRMS}$	continuous operation		1500	A
$I_{TSM}$	10 ms	$T_j = 25\text{ °C}$	35000	A
		$T_j = 125\text{ °C}$	30000	A
$i^2t$	10 ms	$T_j = 25\text{ °C}$	6125000	A <sup>2</sup> s
		$T_j = 125\text{ °C}$	4500000	A <sup>2</sup> s
$V_{RSM}$			1900	V
$V_{RRM}$			1800	V
$V_{DRM}$			1800	V
$(di/dt)_{cr}$			200	A/μs
$(dv/dt)_{cr}$			1000	V/μs
$T_j$			-40 ... 125	°C
<b>Module</b>				
$T_{stg}$			-40 ... 130	°C
$V_{isol}$	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
<b>Chip</b>						
$V_T$	$T_j = 125\text{ °C}$ , $I_T = 3000\text{ A}$				1.51	V
$V_{T(TO)}$	$T_j = 125\text{ °C}$				0.82	V
$r_T$	$T_j = 125\text{ °C}$				0.17	mΩ
$I_{DD}; I_{RD}$	$T_j = 125\text{ °C}$ , $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$				150	mA
$t_{gd}$	$T_j = 25\text{ °C}$ , $I_G = 1\text{ A}$ , $di_G/dt = 1\text{ A/μs}$				4	μs
$t_q$				240		μs
$I_H$	$T_j = 25\text{ °C}$				500	mA
$I_L$	$T_j = 25\text{ °C}$ , $R_G = 33\text{ Ω}$				2500	mA
$V_{GT}$	$T_j = 25\text{ °C}$ , d.c.		2			V
$I_{GT}$	$T_j = 25\text{ °C}$ , d.c.		250			mA
$V_{GD}$	$T_j = 125\text{ °C}$ , d.c.				0.2	V
$I_{GD}$	$T_j = 125\text{ °C}$ , d.c.				10	mA
$R_{th(j-c)}$	cont.	per chip			0.0405	K/W
		per module			0.0405	K/W
$R_{th(j-c)}$	sin. 180°	per chip			0.042	K/W
		per module			0.042	K/W
$R_{th(j-c)}$	rec. 120°	per chip			0.043	K/W
		per module			0.043	K/W
<b>Module</b>						
$R_{th(c-s)}$	chip				0.015	K/W
	module				0.015	K/W
$M_s$	to heatsink M6		5.1		6.9	Nm
$M_t$	to terminal M12		16.2		19.8	Nm
a					5 * 9,81	m/s <sup>2</sup>
w					1950	g

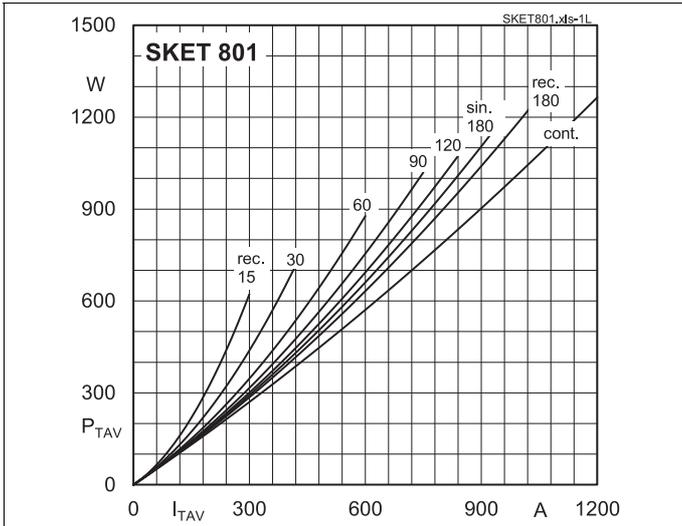


Fig. 1L: Power dissipation per thyristor vs. on-state current

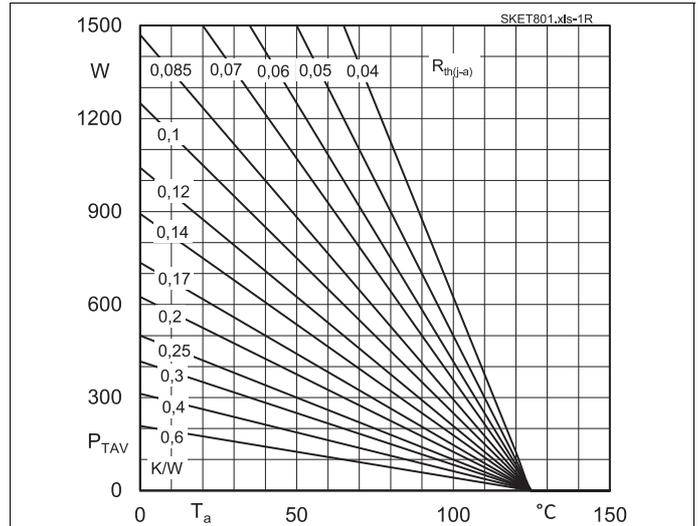


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

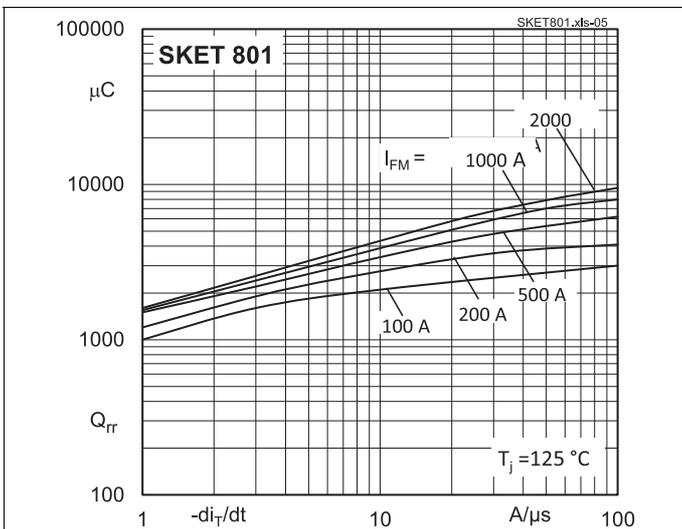


Fig. 5: Recovered charge vs. current decrease

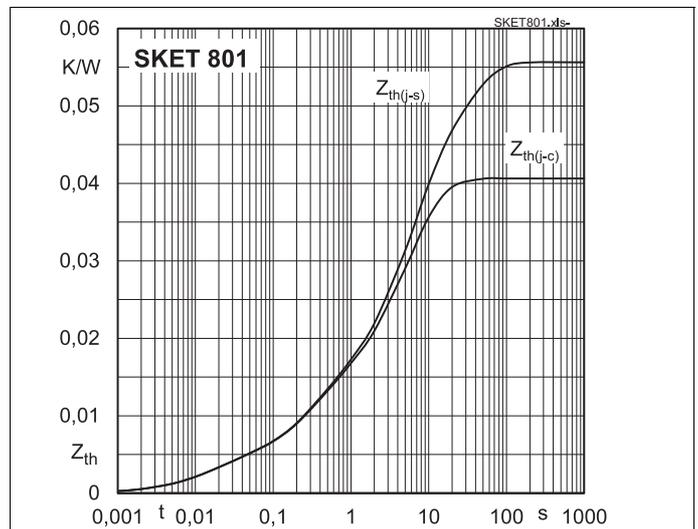


Fig. 6: Transient thermal impedance vs. time

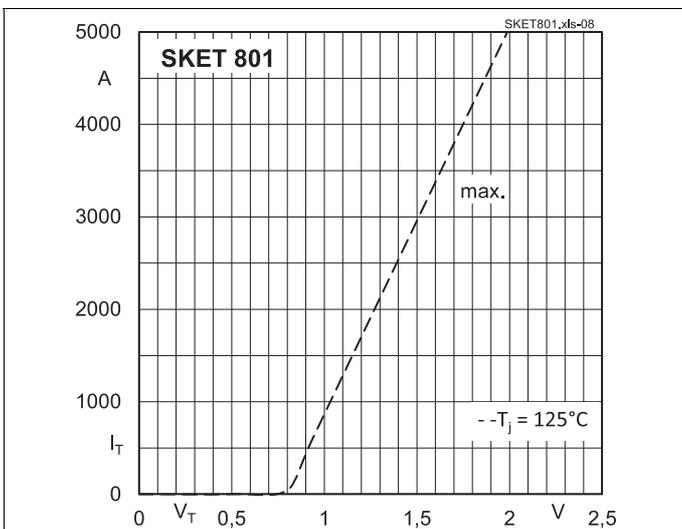


Fig. 7: On-state characteristics

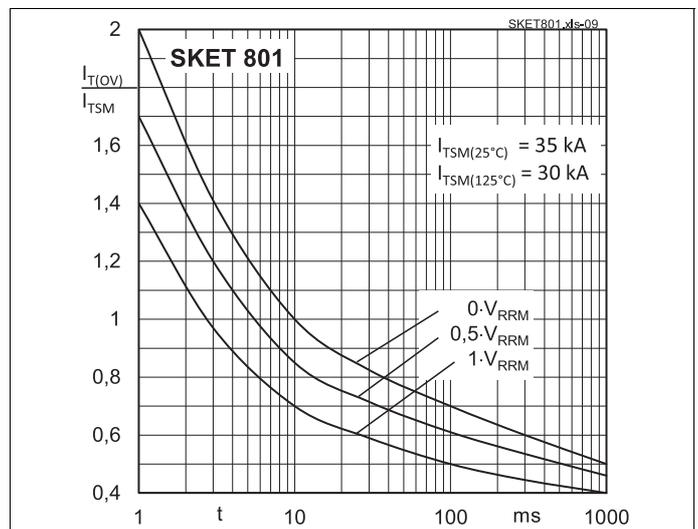


Fig. 8: Surge overload current vs. time

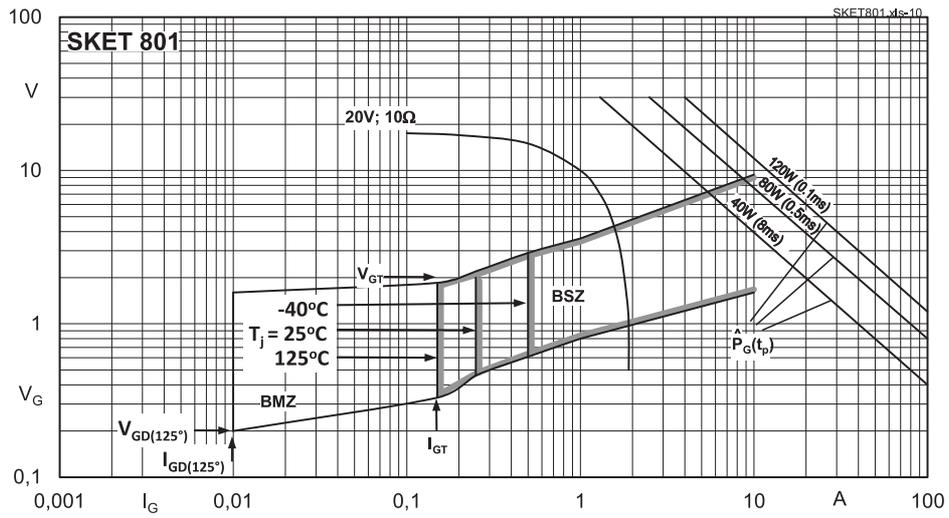
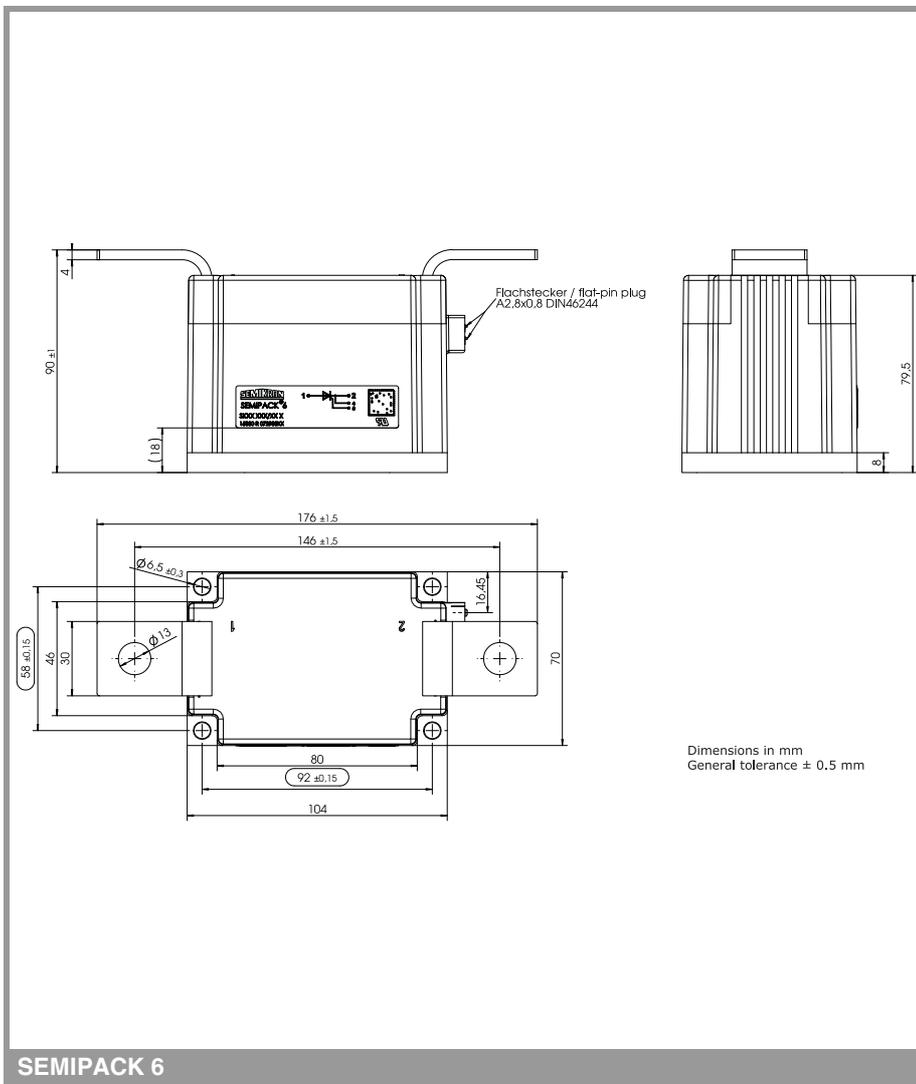
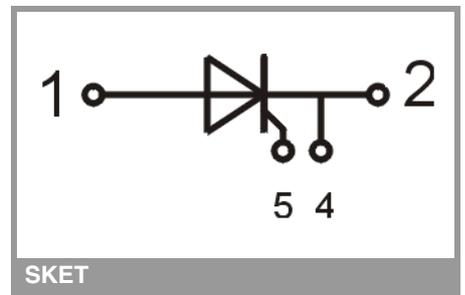


Fig. 9: Gate trigger characteristics



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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

**\*IMPORTANT INFORMATION AND WARNINGS**

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