

**SEMIPACK® 1**

## Thyristor / Diode Modules

### SKKT 27

### SKKT 27B

### SKKH 27

### Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63 532

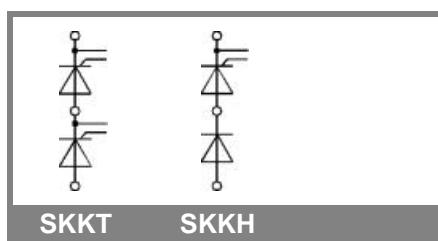
### Typical Applications

- DC motor control (e. g. for machine tools)
- AC motor soft starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

<sup>1)</sup> See the assembly instructions

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 50 \text{ A}$ (maximum value for continuous operation) $I_{TAV} = 27 \text{ A}$ (sin. 180; $T_c = 82^\circ\text{C}$ )		
900	800	SKKT 27/08E	SKKT 27B08E	SKKH 27/08E
1300	1200	SKKT 27/12E	SKKT 27B12E	SKKH 27/12E
1500	1400	SKKT 27/14E	SKKT 27B14E	SKKH 27/14E
1700	1600	SKKT 27/16E	SKKT 27B16E	SKKH 27/16E
1900	1800			SKKH 27/18E

<b>Symbol</b>	<b>Conditions</b>	<b>Values</b>	<b>Units</b>
$I_{TAV}$	sin. 180; $T_c = 85$ (100) $^\circ\text{C}$ ;	25 (18)	A
$I_D$	P3/180; $T_a = 45^\circ\text{C}$ ; B2 / B6	38 / 50	A
	P3/180F; $T_a = 35^\circ\text{C}$ ; B2 / B6	60 / 77	A
$I_{RMS}$	P3/180; $T_a = 45^\circ\text{C}$ ; W1 / W3	52 / 3 x 37	A
$I_{TSM}$	$T_{vj} = 25^\circ\text{C}$ ; 10 ms $T_{vj} = 125^\circ\text{C}$ ; 10 ms	550 480	A
$i^2t$	$T_{vj} = 25^\circ\text{C}$ ; 8,3 ... 10 ms $T_{vj} = 125^\circ\text{C}$ ; 8,3 ... 10 ms	1500 1150	A <sup>2</sup> s
$V_T$	$T_{vj} = 25^\circ\text{C}$ ; $I_T = 75 \text{ A}$	max. 1,8	V
$V_{T(TO)}$	$T_{vj} = 125^\circ\text{C}$	max. 0,9	V
$r_T$	$T_{vj} = 125^\circ\text{C}$	max. 12	mΩ
$I_{DD}; I_{RD}$	$T_{vj} = 125^\circ\text{C}$ ; $V_{RD} = V_{RRM}$ ; $V_{DD} = V_{DRM}$	max. 10	mA
$t_{gd}$	$T_{vj} = 25^\circ\text{C}$ ; $I_G = 1 \text{ A}$ ; $dI_G/dt = 1 \text{ A}/\mu\text{s}$	1	μs
$t_{gr}$	$V_D = 0,67 * V_{DRM}$	1	μs
$(di/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	max. 150	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	max. 1000	V/μs
$t_q$	$T_{vj} = 125^\circ\text{C}$ ,	80	μs
$I_H$	$T_{vj} = 25^\circ\text{C}$ ; typ. / max.	100 / 200	mA
$I_L$	$T_{vj} = 25^\circ\text{C}$ ; $R_G = 33 \Omega$ ; typ. / max.	250 / 400	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. 150	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. 5	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,9 / 0,45	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,95 / 0,48	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	1 / 0,5	K/W
$R_{th(c-s)}$	per thyristor / per module	0,2 / 0,1	K/W
$T_{vj}$		- 40 ... + 125	°C
$T_{stg}$		- 40 ... + 125	°C
$V_{isol}$	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 / 3000	V~
$M_s$	to heatsink	5 ± 15 % <sup>1)</sup>	Nm
$M_t$	to terminals	3 ± 15 %	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	95	g
Case	SKKT SKKT ...B SKKH	A 46 A 48 A 47	



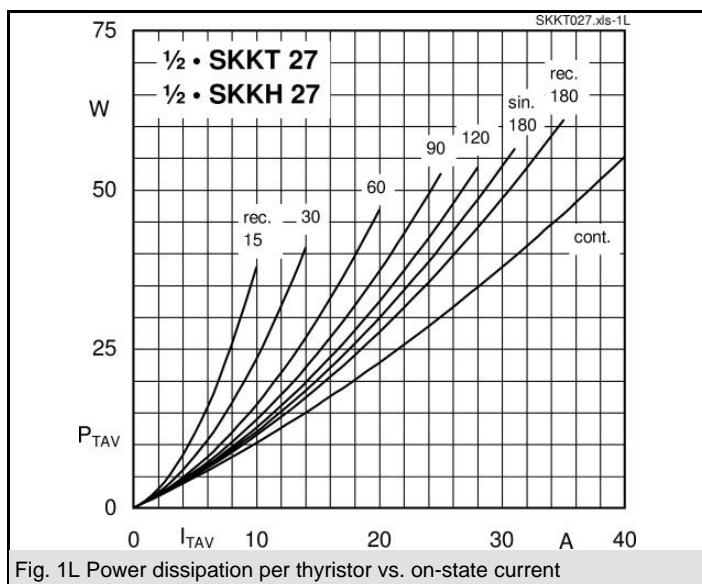


Fig. 1L Power dissipation per thyristor vs. on-state current

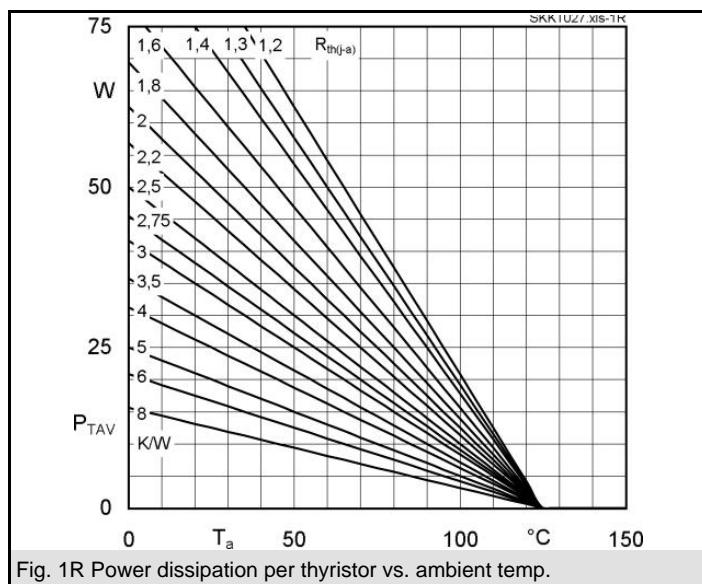


Fig. 1R Power dissipation per thyristor vs. ambient temp.

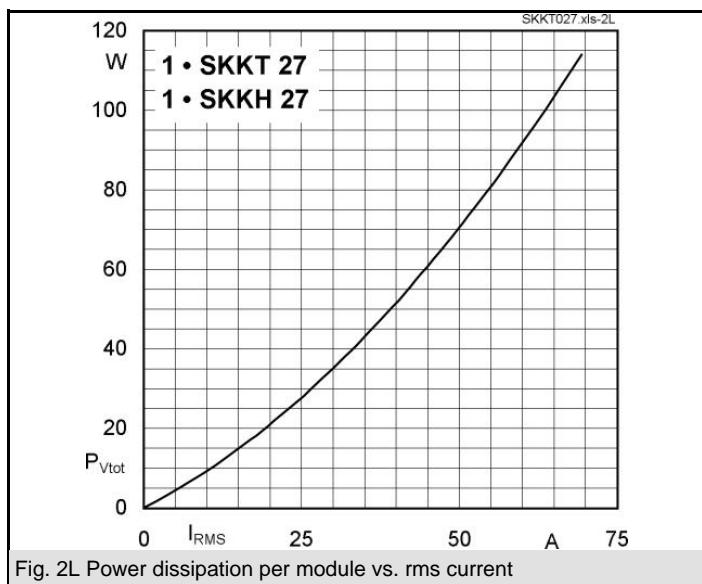


Fig. 2L Power dissipation per module vs. rms current

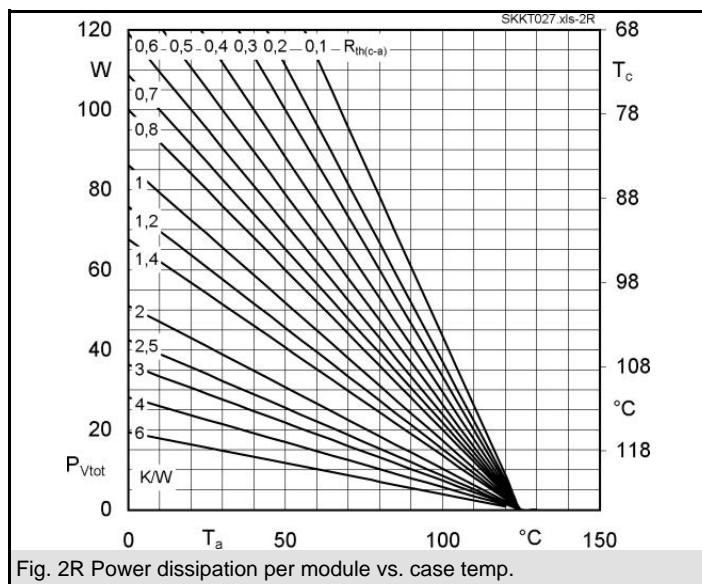


Fig. 2R Power dissipation per module vs. case temp.

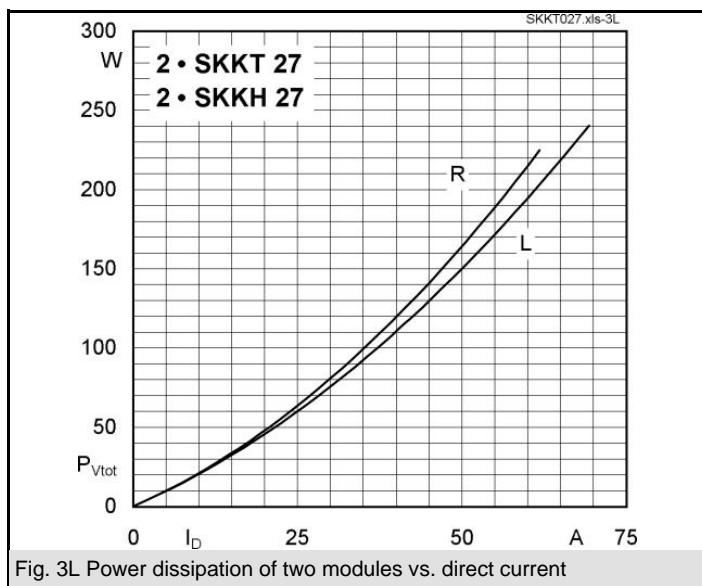


Fig. 3L Power dissipation of two modules vs. direct current

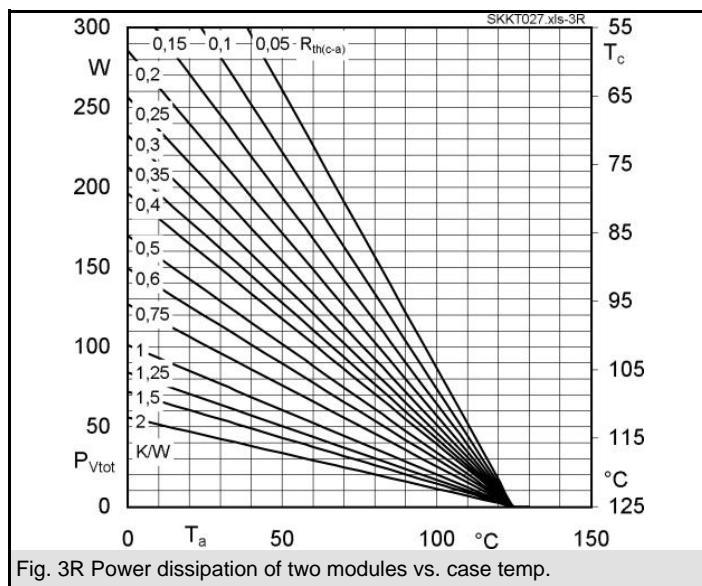


Fig. 3R Power dissipation of two modules vs. case temp.

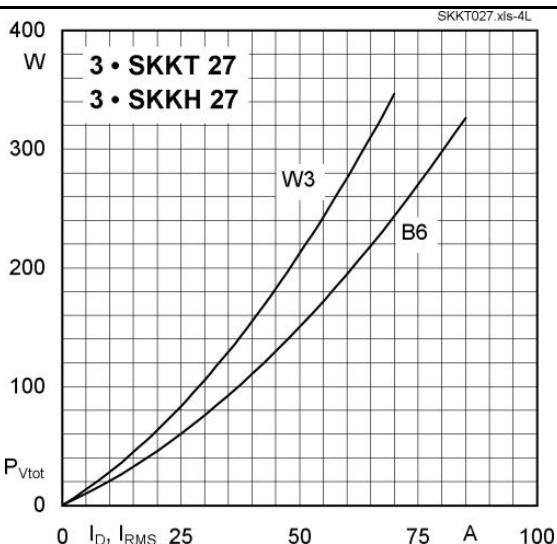


Fig. 4L Power dissipation of three modules vs. direct and rms current

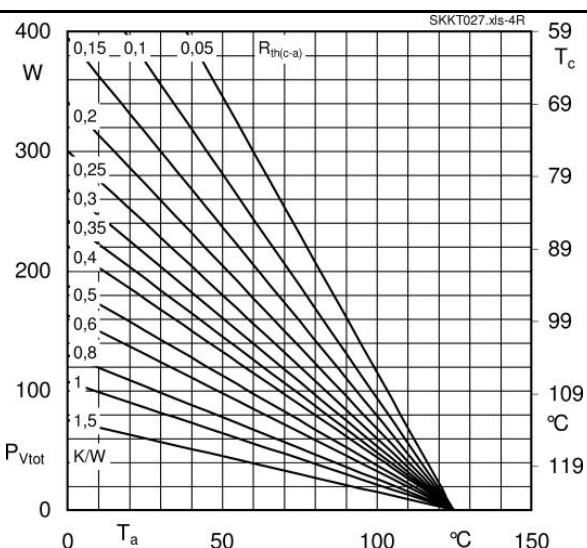


Fig. 4R Power dissipation of three modules vs. case temp.

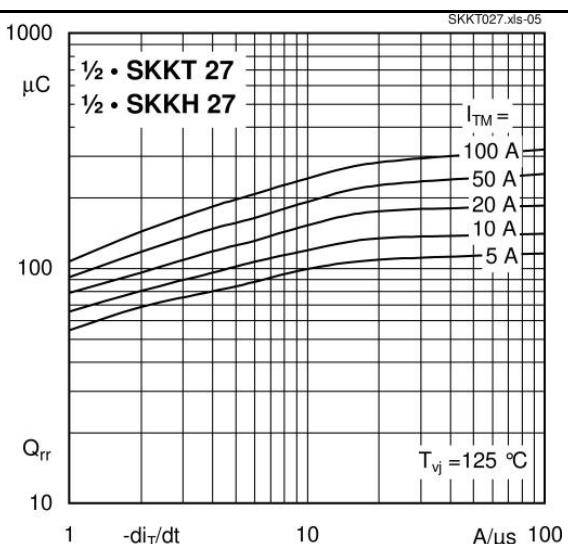


Fig. 5 Recovered charge vs. current decrease

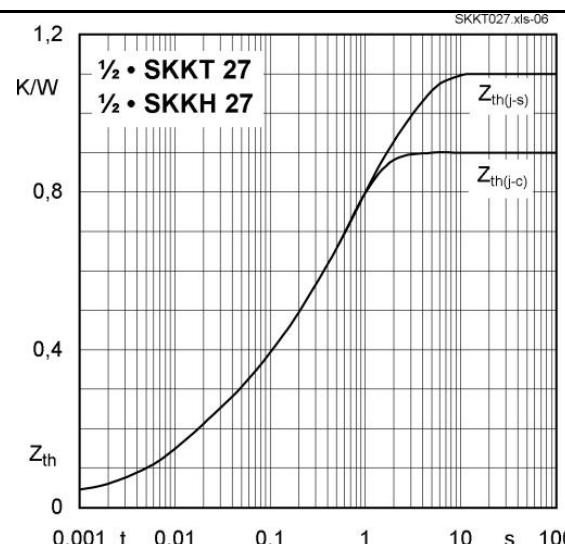


Fig. 6 Transient thermal impedance vs. time

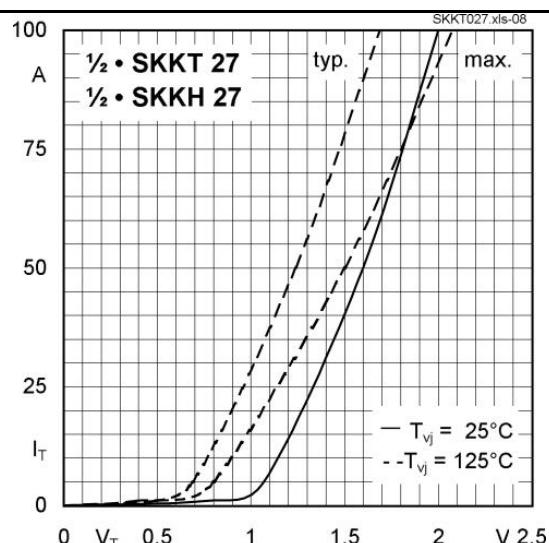


Fig. 7 On-state characteristics

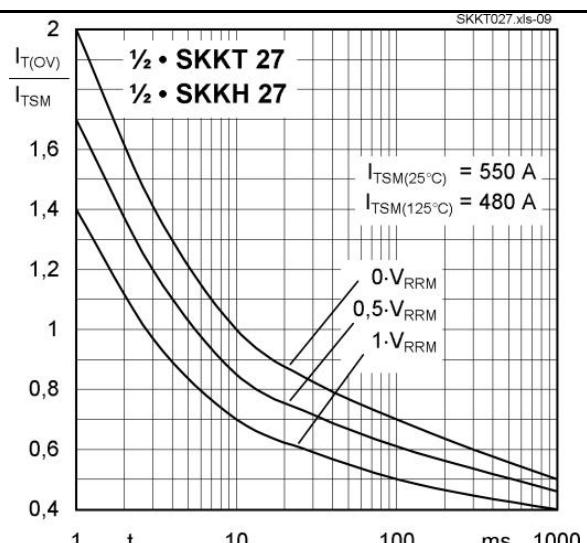
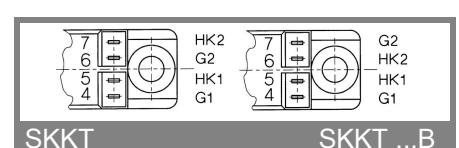
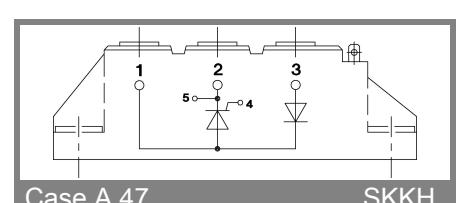
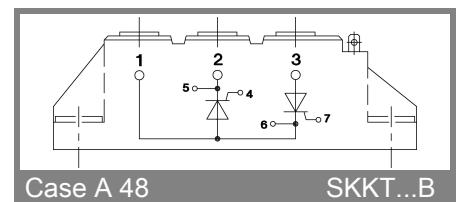
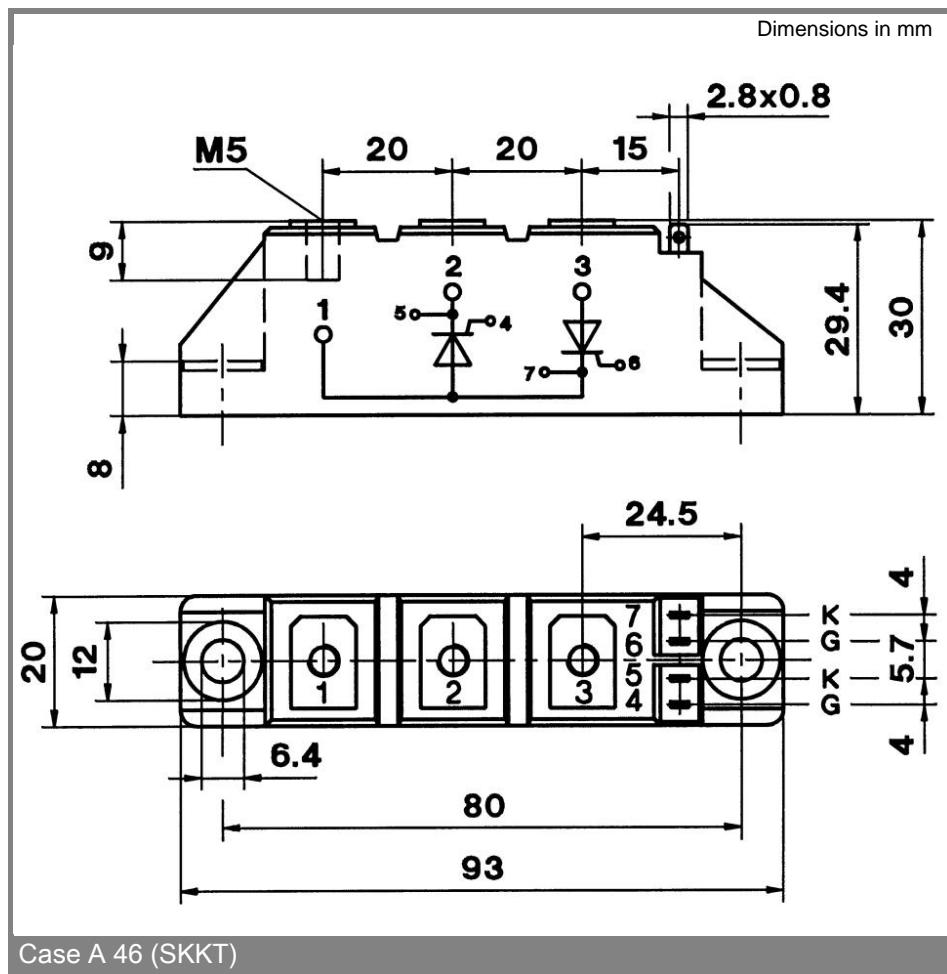
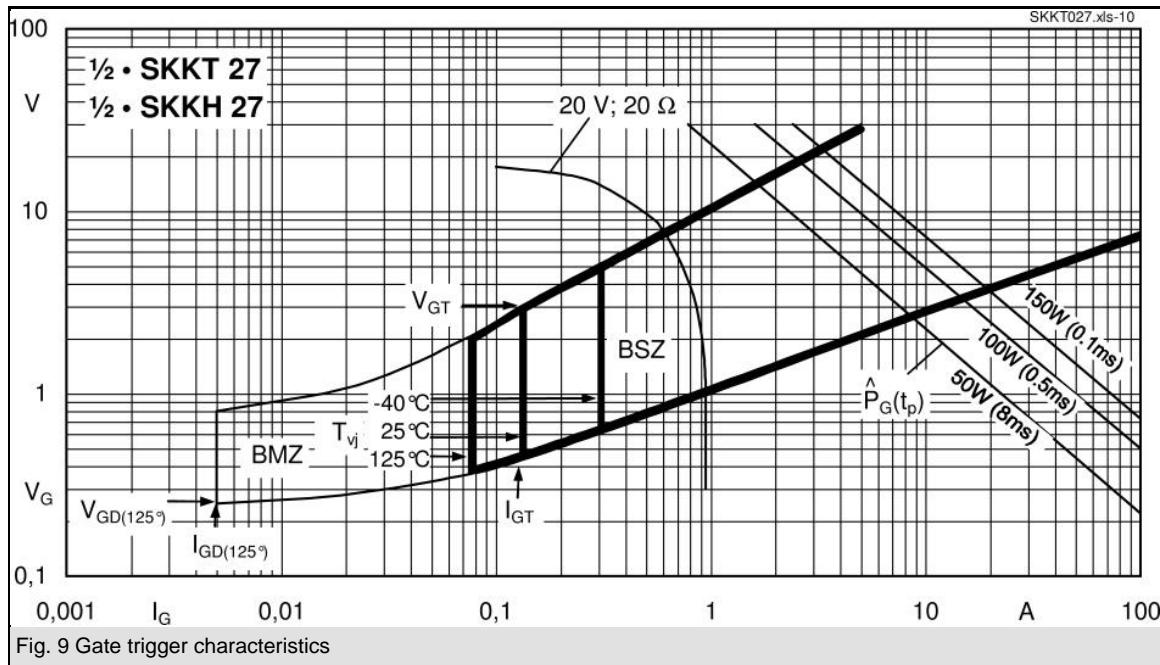


Fig. 8 Surge overload current vs. time



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