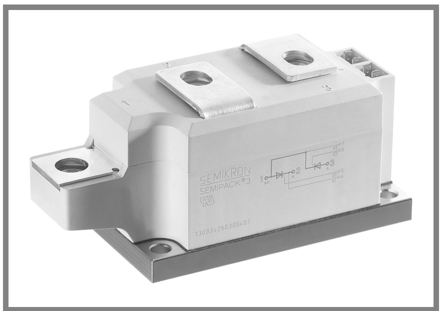
SKKT 250, SKKH 250



SEMIPACK® 3

Thyristor / Diode Modules

SKKH 250

SKKT 250

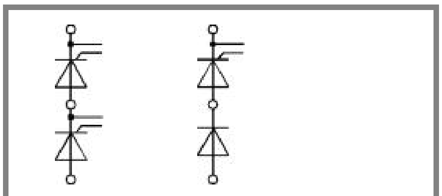
Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- 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)
- AC motor starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instructions



SKKT SKKH

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 420 A (maximum value for continuous operation) I_{TAV} = 250 A (sin. 180; T_c = 85 °C)	
900	800	SKKT 250/08E	
1300	1200	SKKT 250/12E	SKKH 250/12E
1700	1600	SKKT 250/16E	SKKH 250/16E
1900	1800	SKKT 250/18E	SKKH 250/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 85 (100) °C;	250 (178)	A
I_D	P16/200F; T_a = 35 °C; B2/B6	450 / 585	A
I_{RMS}	P16/200F; T_a = 35 °C; W1 / W3	566 / 3 * 471	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. 1,4	V
$V_{T(TO)}$	T_{vj} = 130 °C	max. 0,925	V
r_T	T_{vj} = 130 °C	max. 0,45	mΩ
I_{DD}; I_{RD}	T_{vj} = 130 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 85	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. 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	0,14 / 0,07	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,15 / 0,075	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,165 / 0,083	K/W
$R_{th(c-s)}$	per thyristor / per module	0,04 / 0,02	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 %	Nm
a		5 * 9,81	m/s²
m	approx.	600	g
Case	SKKT	A 73b	
	SKKH	A 76b	

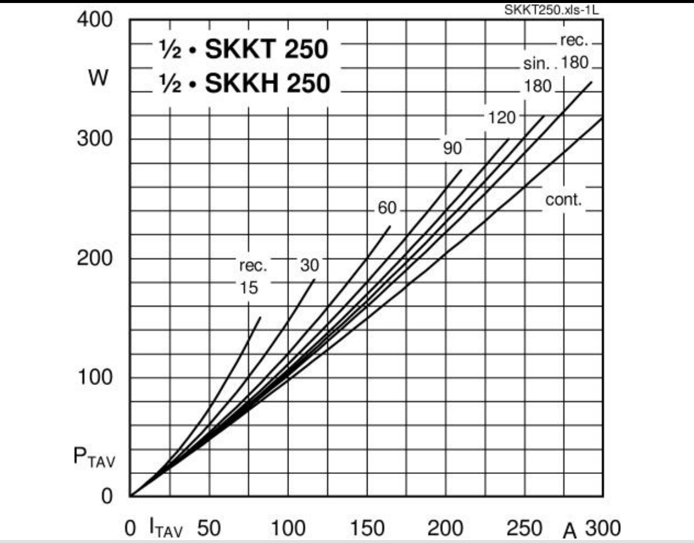


Fig. 1L Power dissipation per thyristor vs. on-state current

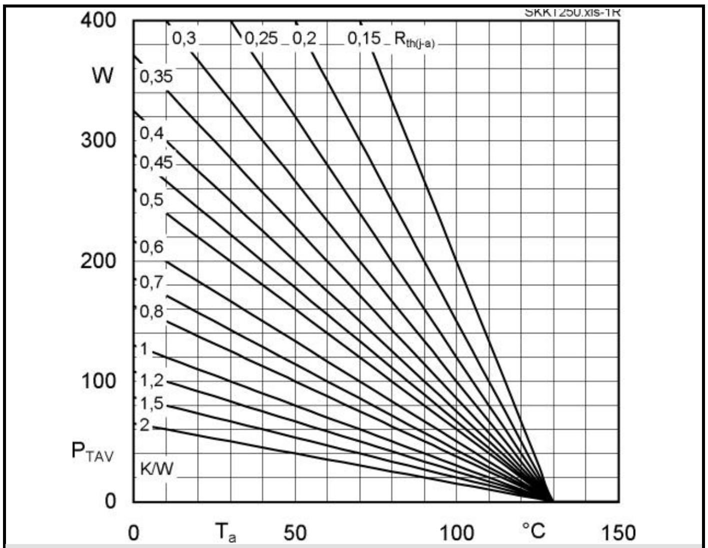


Fig. 1R Power dissipation per thyristor vs. ambient temp.

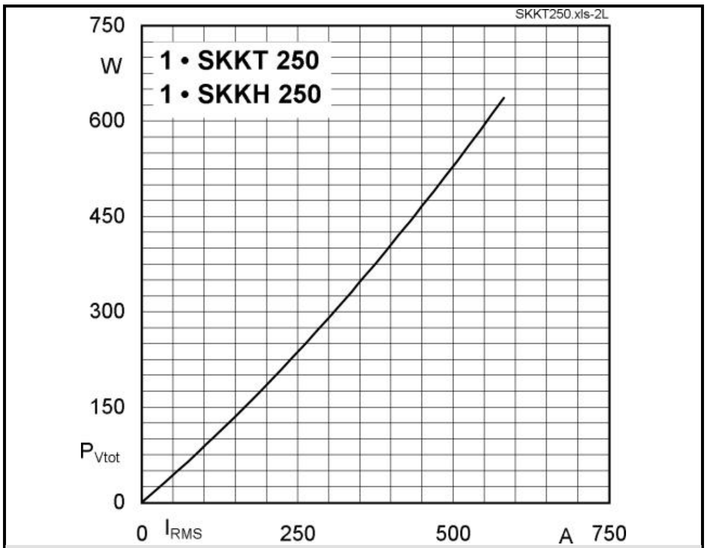


Fig. 2L Power dissipation per module vs. rms current

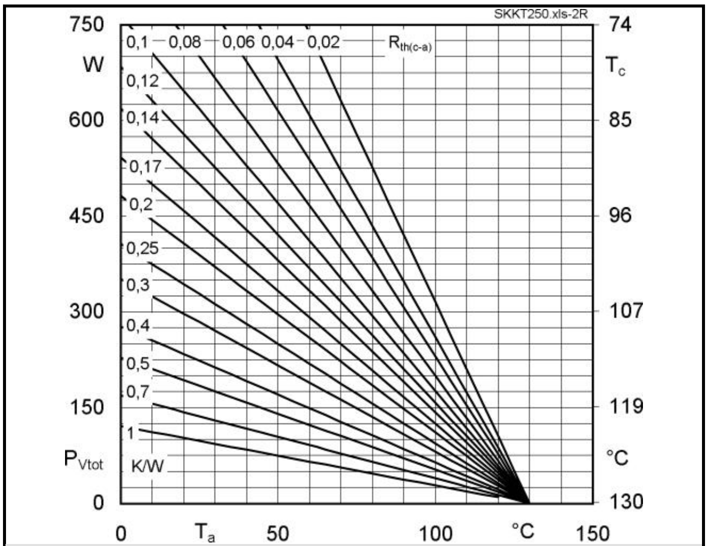


Fig. 2R Power dissipation per module vs. case temp.

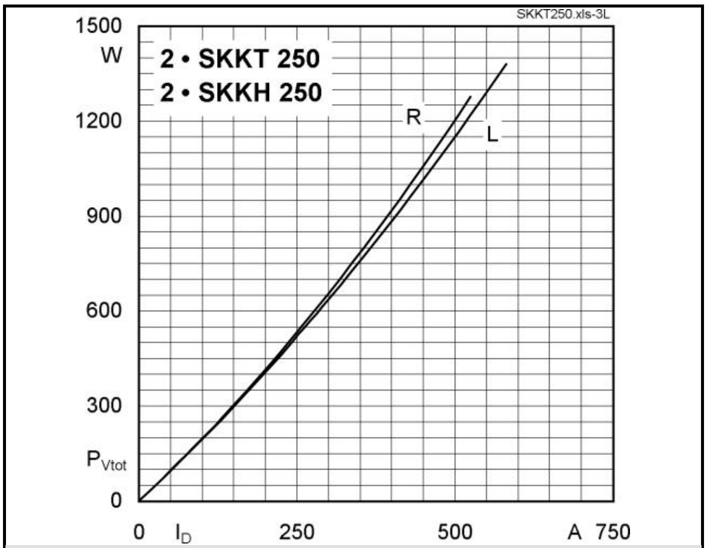


Fig. 3L Power dissipation of two modules vs. direct current

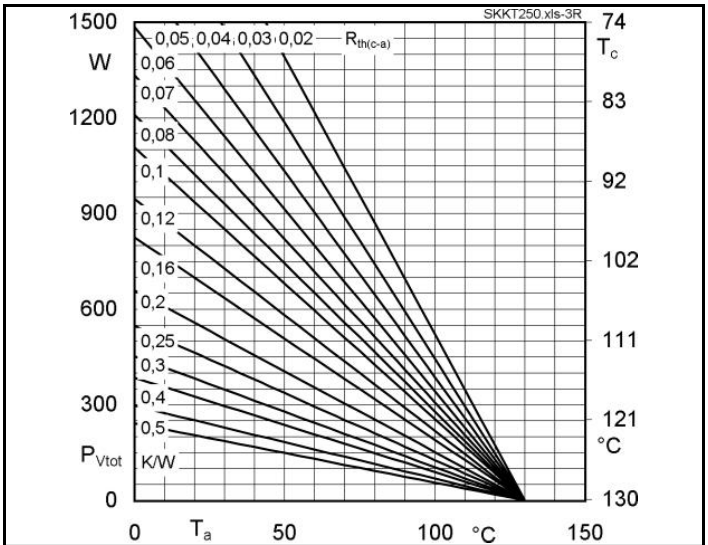


Fig. 3R Power dissipation of two modules vs. case temp.

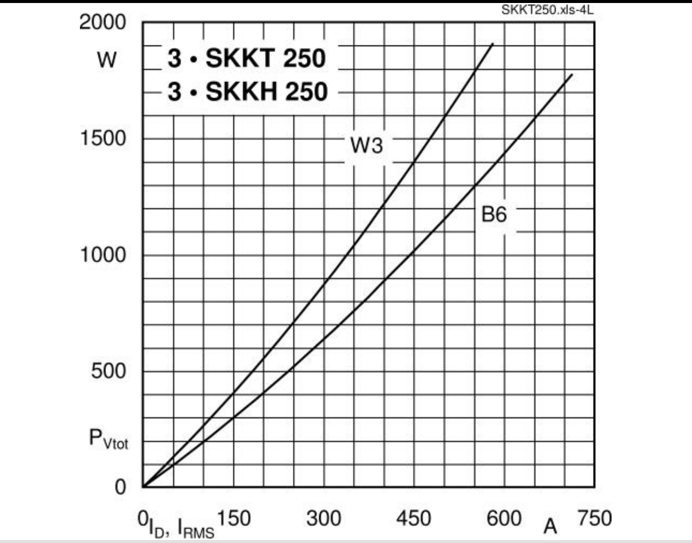


Fig. 4L Power dissipation of three modules vs. direct and rms current

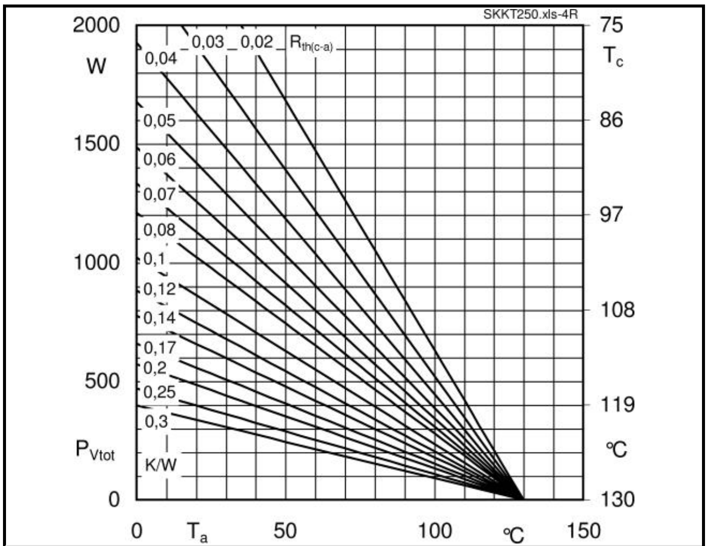


Fig. 4R Power dissipation of three modules vs. case temp.

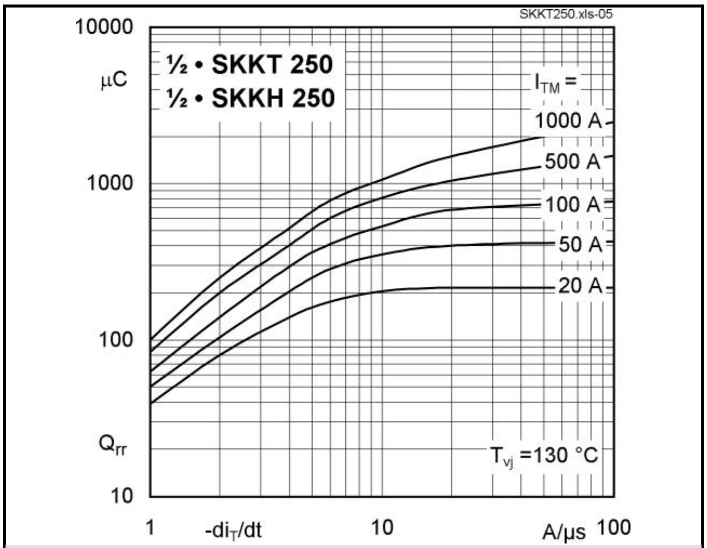


Fig. 5 Recovered charge vs. current decrease

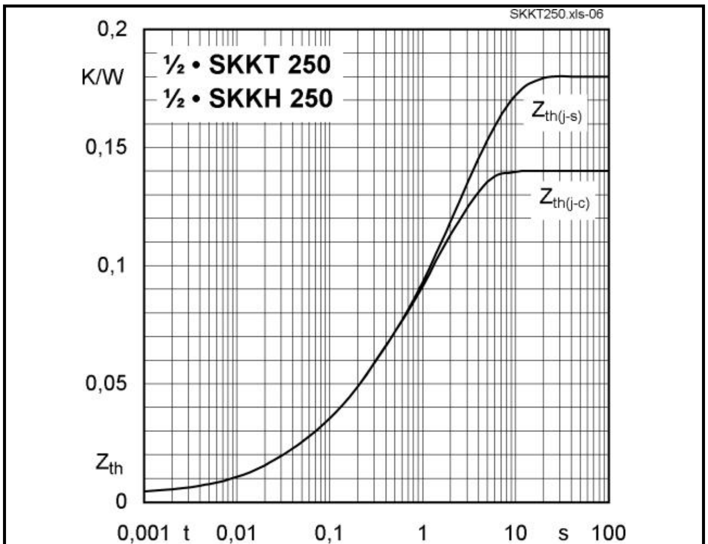


Fig. 6 Transient thermal impedance vs. time

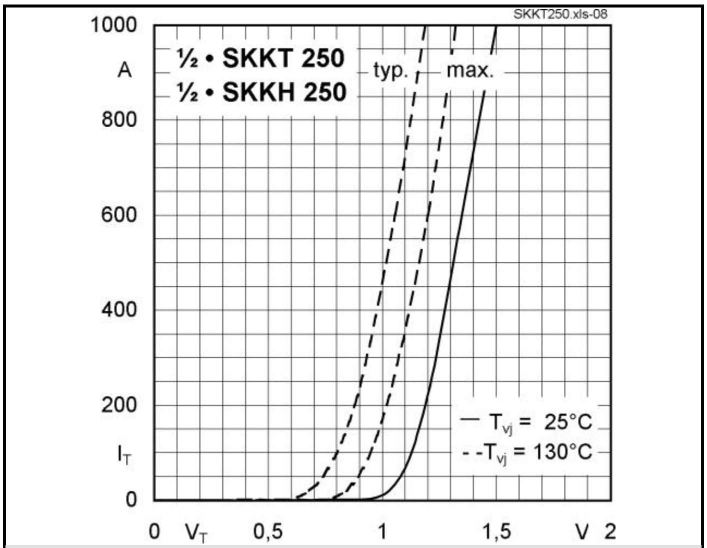


Fig. 7 On-state characteristics

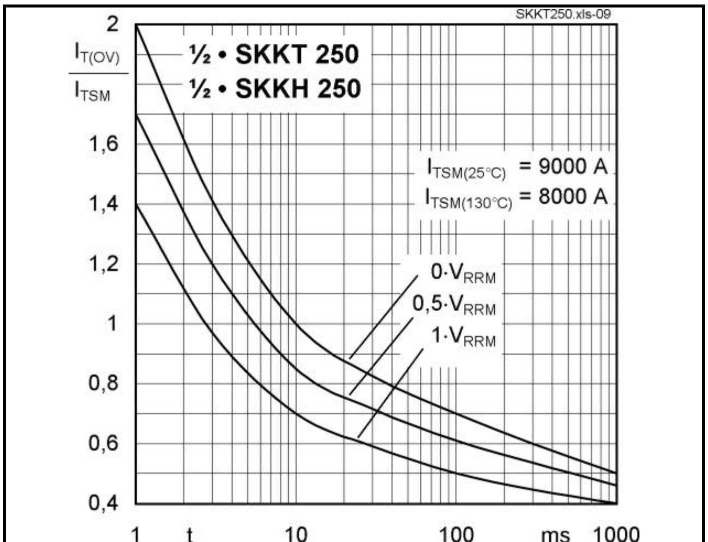


Fig. 8 Surge overload current vs. time

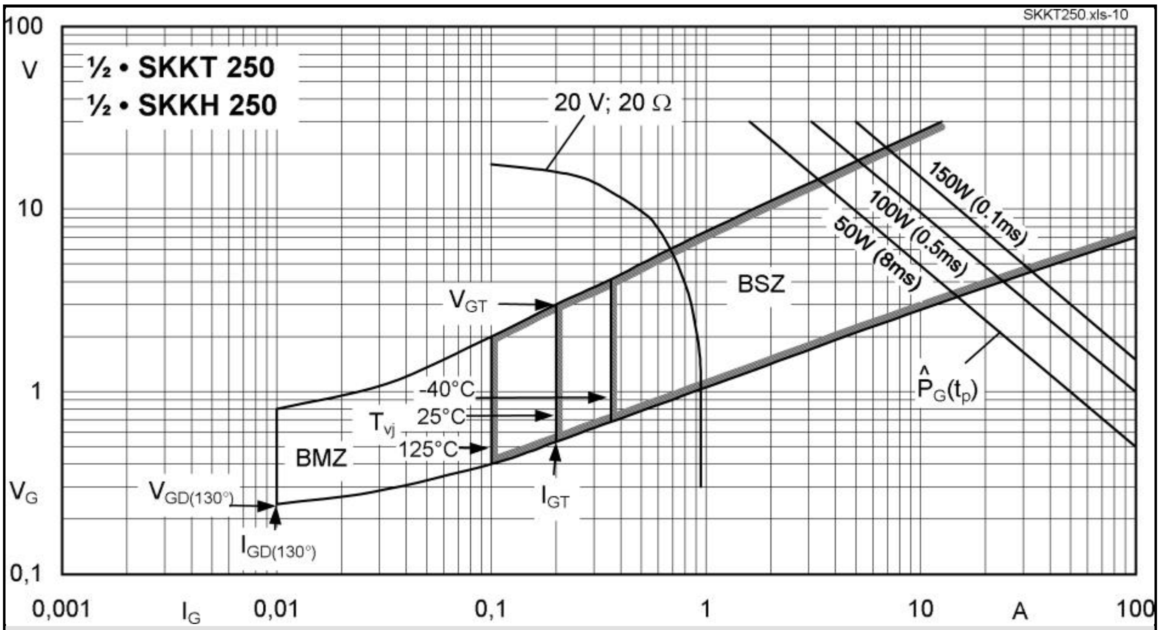
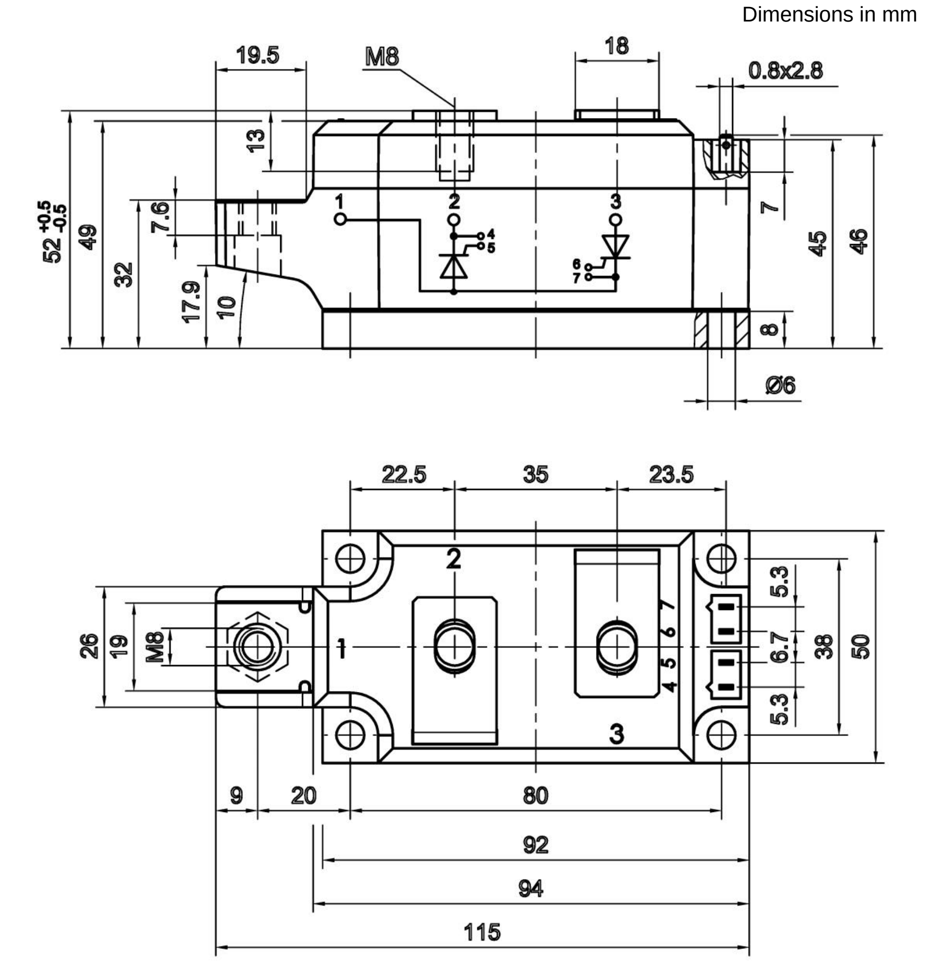
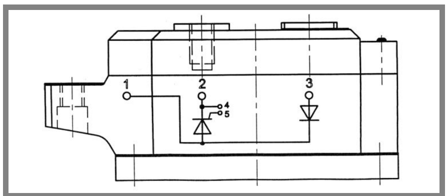


Fig. 9 Gate trigger characteristics



Case A 73b (SKKT)



Case A 76b SKKH

* 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.

