

# SKKT 253, SKKH 253



**SEMIPACK<sup>®</sup> 3**

## Thyristor / Diode Modules

**SKKT 253**

**SKKH 253**

### Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Chip soldered on direct copper bonded Al<sub>2</sub>O<sub>3</sub> ceramic
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

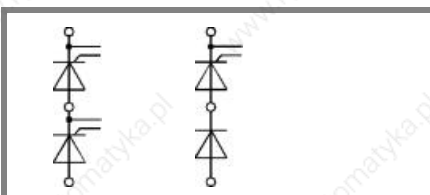
### Typical Applications

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

- 1) See the assembly instructions
- 2) The screws must be lubricate

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 420$ A (maximum value for continuous operation) $I_{TAV} = 253$ A (sin. 180; $T_c = 85$ °C)	
900	800	SKKT 253/08E	SKKH 253/08E
1300	1200	SKKT 253/12E	SKKH 253/12E
1500	1400	SKKT 253/14E	SKKH 253/14E
1700	1600	SKKT 253/16E	SKKH 253/16E
1900	1800	SKKT 253/18E	SKKH 253/18E

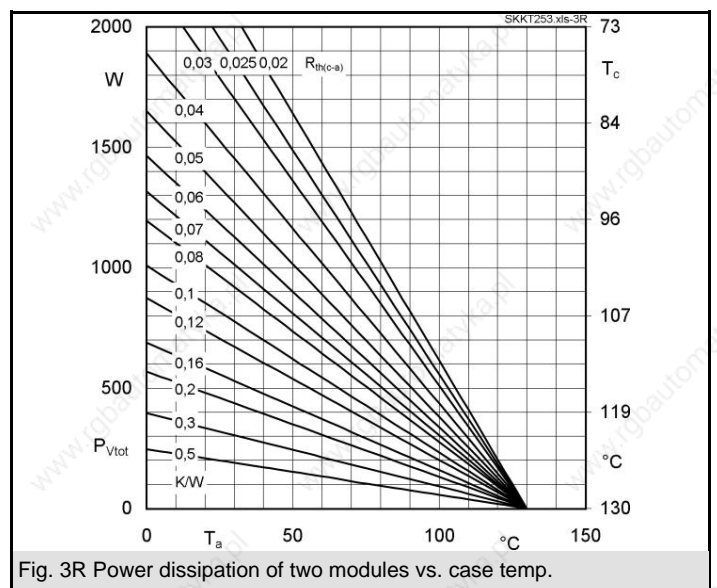
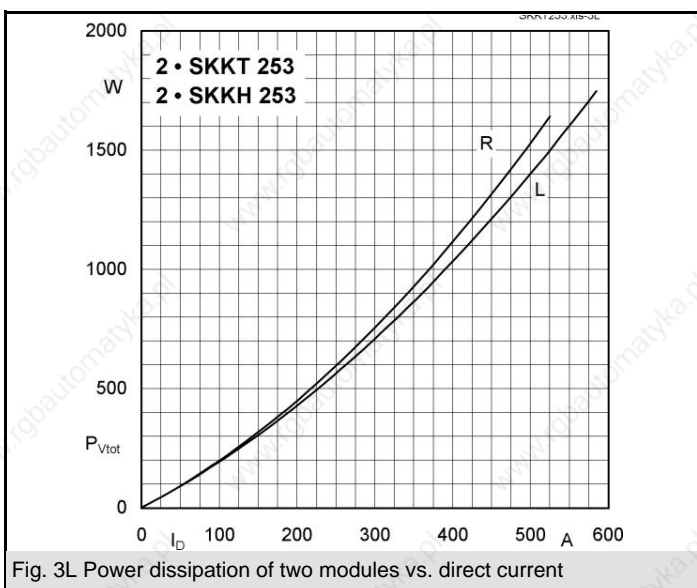
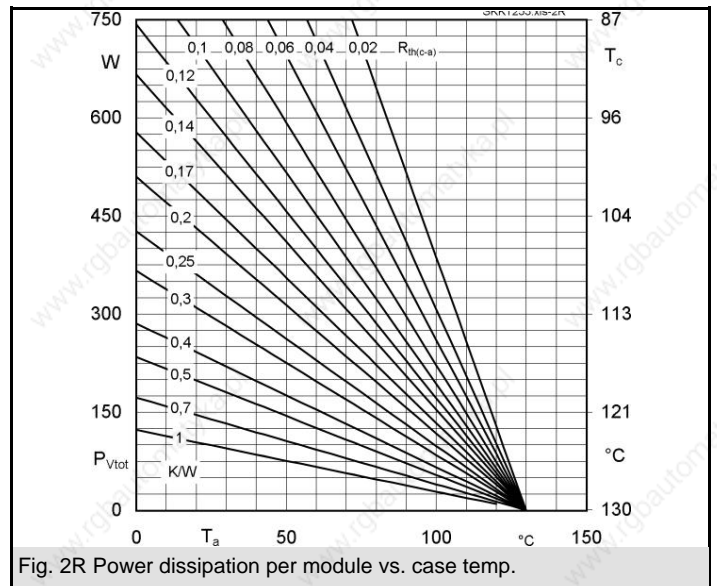
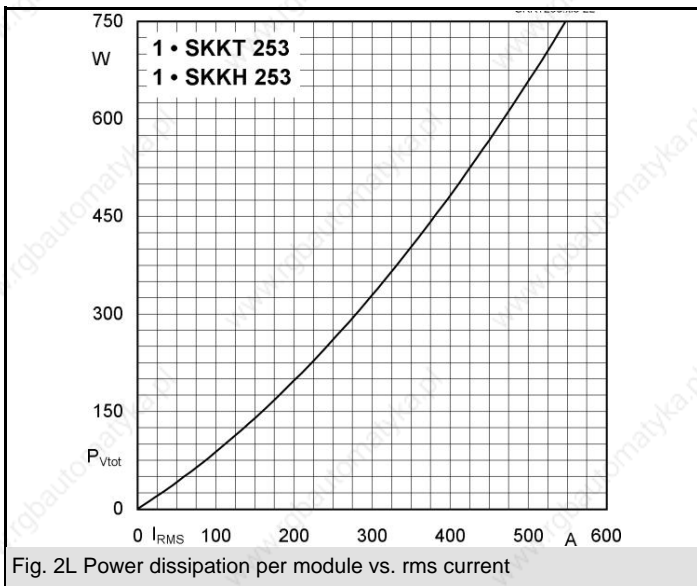
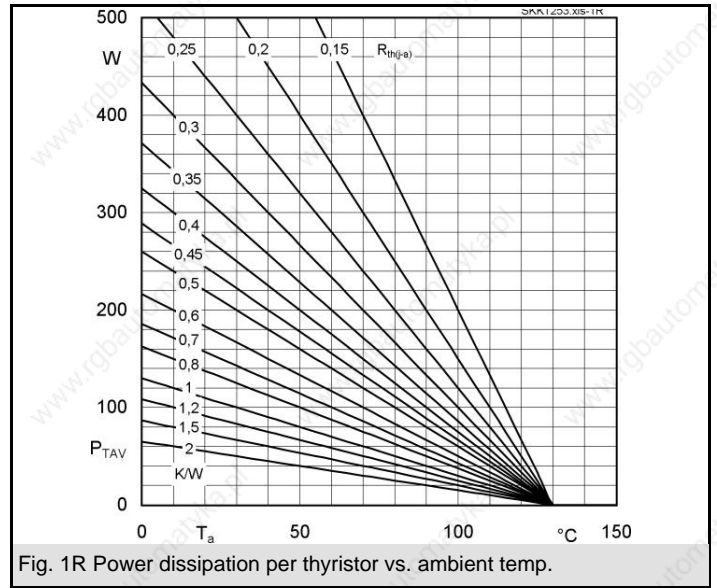
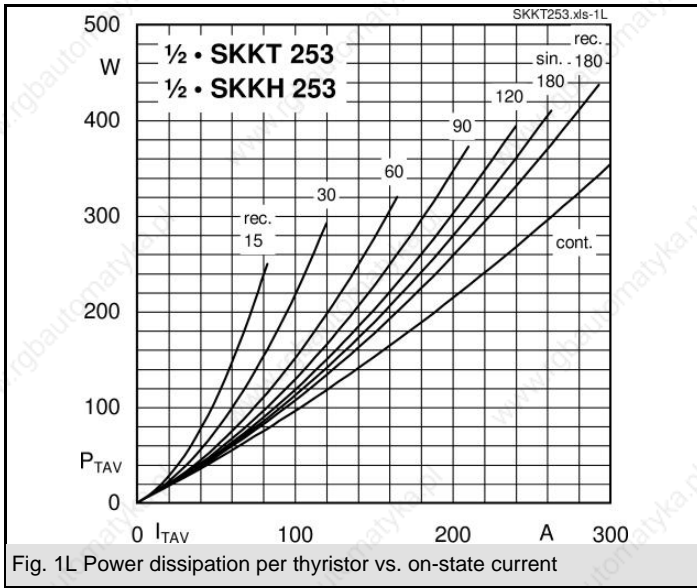
Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85$ (100) °C	253 (191)	A
$I_D$	P16/200F; $T_a = 35$ °C; B2 / B6	387 / 502	A
$I_{RMS}$	P16/200F; $T_a = 35$ °C; W1 / W3	465 / 3 * 400	A
$I_{TSM}$	$T_{vj} = 25$ °C; 10 ms	9000	A
	$T_{vj} = 130$ °C; 10 ms	8000	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms	405000	A <sup>2</sup> s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	320000	A <sup>2</sup> s
$V_T$	$T_{vj} = 25$ °C; $I_T = 750$ A	max. 1,6	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	max. 0,85	V
$r_T$	$T_{vj} = 130$ °C	max. 1,1	mΩ
$I_{DD}, I_{RD}$	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}, V_{DD} = V_{DRM}$	max. 50	mA
$t_{gd}$	$T_{vj} = 25$ °C; $I_G = 1$ A; $di_G/dt = 1$ A/μs	1	μs
$t_{gr}$	$V_D = 0,67 * V_{DRM}$	2	μs
$(di/dt)_{cr}$	$T_{vj} = 130$ °C	max. 250	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 130$ °C	max. 500 / 1000	V/μs
$t_q$	$T_{vj} = 130$ °C	50 ... 150	μs
$I_H$	$T_{vj} = 25$ °C; typ. / max.	150 / 500	mA
$I_L$	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	300 / 2000	mA
$V_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 3	V
$I_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 200	mA
$V_{GD}$	$T_{vj} = 130$ °C; d.c.	max. 0,25	V
$I_{GD}$	$T_{vj} = 130$ °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,11 / 0,055	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,115 / 0,057	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,125 / 0,0625	K/W
$R_{th(c-s)}$	per thyristor / per module	0,08 / 0,04	K/W
$T_{vj}$		- 40 ... + 130	°C
$T_{stg}$		- 40 ... + 130	°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	9 ± 15 % <sup>2)</sup>	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	400	g
Case	SKKT	A 43	
	SKKH	A 56	



**SKKT**

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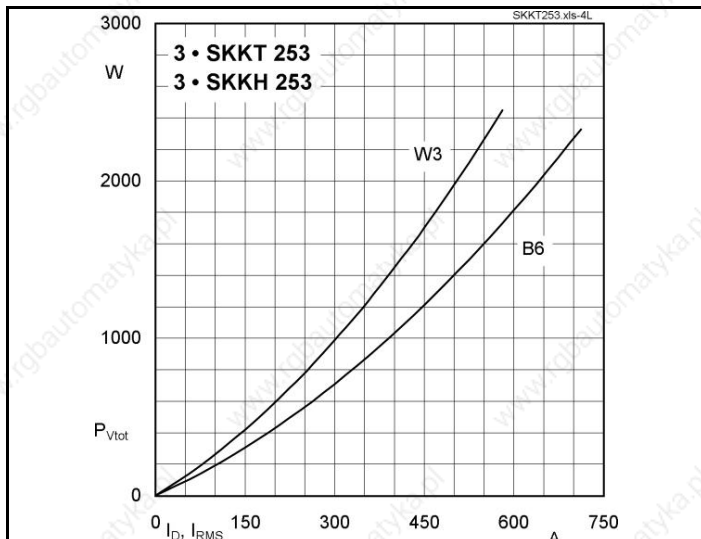


Fig. 4L Power dissipation of three modules vs. direct and rms current

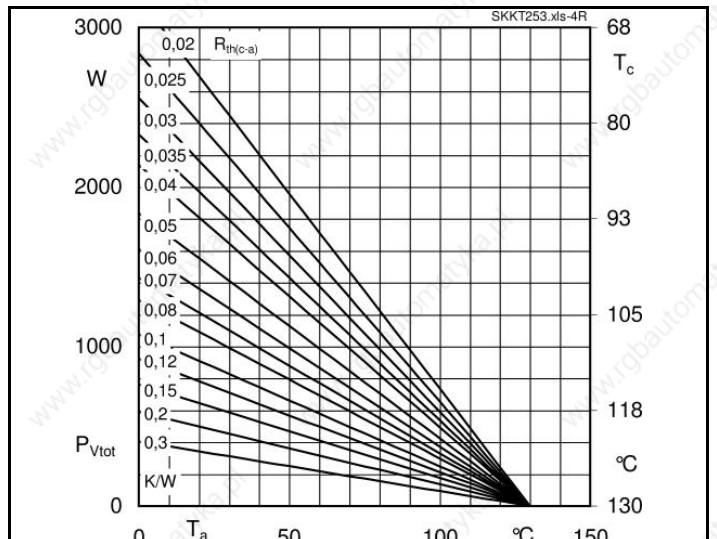


Fig. 4R Power dissipation of three modules vs. case temp.

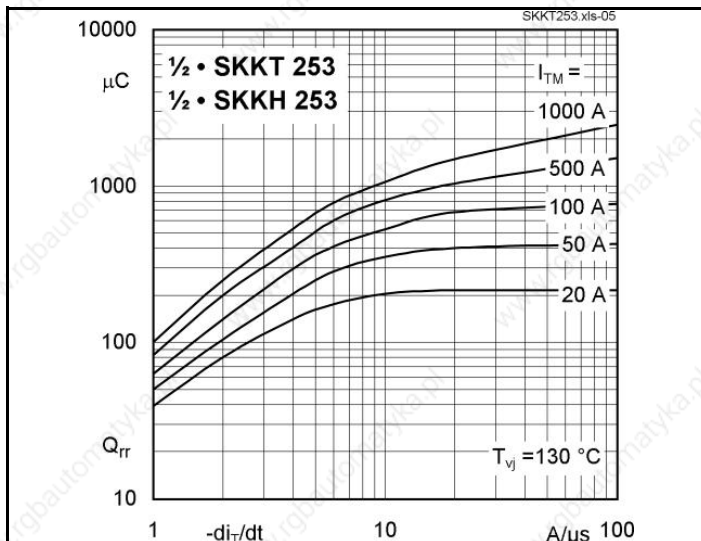


Fig. 5 Recovered charge vs. current decrease

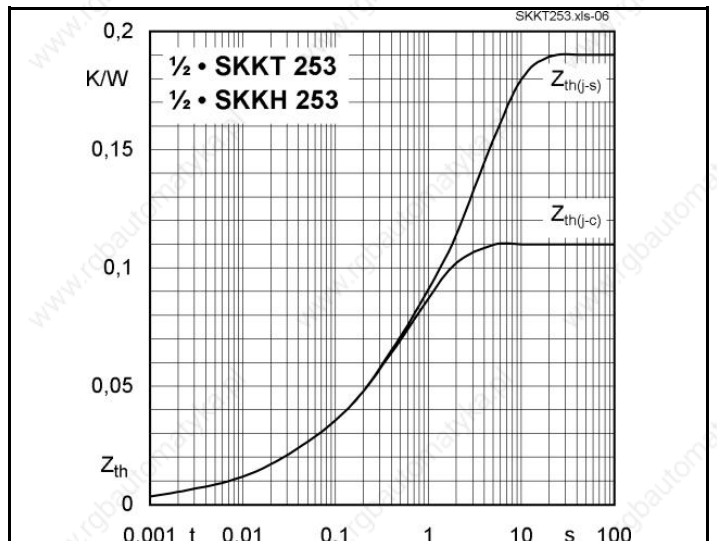


Fig. 6 Transient thermal impedance vs. time

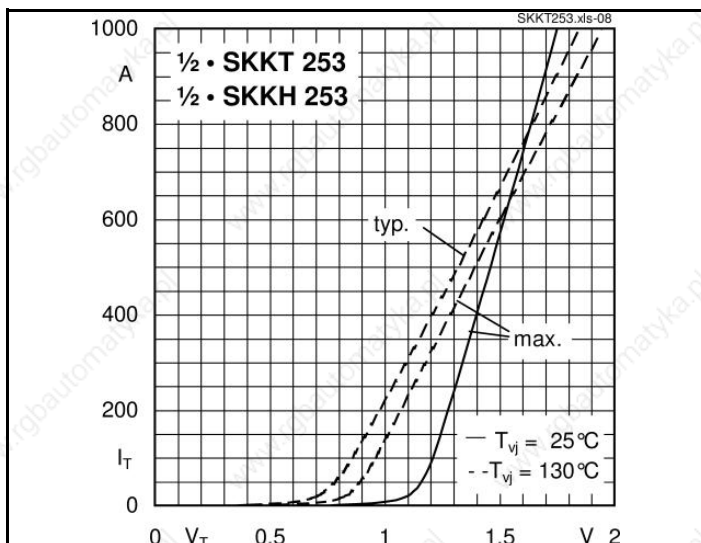


Fig. 7 On-state characteristics

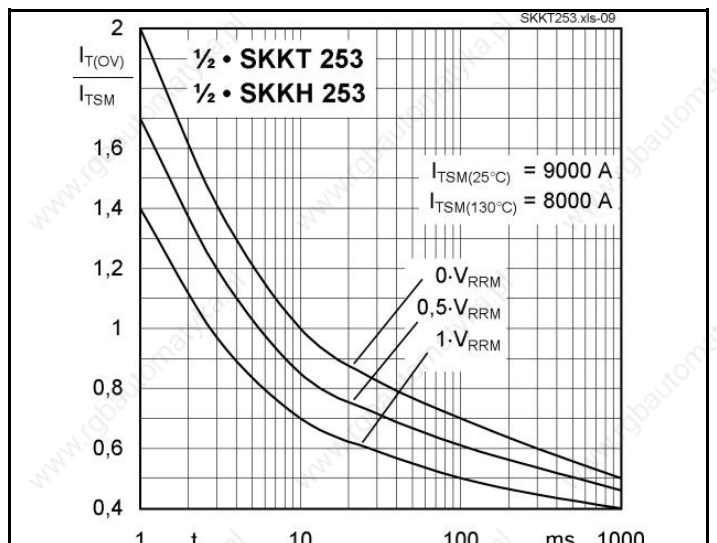
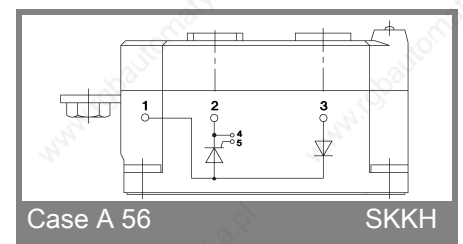
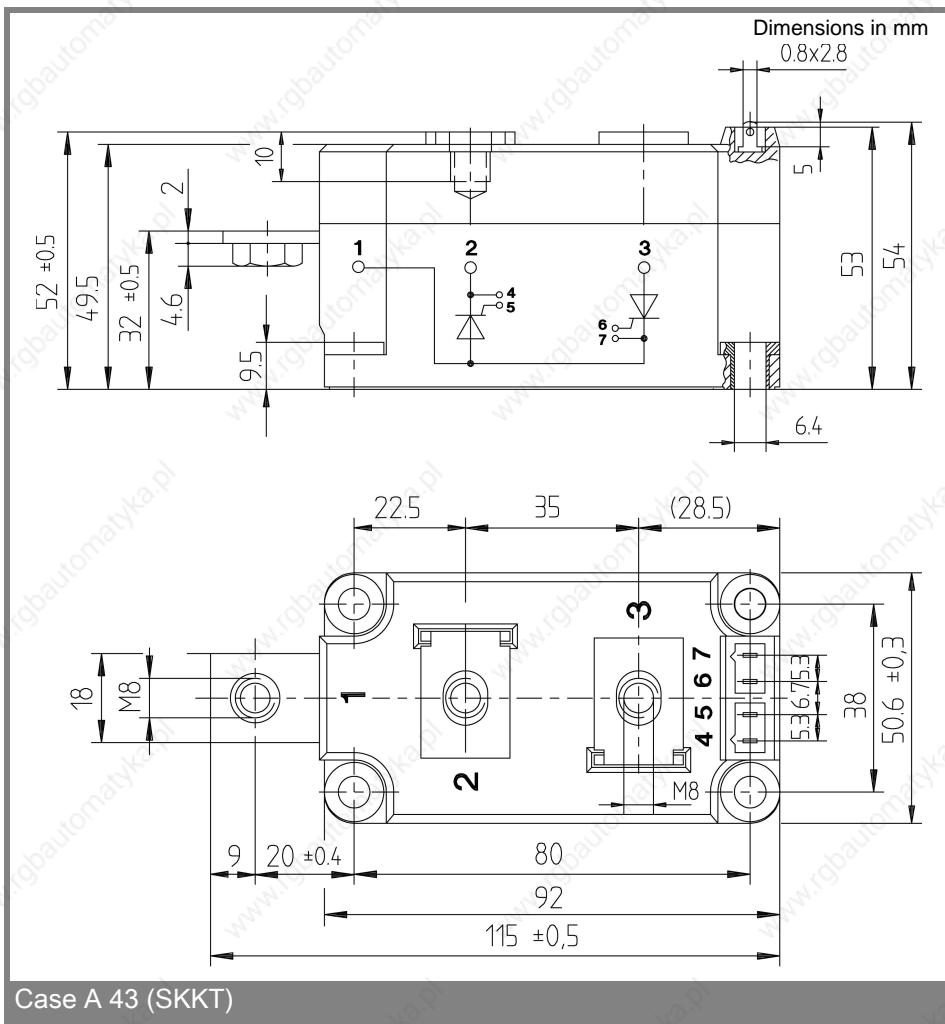
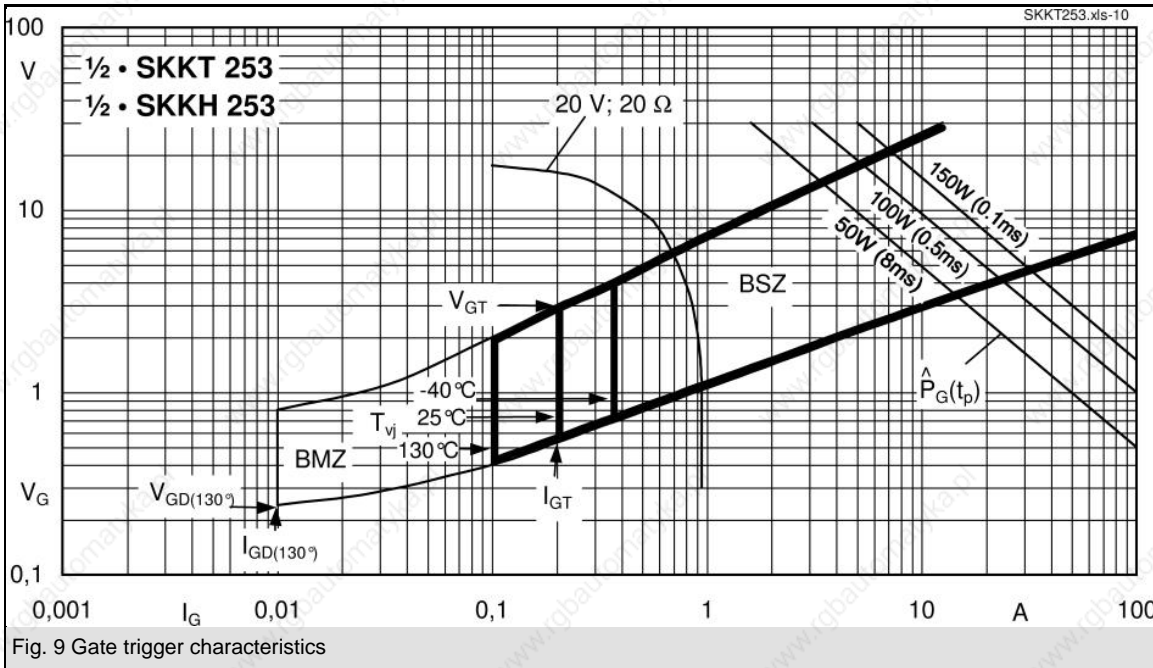


Fig. 8 Surge overload current vs. time

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