

# SKET 801/18 E



SEMIPACK® 6

## Thyristor Modules

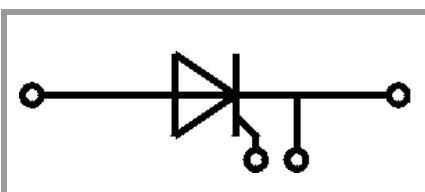
### SKET 801/18 E

#### 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



SKET

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

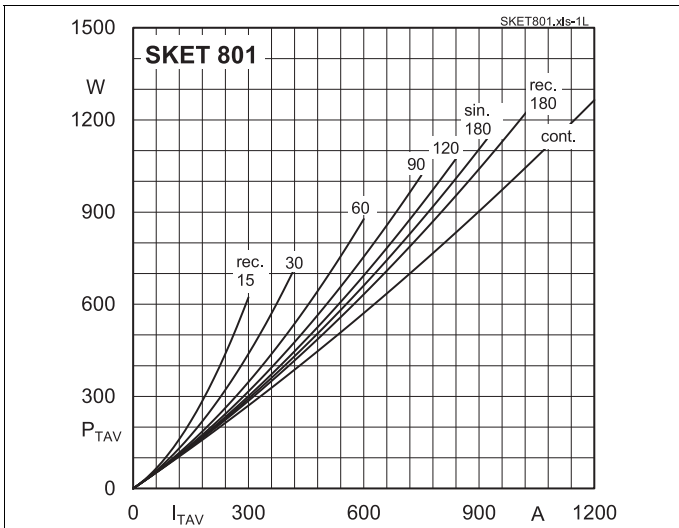


Fig. 1L: Power dissipation per thyristor vs. on-state current

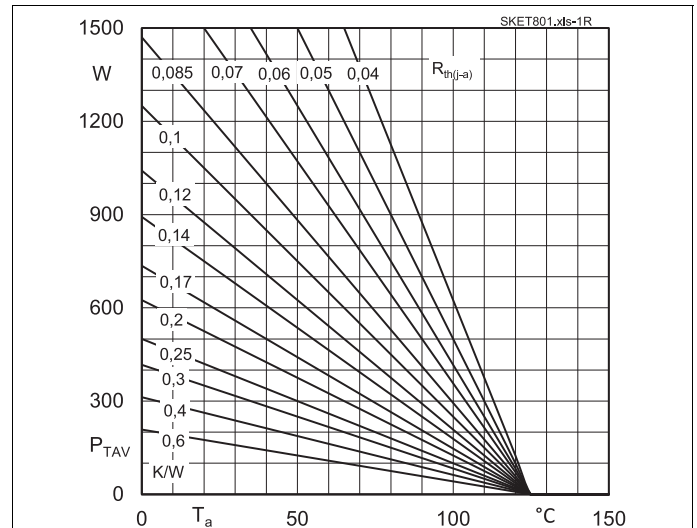


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

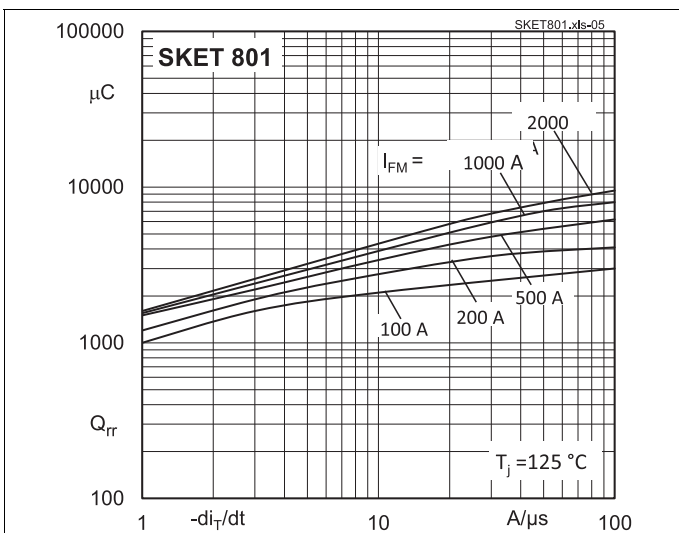


Fig. 5: Recovered charge vs. current decrease

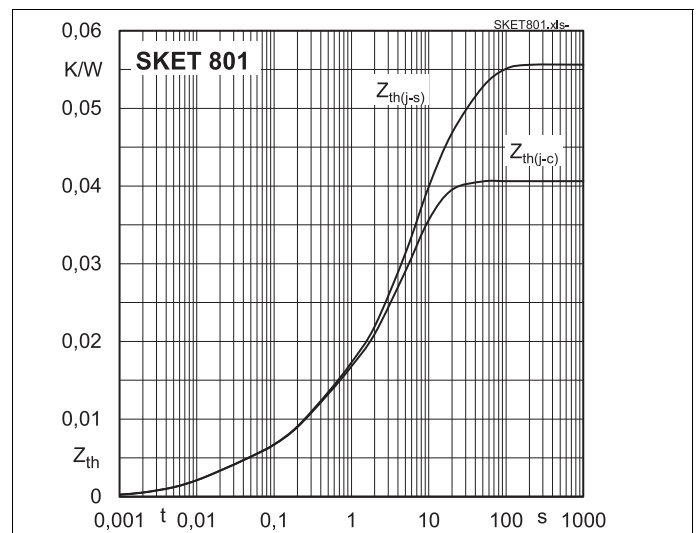


Fig. 6: Transient thermal impedance vs. time

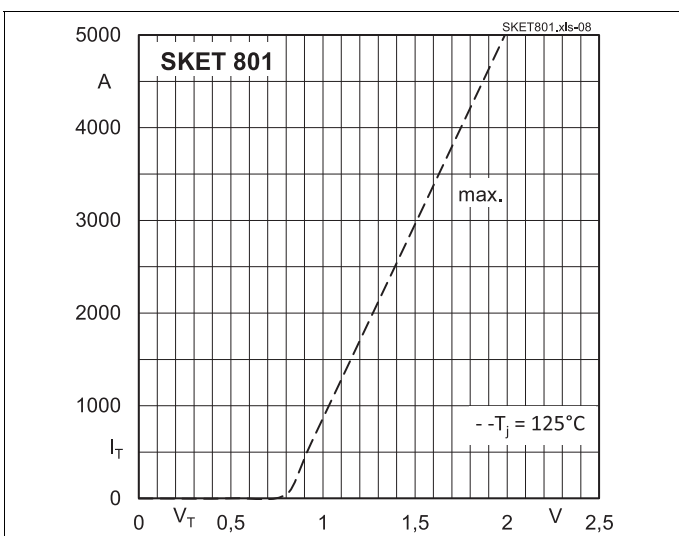


Fig. 7: On-state characteristics

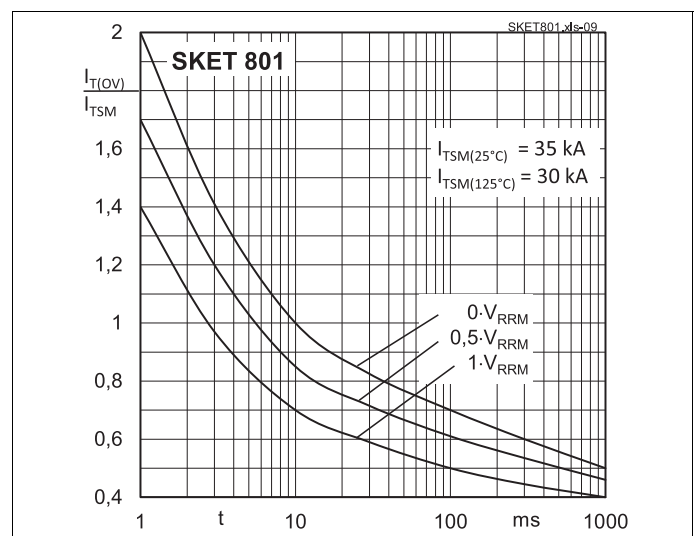


Fig. 8: Surge overload current vs. time



typical applications, which may still vary depending on the specific application. Therefore, products must be tested for the respective application in advance. Application adjustments may be necessary. The user of SEMIKRON products is responsible for the safety of their applications embedding SEMIKRON products and must take adequate safety measures to prevent the applications from causing a physical injury, fire or other problem if any of SEMIKRON products become faulty. The user is responsible to make sure that the application design is compliant with all applicable laws, regulations, norms and standards. Except as otherwise explicitly approved by SEMIKRON in a written document signed by authorized representatives of SEMIKRON, SEMIKRON products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury. No representation or warranty is given and no liability is assumed with respect to the accuracy, completeness and/or use of any information herein, including without limitation, warranties of non-infringement of intellectual property rights of any third party. SEMIKRON does not assume any liability arising out of the applications or use of any product; neither does it convey any license under its patent rights, copyrights, trade secrets or other intellectual property rights, nor the rights of others. SEMIKRON makes no representation or warranty of non-infringement or alleged non-infringement of intellectual property rights of any third party which may arise from applications. Due to technical requirements our products may contain dangerous substances. For information on the types in question please contact the nearest SEMIKRON sales office. This document supersedes and replaces all information previously supplied and may be superseded by updates. SEMIKRON reserves the right to make changes.