

# SKKT 273; SKKH 273



**SEMIPACK<sup>®</sup> 3**

## Thyristor / Diode Modules

**SKKT 273**

**SKKH 273**

### Features

- Industrial standard package
- Electrically insulated base plate
- Heat transfer through aluminum oxide ceramic insulated metal base plate
- Chip soldered on direct copper bonded Al<sub>2</sub>O<sub>3</sub> ceramic
- Thyristor with center gate
- UL recognition applied for file no. E63532

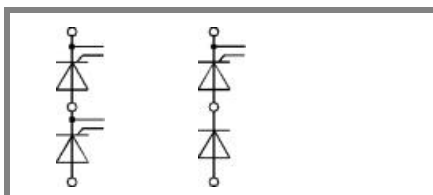
### Typical Applications\*

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

1) See the assembly instructions

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 450$ A (maximum value for continuous operation) $I_{TAV} = 273$ A (sin. 180; $T_c = 85$ °C)	
1300	1200	SKKT 273/12E	SKKH 273/12E
1700	1600	SKKT 273/16E	SKKH 273/16E
1900	1800	SKKT 273/18E	SKKH 273/18E

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85$ (100) °C;	273 (202)	A
$I_{TSM}$	$T_{vj} = 25$ °C; 10 ms $T_{vj} = 130$ °C; 10 ms	9000 8000	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms $T_{vj} = 130$ °C; 8,3 ... 10 ms	405000 320000	A <sup>2</sup> s 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. 0,9	V
$r_T$	$T_{vj} = 130$ °C	max. 0,92	mΩ
$I_{DD}, I_{RD}$	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$	max. 100	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. 130	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 130$ °C	max. 1000	V/μs
$t_q$	$T_{vj} = 130$ °C, typ.	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. 2	V
$I_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 150	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	0,104 / 0,052	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,108 / 0,054	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,122 / 0,061	K/W
$R_{th(c-s)}$	per thyristor / per module	0,08 / 0,04	K/W
$T_{vj}$		- 40 ... + 130	°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	9 ± 15 %	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	410	g
Case	SKKT SKKH	A 43a A 56a	



**SKKT**

**SKKH**

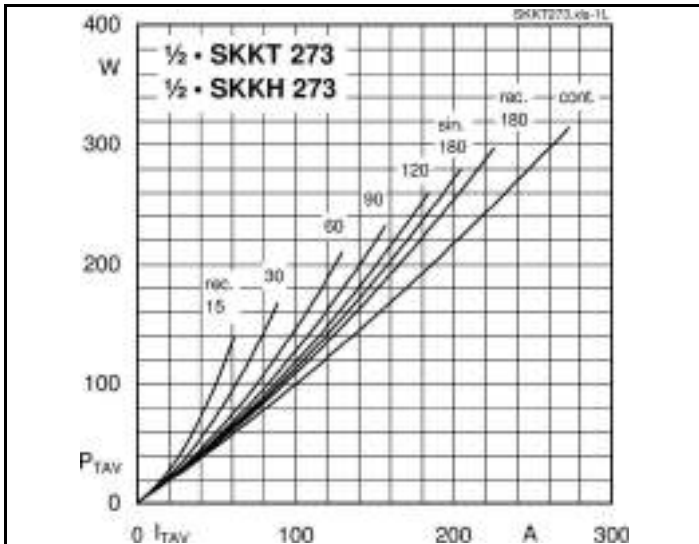


Fig. 1L Power dissipation per thyristor vs. on-state current

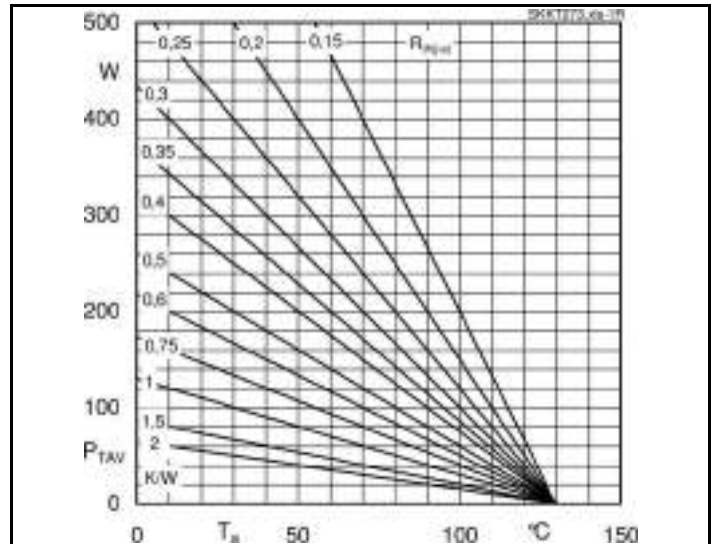


Fig. 1R Power dissipation per thyristor vs. ambient temp.

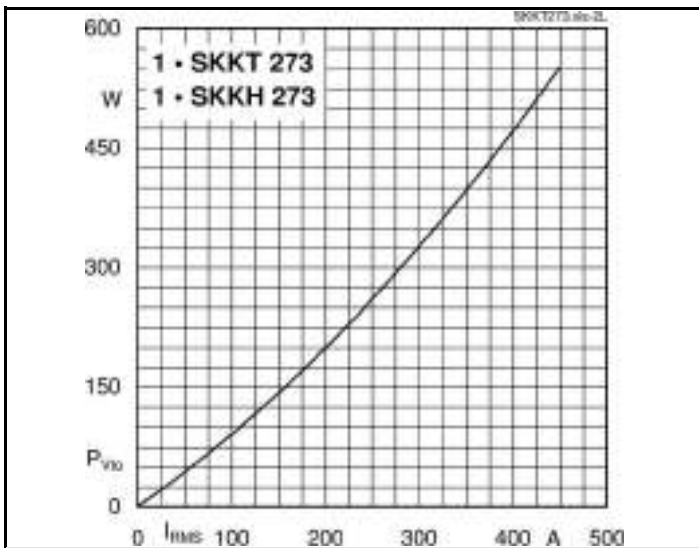


Fig. 2L Power dissipation per module vs. rms current

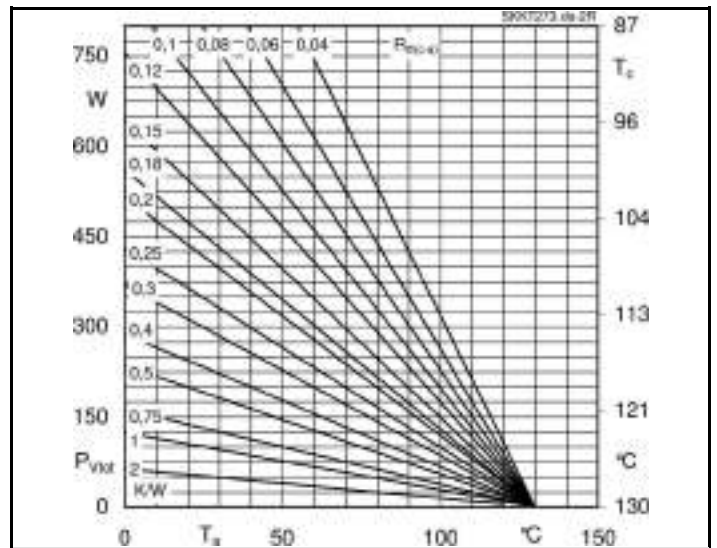


Fig. 2R Power dissipation per module vs. case temp.

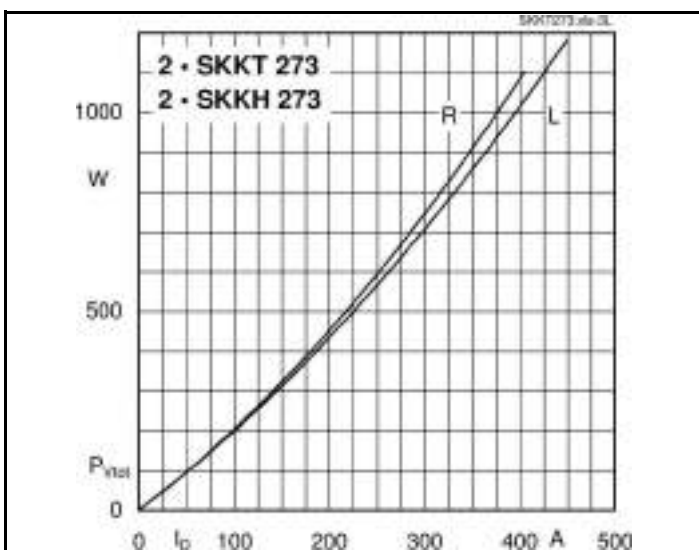


Fig. 3L Power dissipation of two modules vs. direct current

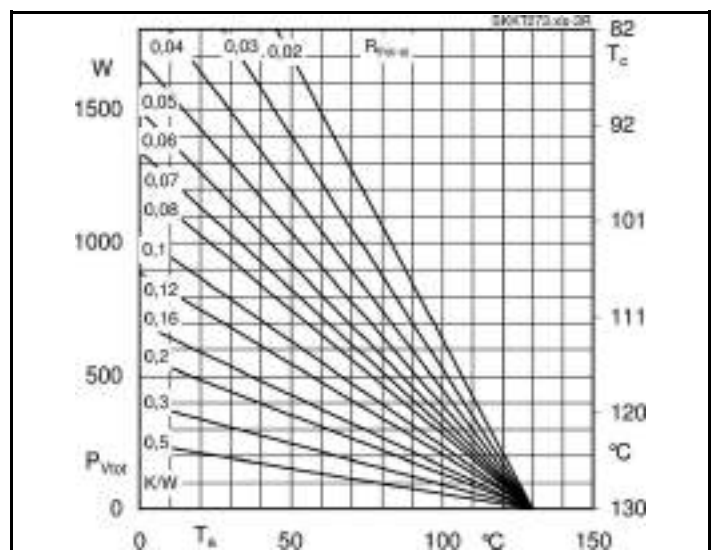
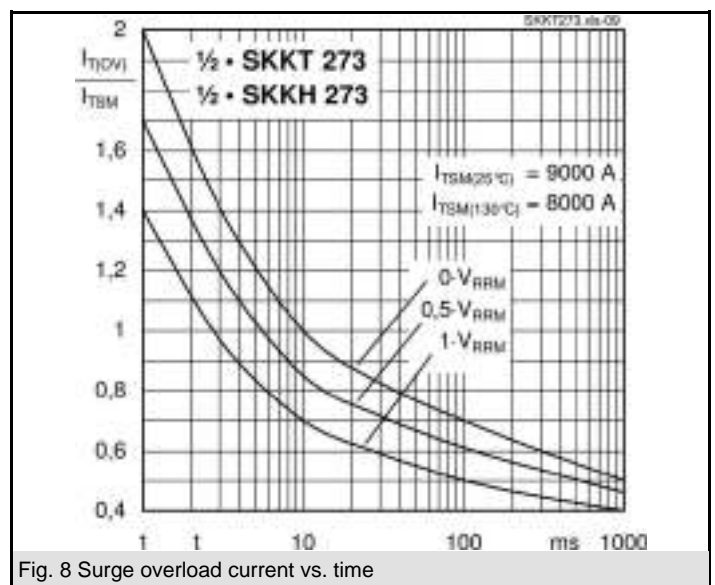
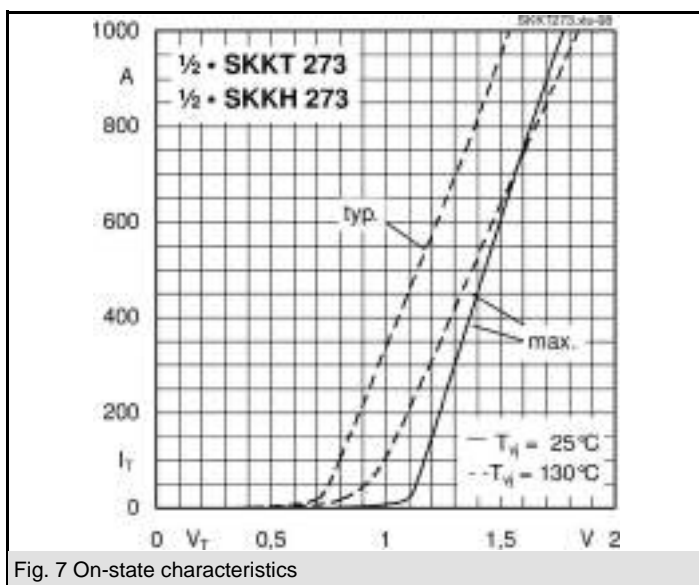
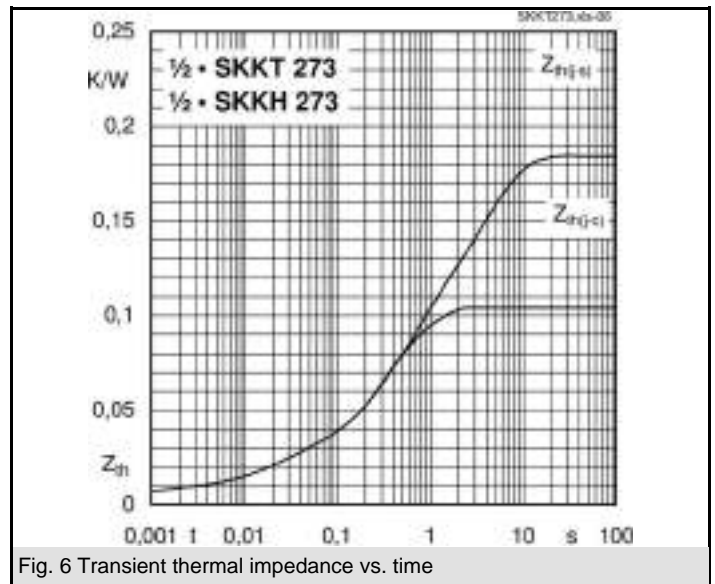
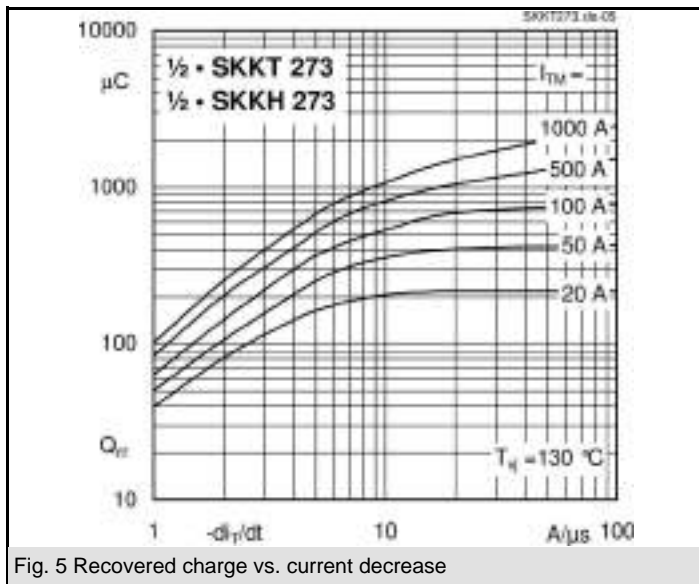
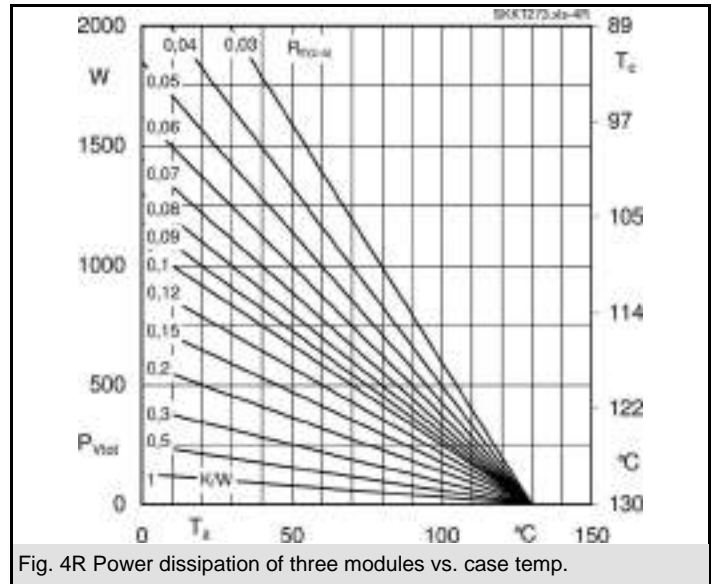
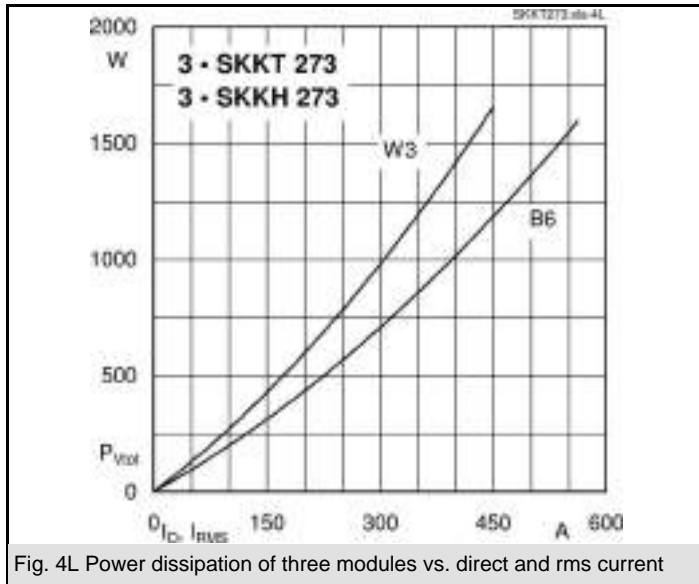


Fig. 3R Power dissipation of two modules vs. case temp.

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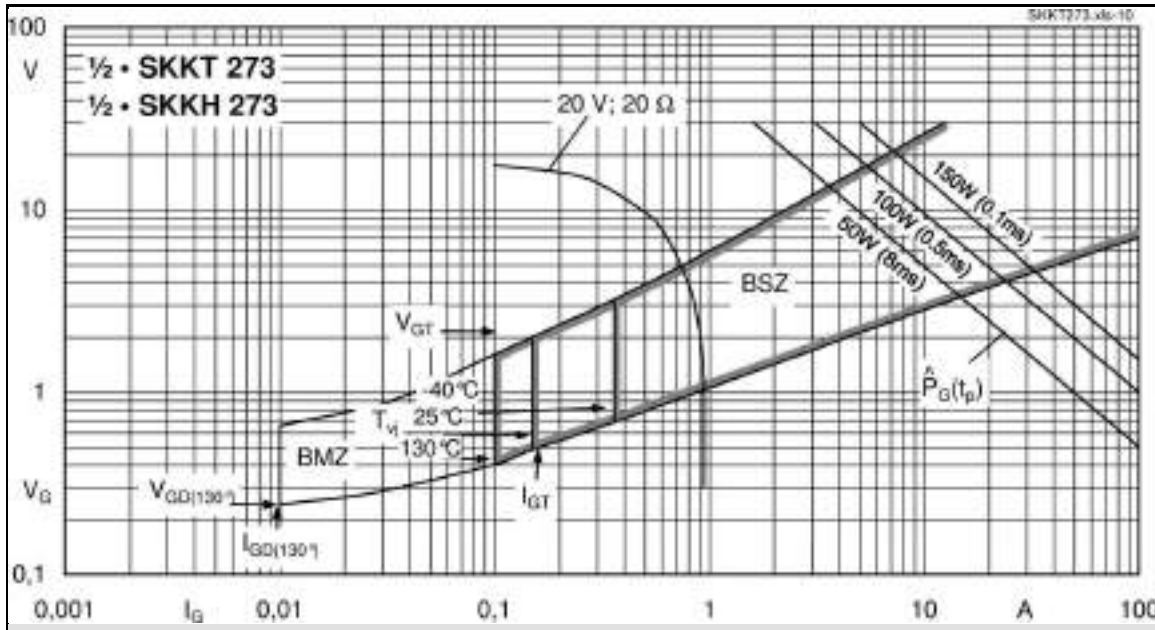
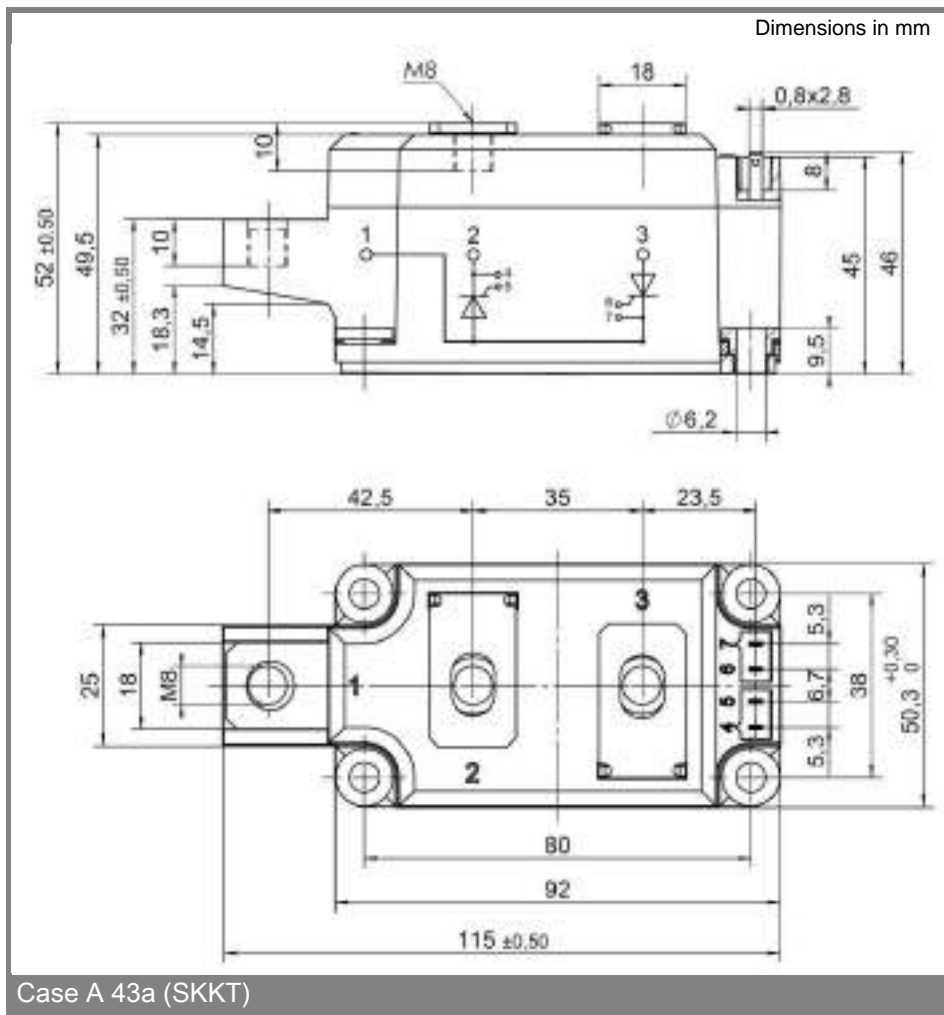
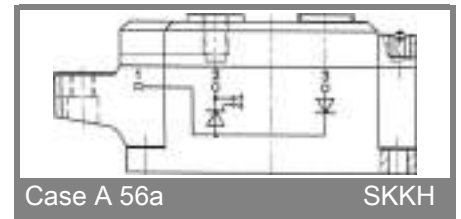


Fig. 9 Gate trigger characteristics



Case A 43a (SKKT)



\* 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 personal.