SKKT 253, SKKH 253

SEMIPACK® 3

Thyristor / Diode Modules

SKKT 253

SKKH 253

Features

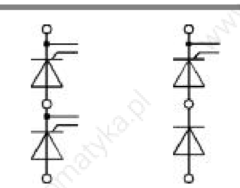
- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Chip soldered on direct copper bonded Al_2O_3 ceramic
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

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



SKKT SKKH

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
i²t	T_{vj} = 25 °C; 8,3 ... 10 ms	405000	A²s
	T_{vj} = 130 °C; 8,3 ... 10 ms	320000	A²s
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 %[1)]	Nm
M_t	to terminals	9 ± 15 %[2)]	Nm
a		5 * 9,81	m/s²
m	approx.	400	g
Case	SKKT	A 43	
	SKKH	A 56	

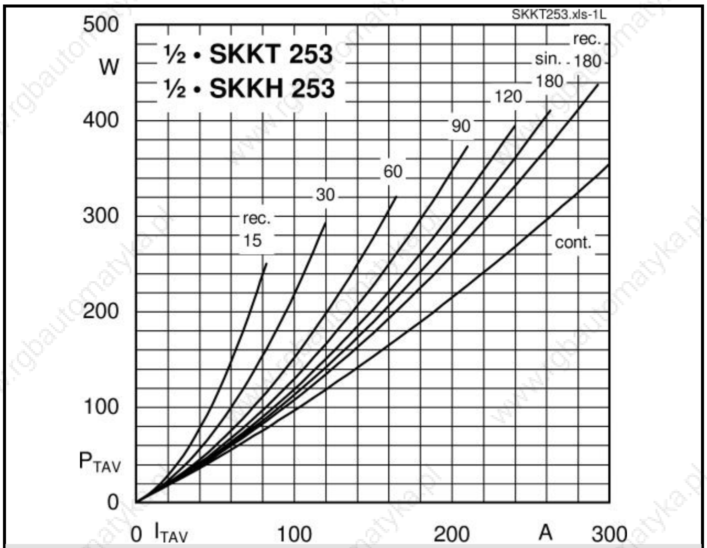


Fig. 1L Power dissipation per thyristor vs. on-state current

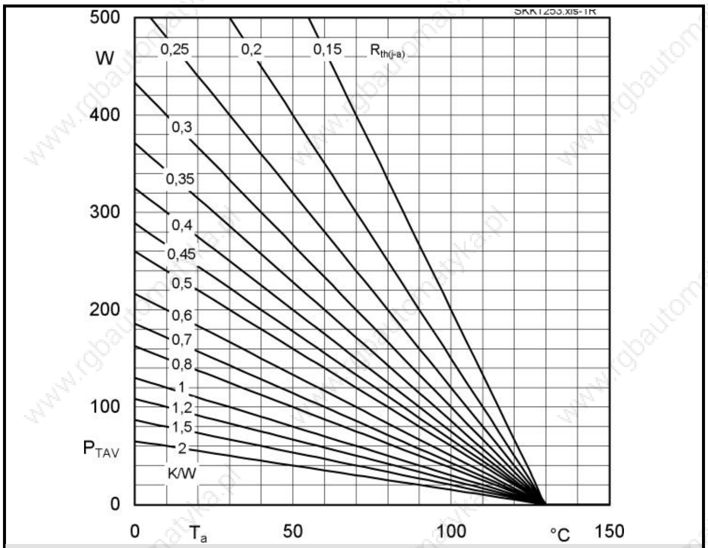


Fig. 1R Power dissipation per thyristor vs. ambient temp.

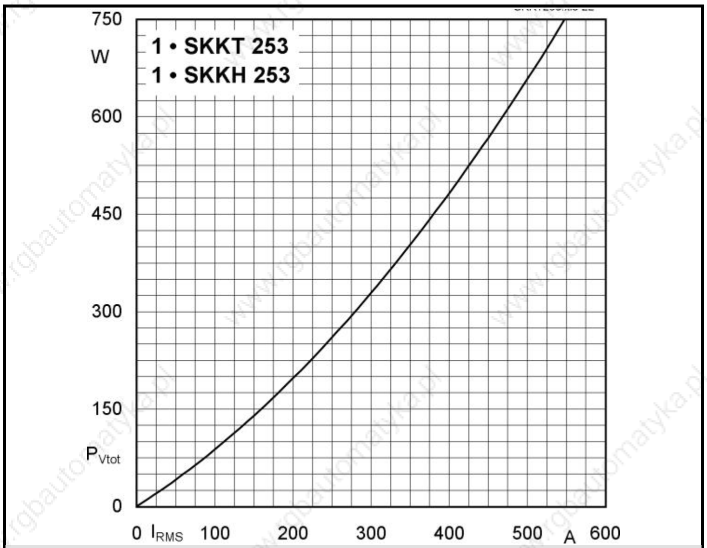


Fig. 2L Power dissipation per module vs. rms current

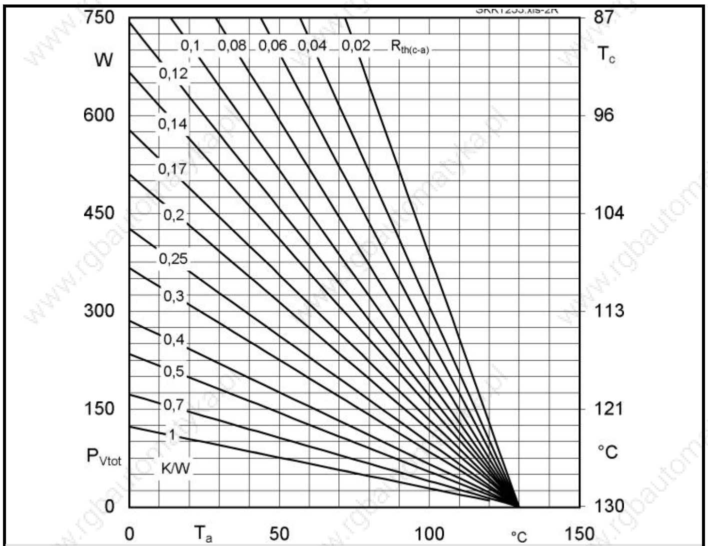


Fig. 2R Power dissipation per module vs. case temp.

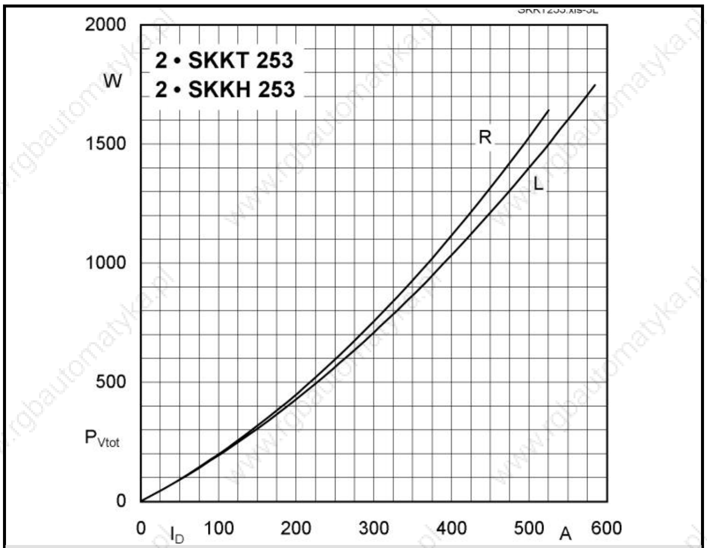


Fig. 3L Power dissipation of two modules vs. direct current

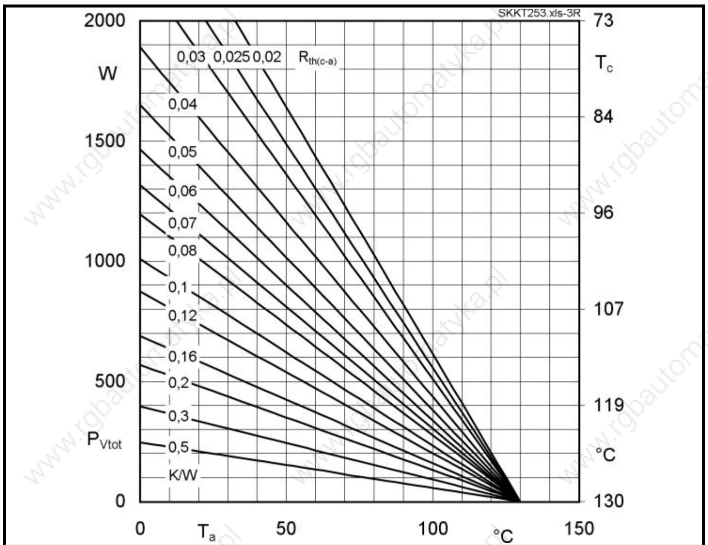


Fig. 3R Power dissipation of two modules vs. case temp.

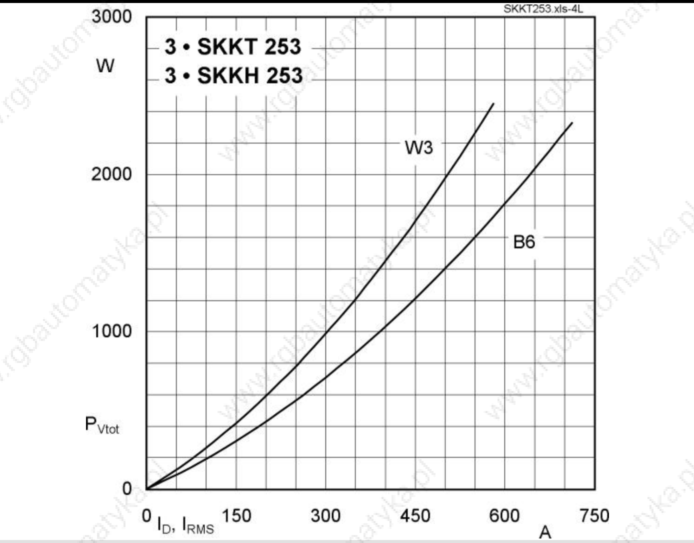


Fig. 4L Power dissipation of three modules vs. direct and rms current

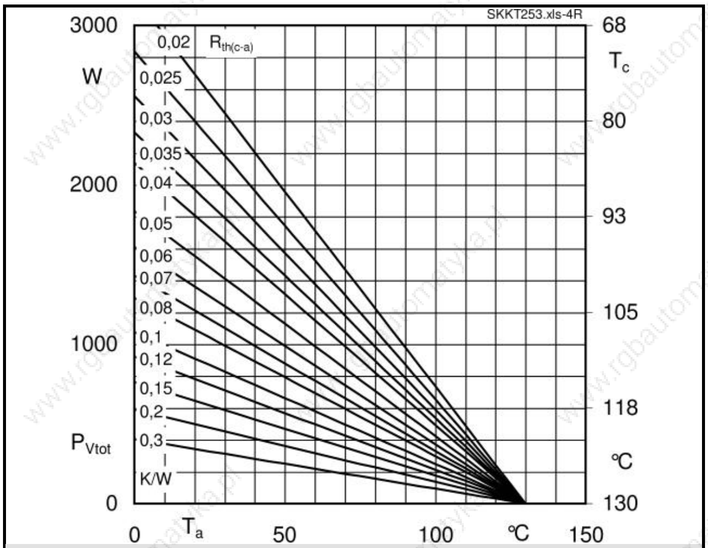


Fig. 4R Power dissipation of three modules vs. case temp.

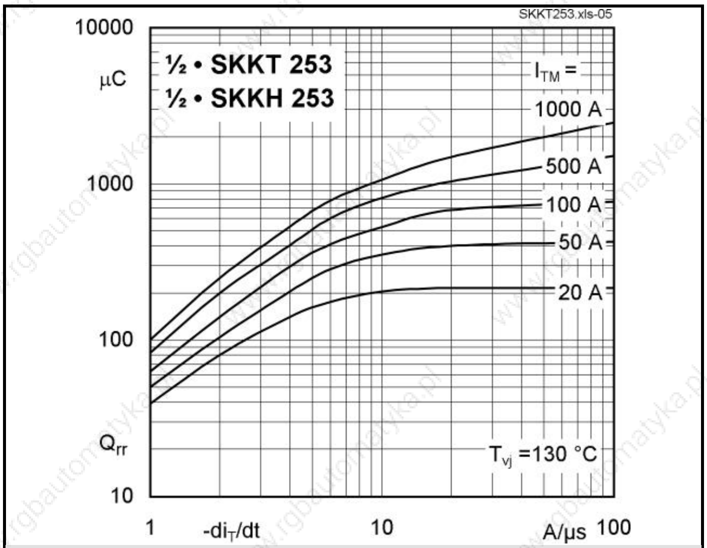


Fig. 5 Recovered charge vs. current decrease

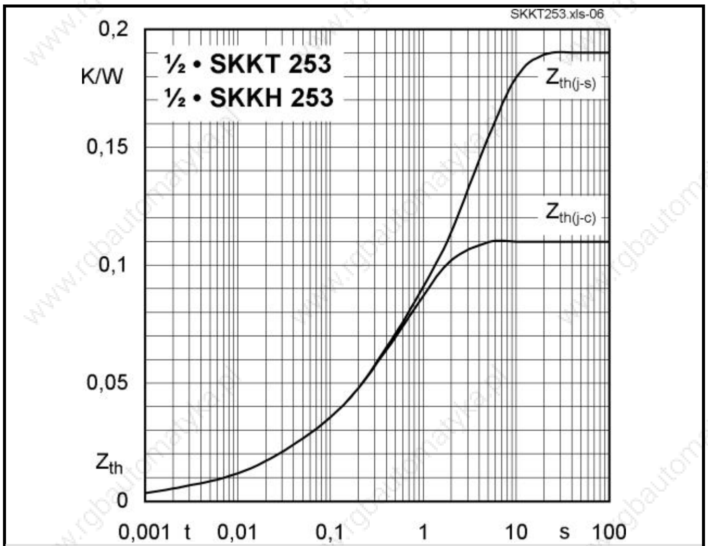


Fig. 6 Transient thermal impedance vs. time

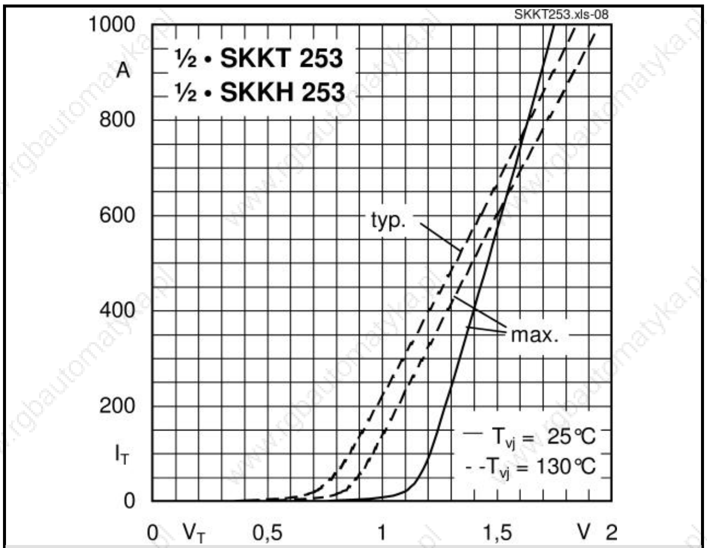


Fig. 7 On-state characteristics

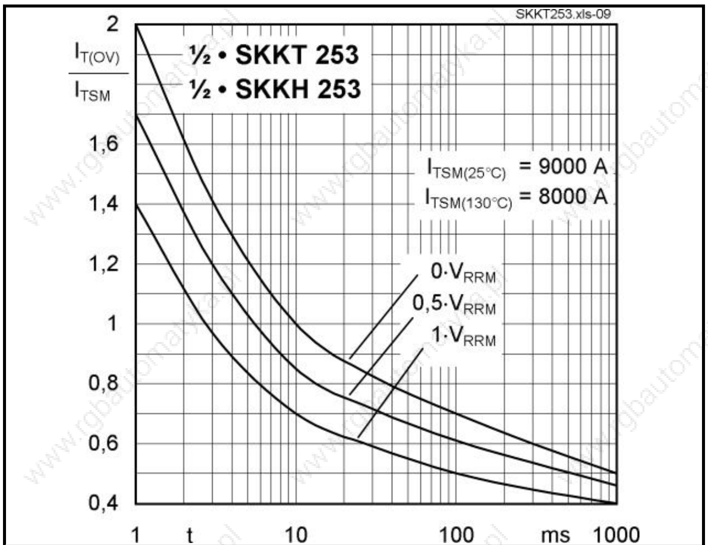


Fig. 8 Surge overload current vs. time

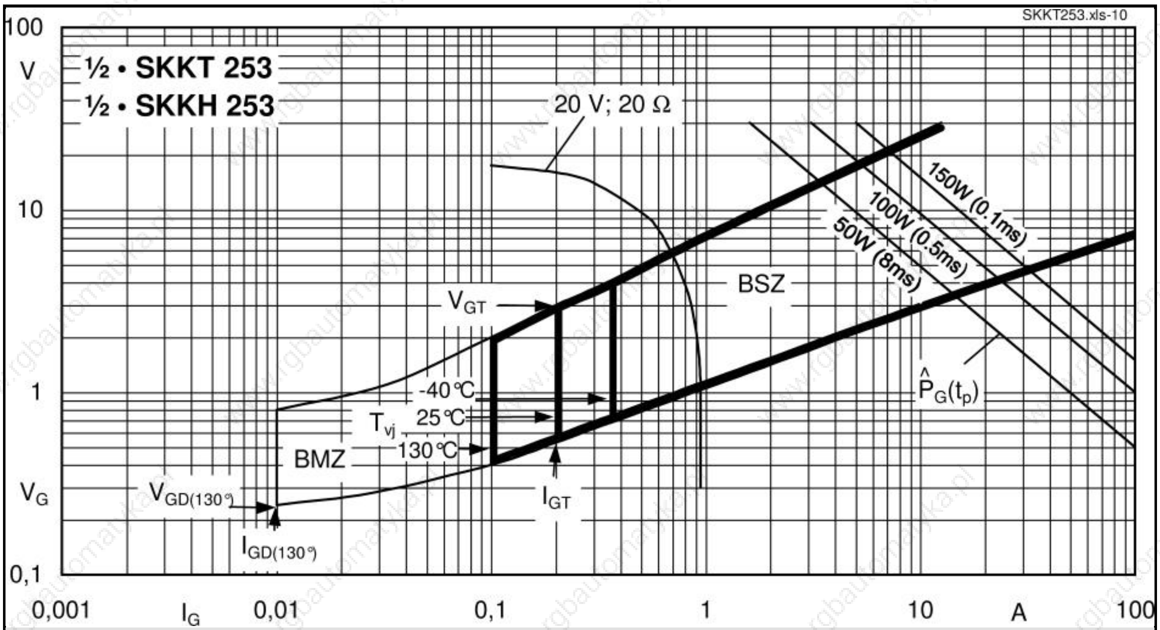
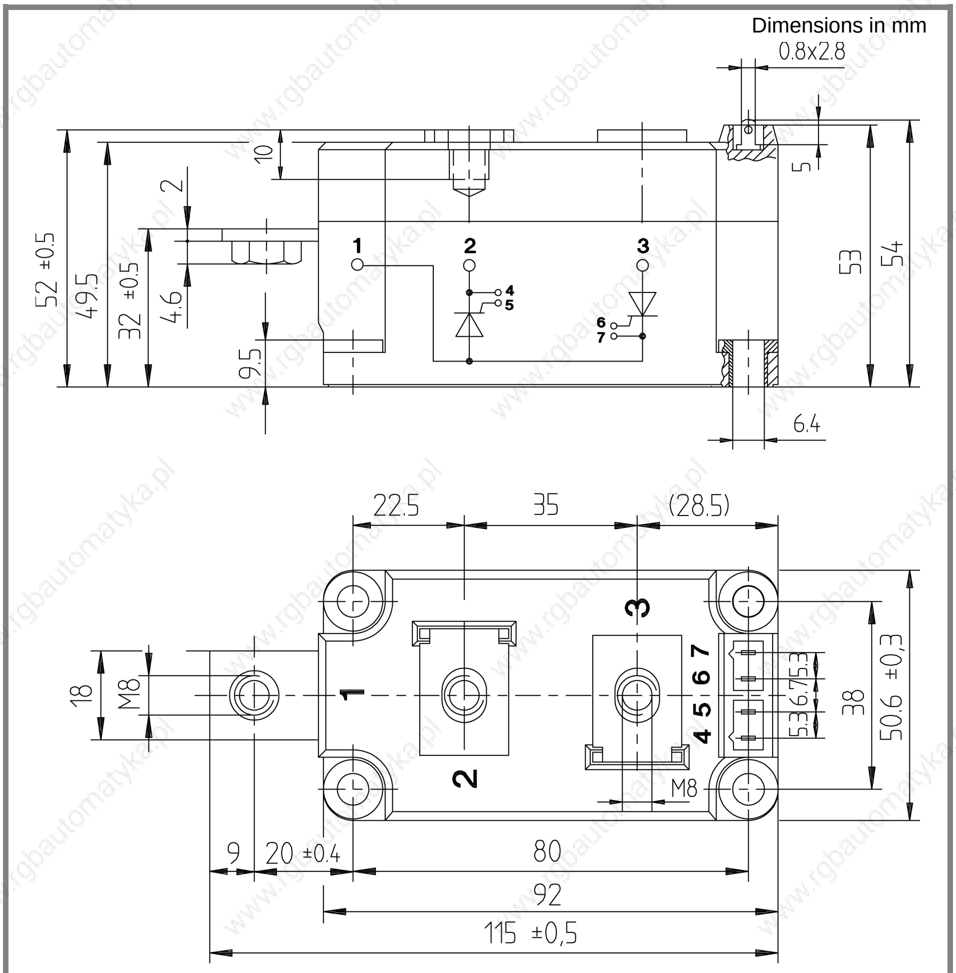
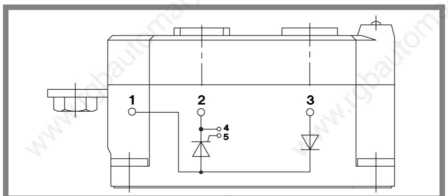


Fig. 9 Gate trigger characteristics



Case A 43 (SKKT)


Case A 56 SKKH

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