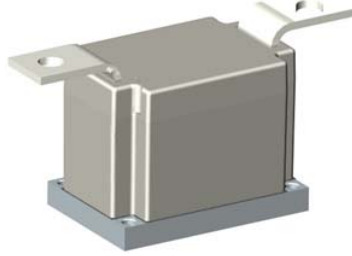


# SKET 800/18G H4



SEMIPACK® 6

## Thyristor Modules

### SKET 800/18G H4

#### 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



SKET

#### Absolute Maximum Ratings

Symbol	Conditions	Values	Unit	
<b>Chip</b>				
$I_{T(AV)}$	sinus 180°	$T_c = 85\text{ °C}$	808	A
		$T_c = 100\text{ °C}$	597	A
$I_{TSM}$	10 ms	$T_j = 25\text{ °C}$	37000	A
		$T_j = 130\text{ °C}$	32000	A
$i^2t$	10 ms	$T_j = 25\text{ °C}$	6845000	A <sup>2</sup> s
		$T_j = 130\text{ °C}$	5120000	A <sup>2</sup> s
$V_{RSM}$		1900	V	
$V_{RRM}$		1800	V	
$V_{DRM}$		1800	V	
$(di/dt)_{cr}$	$T_j = 130\text{ °C}$	200	A/μs	
$(dv/dt)_{cr}$	$T_j = 130\text{ °C}$	2000	V/μs	
$T_j$		-40 ... 130	°C	
<b>Module</b>				
$T_{stg}$		-40 ... 125	°C	
$V_{isol}$	a.c.; 50 Hz; r.m.s.	1 min	4000	V
		1 s	4800	V

#### Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
<b>Chip</b>					
$V_T$	$T_j = 25\text{ °C}$ , $I_T = 3000\text{ A}$		1.45	1.55	V
$V_{T(TO)}$	$T_j = 130\text{ °C}$		0.78	0.83	V
$r_T$	$T_j = 130\text{ °C}$		0.22	0.25	mΩ
$I_{DD}; I_{RD}$	$T_j = 130\text{ °C}$ , $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$			150	mA
$t_{gd}$	$T_j = 25\text{ °C}$ , $I_G = 1\text{ A}$ , $di_G/dt = 1\text{ A}/\mu\text{s}$		1		μs
$t_{gr}$	$V_D = 0.67 * V_{DRM}$		2		μs
$t_q$	$T_j = 130\text{ °C}$		200		μs
$I_H$	$T_j = 25\text{ °C}$		1000	2000	mA
$I_L$	$T_j = 25\text{ °C}$ , $R_G = 33\text{ }\Omega$		1500	2500	mA
$V_{GT}$	$T_j = 25\text{ °C}$ , d.c.	3			V
$I_{GT}$	$T_j = 25\text{ °C}$ , d.c.	300			mA
$V_{GD}$	$T_j = 130\text{ °C}$ , d.c.			0.25	V
$I_{GD}$	$T_j = 130\text{ °C}$ , d.c.			10	mA
$R_{th(j-c)}$	continuous DC	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			0.01	K/W
	module			0.01	K/W
$M_s$	to heatsink M6	5.1		6.9	Nm
$M_t$	to terminal M12	15.3		20.7	Nm
$a$				5 * 9,81	m/s <sup>2</sup>
$w$			2150		g

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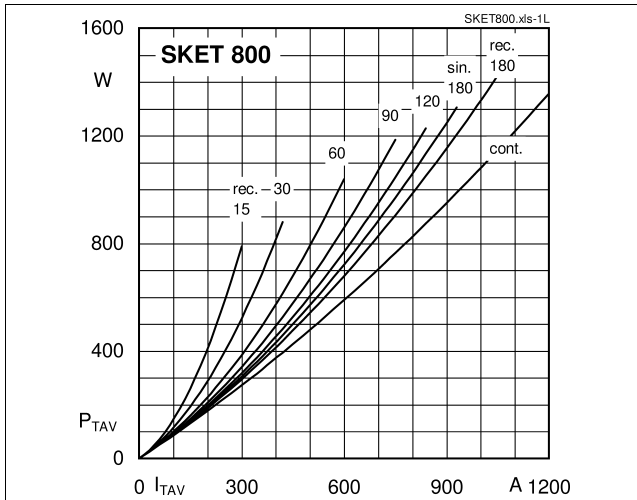


Fig. 1L: Power dissipation per thyristor vs. on-state current

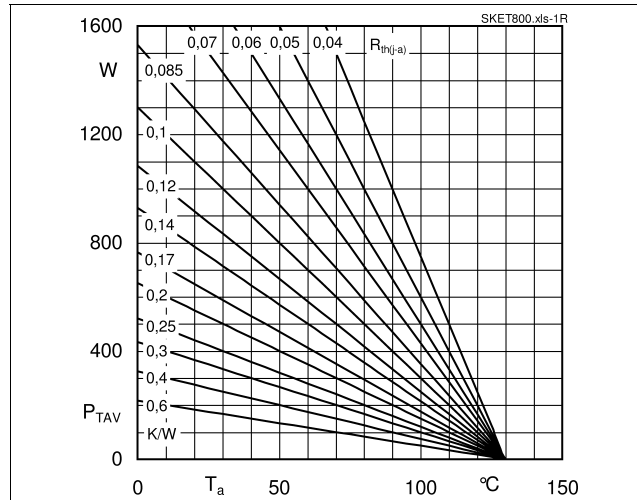


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

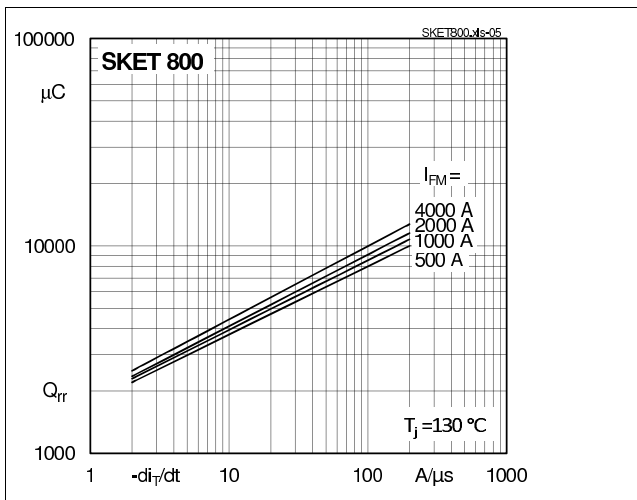


Fig. 5: Recovered charge vs. current decrease

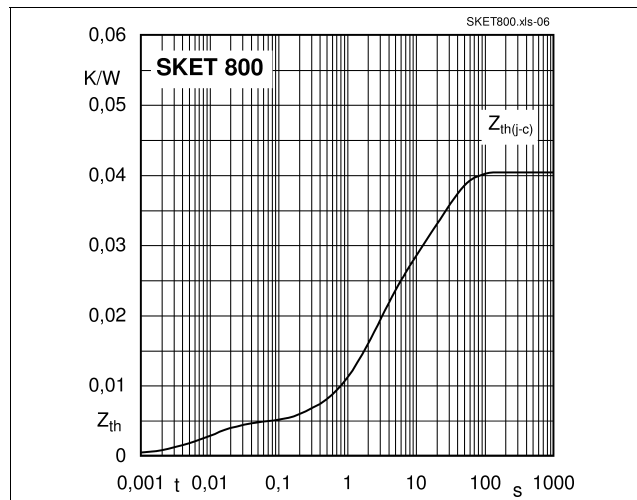


Fig. 6: Transient thermal impedance vs. time

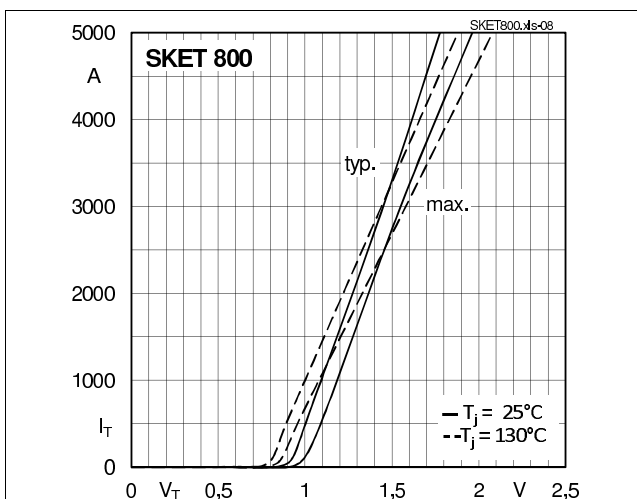


Fig. 7: On-state characteristics

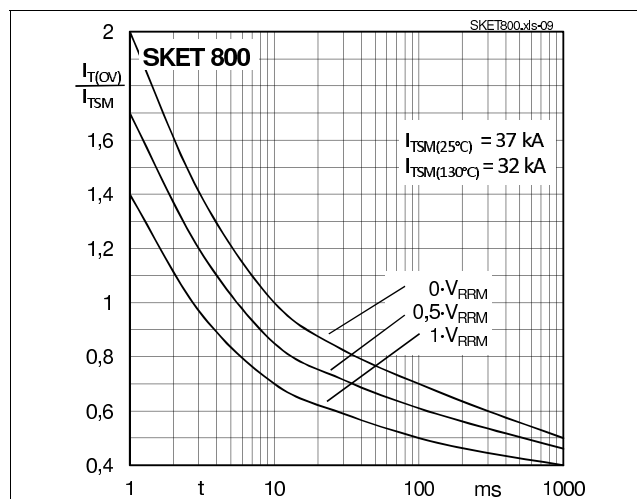


Fig. 8: Surge overload current vs. time

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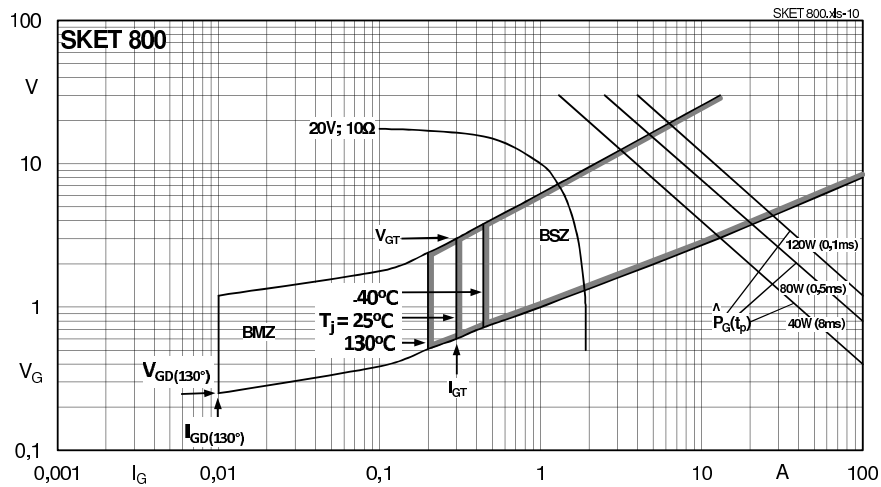
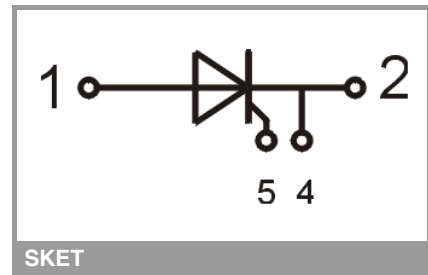
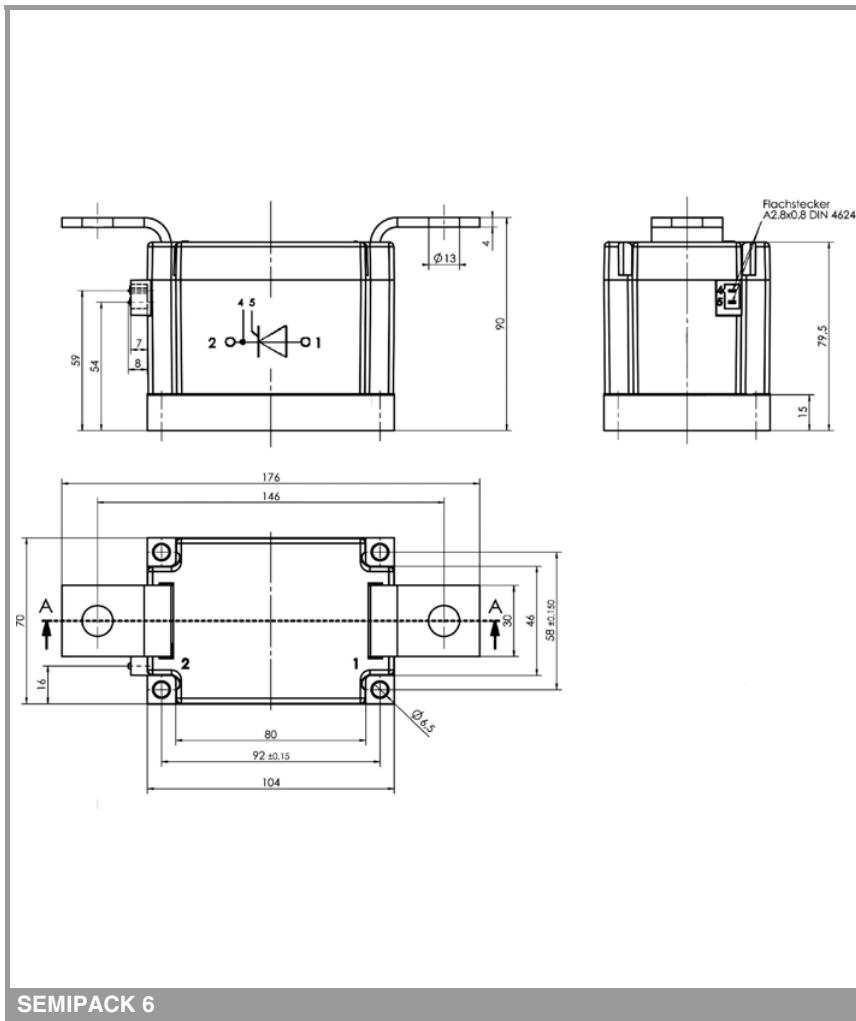


Fig. 9: Gate trigger characteristics



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

\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.