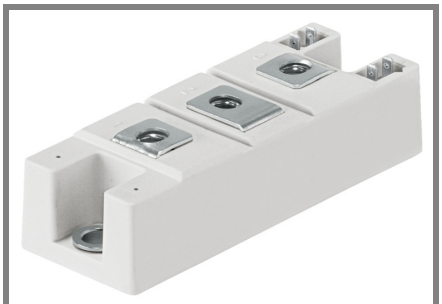
SKKT 172, SKKH 172



SEMIPACK® 2

Thyristor / Diode Modules

SKKH 172

SKKT 172

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*

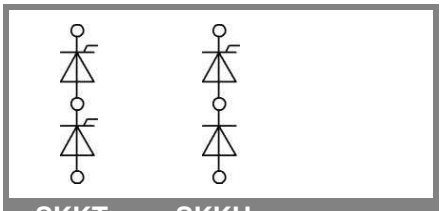
- DC motor control (e.g. for machine tools)
- AC motor soft starters

1) Characteristic values

2) See the assembly instructions

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{TRMS} = 275 A (maximum value for continuous operation) I_{TAV} = 172 A (sin.180; T_c = 86 °C)		
1700	1600	SKKT 172/16 E	SKKH 172/16 E	
1900	1800	SKKT 172/18 E	SKKH 172/18 E	

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 85 (100) °C;	175 (124)	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	5400	A
	T_{vj} = 125 °C; 10 ms	5000	A
i²t	T_{vj} = 25 °C; 8,3 ... 10 ms	145000	A²s
	T_{vj} = 125 °C; 8,3 ... 10 ms	125000	A²s
V_T	T_{vj} = 25 °C; I_T = 500 A	max. 1,41	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 0,83	V
r_T	T_{vj} = 125 °C	max. 1,3	mΩ
$V_{T(TO)(typ.)}$ 1)	T_{vj} = 125 °C	0,8	V
$r_{T(typ.)}$ 1)	T_{vj}= 125°C	1,2	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 40	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} = 125 °C	max. 200	A/µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 1000	V/µs
t_q	T_{vj} = 125 °C ,	typ. 175	µs
I_H	T_{vj} = 25 °C; typ. / max.	150 / 400	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ. / max.	300 / 1000	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} = 125 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 125 °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,155 / 0,078	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,164 / 0,082	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,18 / 0,09	K/W
$R_{th(c-s)}$	per thyristor / per module	0,1 / 0,05	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 % 2)	Nm
M_t	to terminal	5 ± 15 %	Nm
a		5 * 9,81	m/s²
m	approx.	165	g
Case	SKKT	A 21	
	SKKH	A 22	



SKKT SKKH

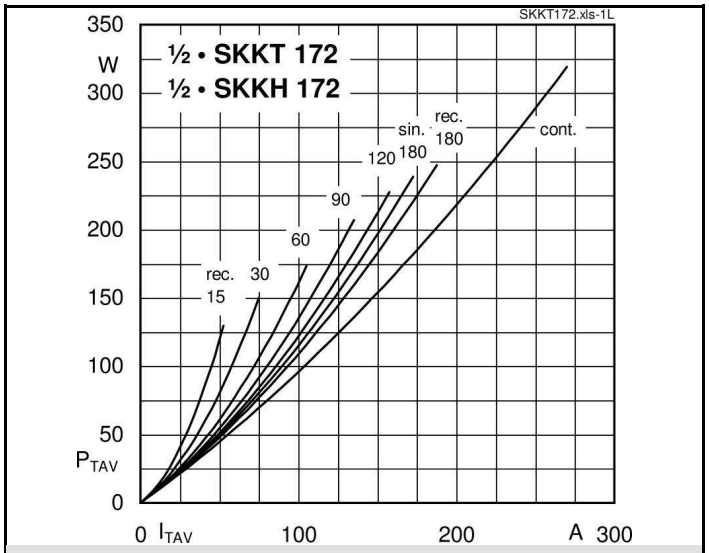


Fig. 1L Power dissipation per thyristor vs. on-state current

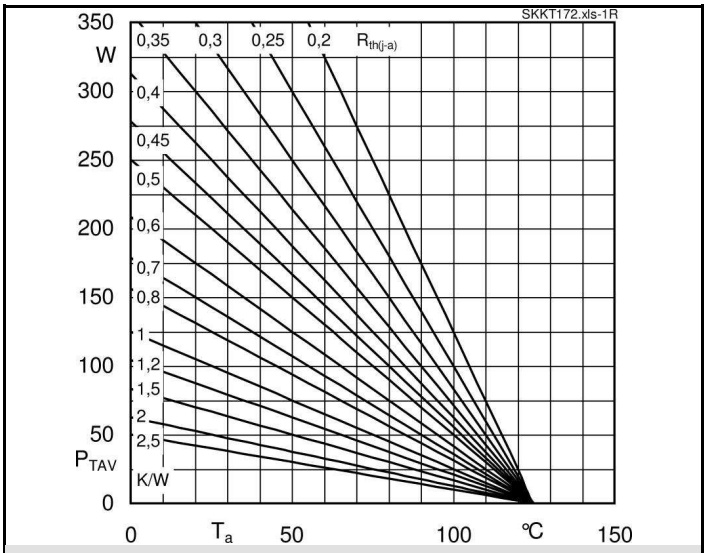


Fig. 1R Power dissipation per thyristor vs. ambient temp.

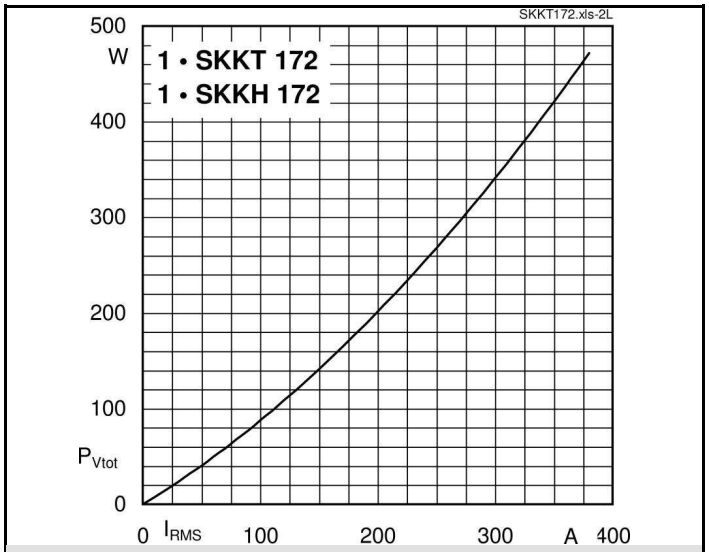


Fig. 2L Power dissipation per module vs. rms current

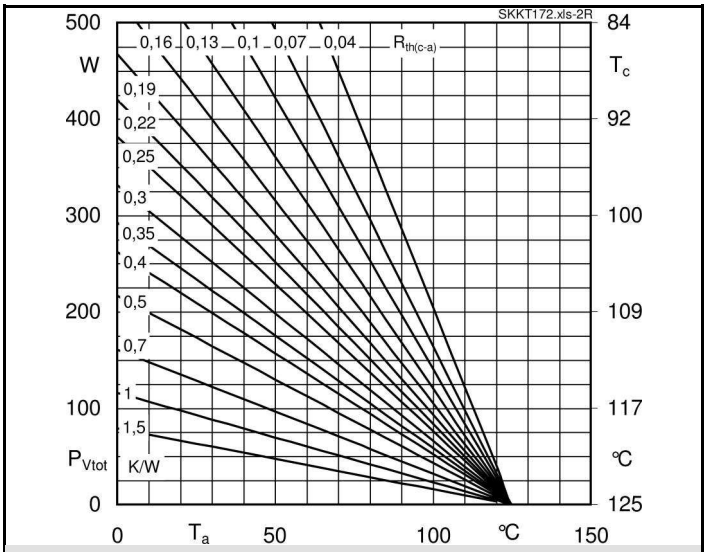


Fig. 2R Power dissipation per module vs. case temp.

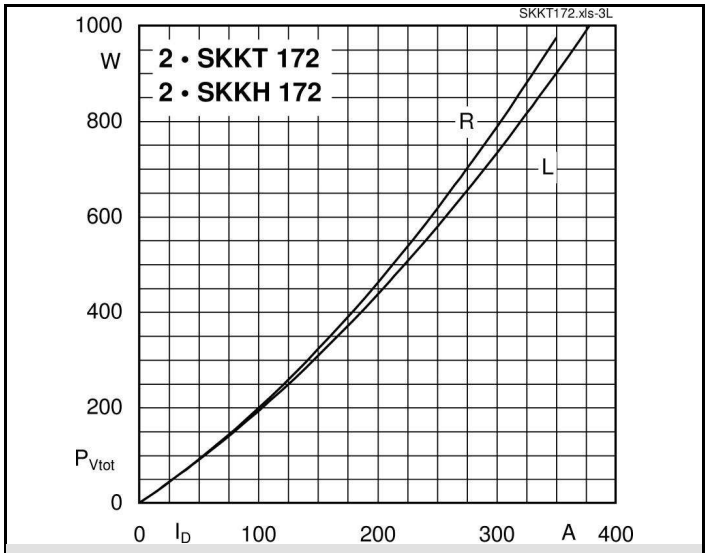


Fig. 3L Power dissipation of two modules vs. direct current

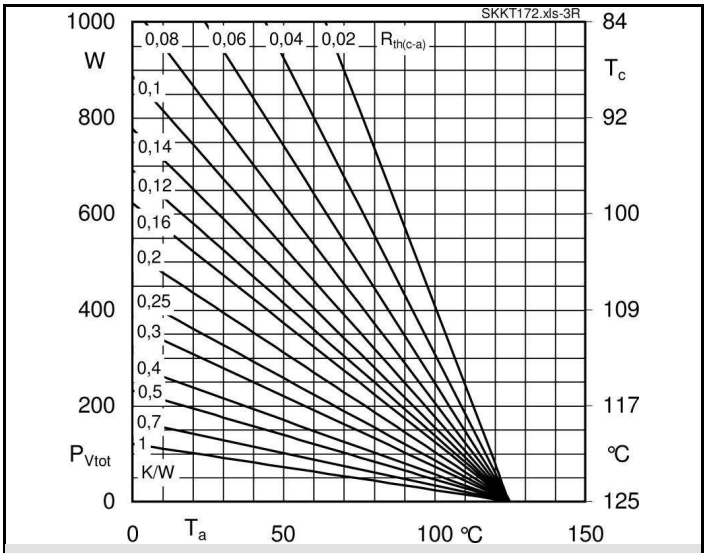


Fig. 3R Power dissipation of two modules vs. case temp.

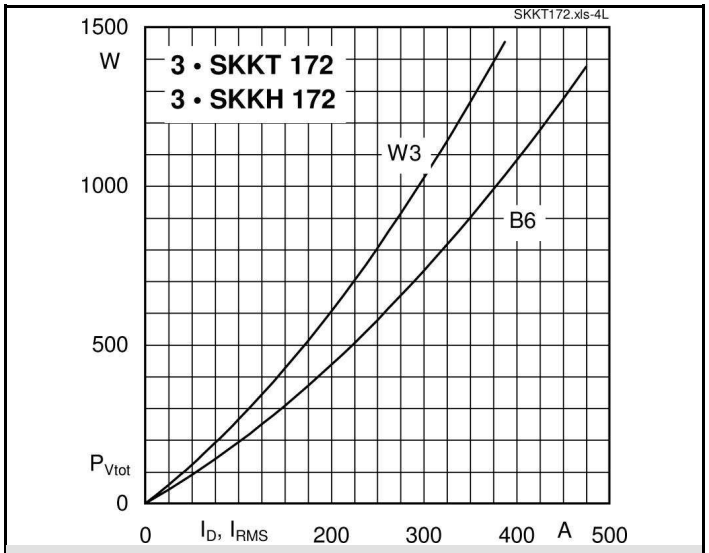


Fig. 4L Power dissipation of three modules vs. direct and rms current

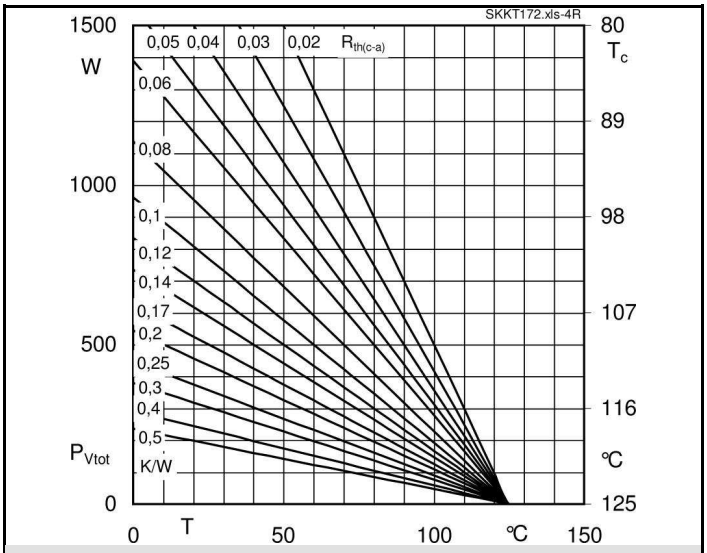


Fig. 4R Power dissipation of three modules vs. case temp.

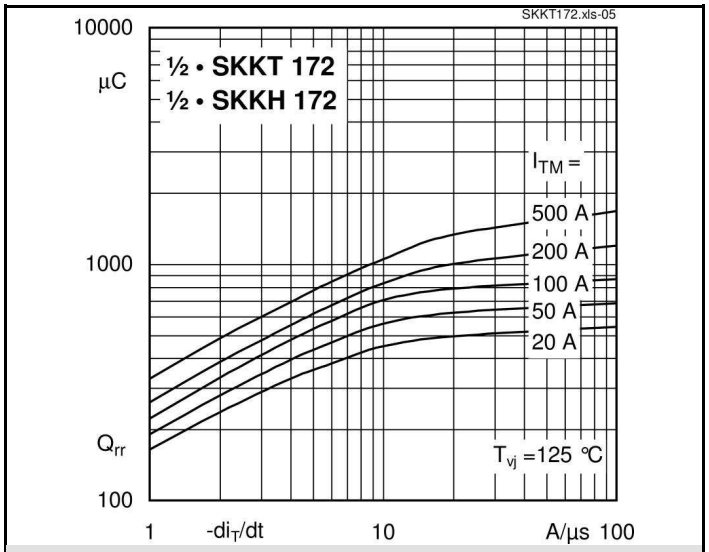


Fig. 5 Recovered charge vs. current decrease

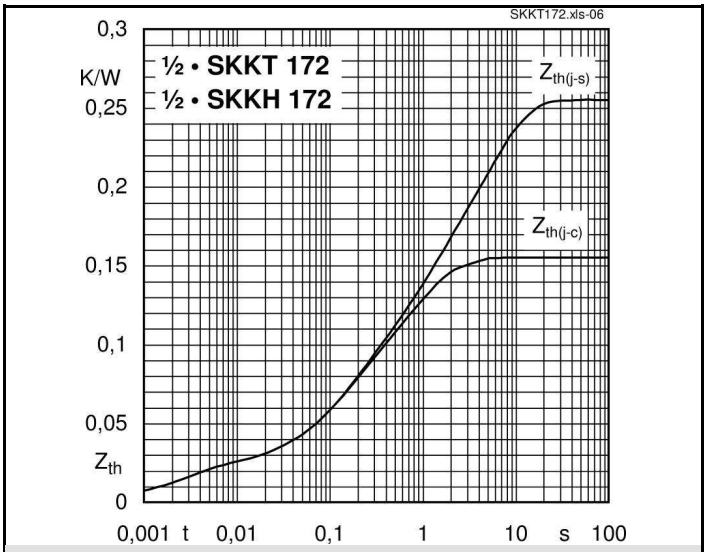


Fig. 6 Transient thermal impedance vs. time

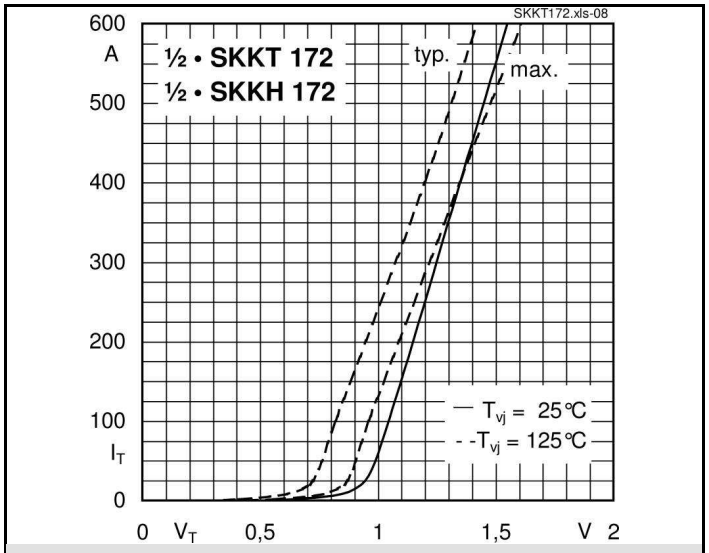


Fig. 7 On-state characteristics

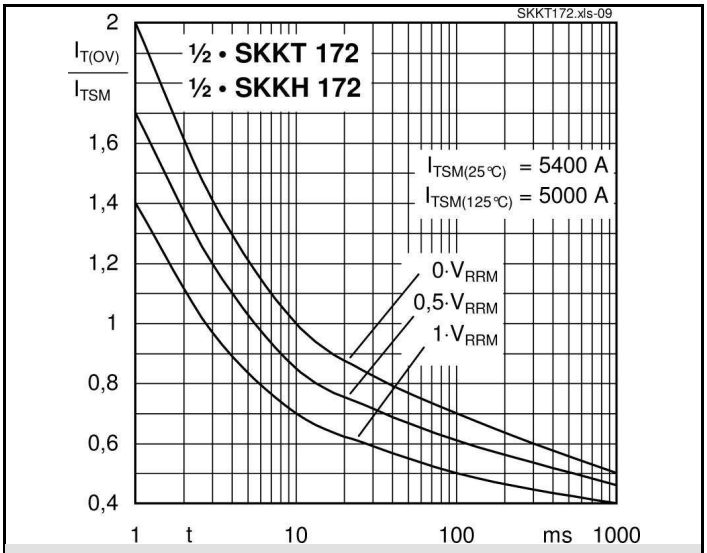


Fig. 8 Surge overload current vs. time

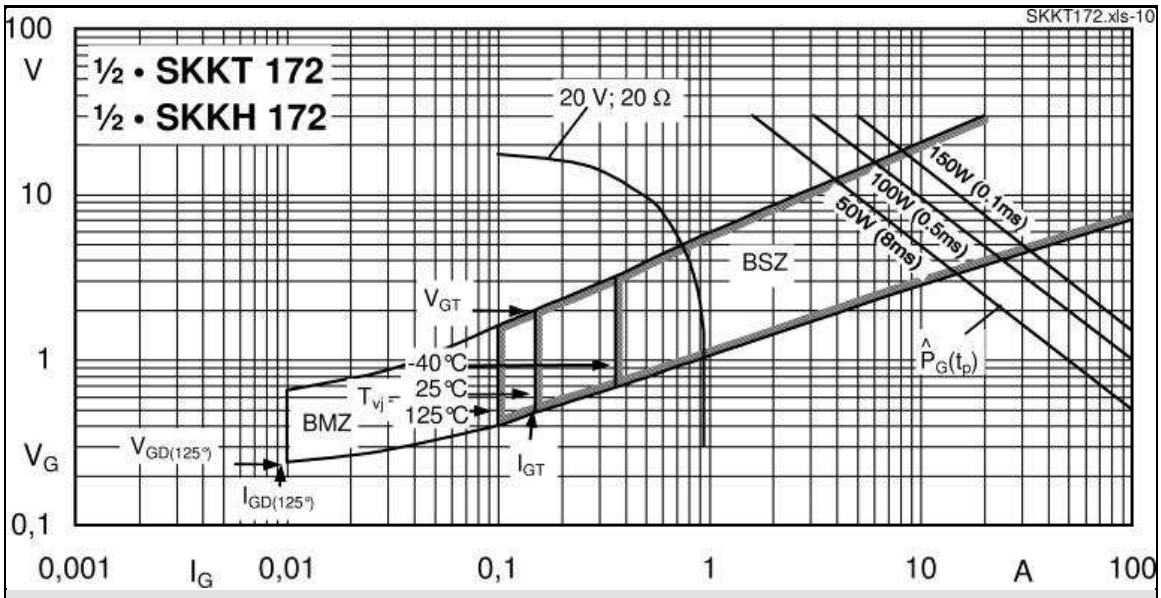
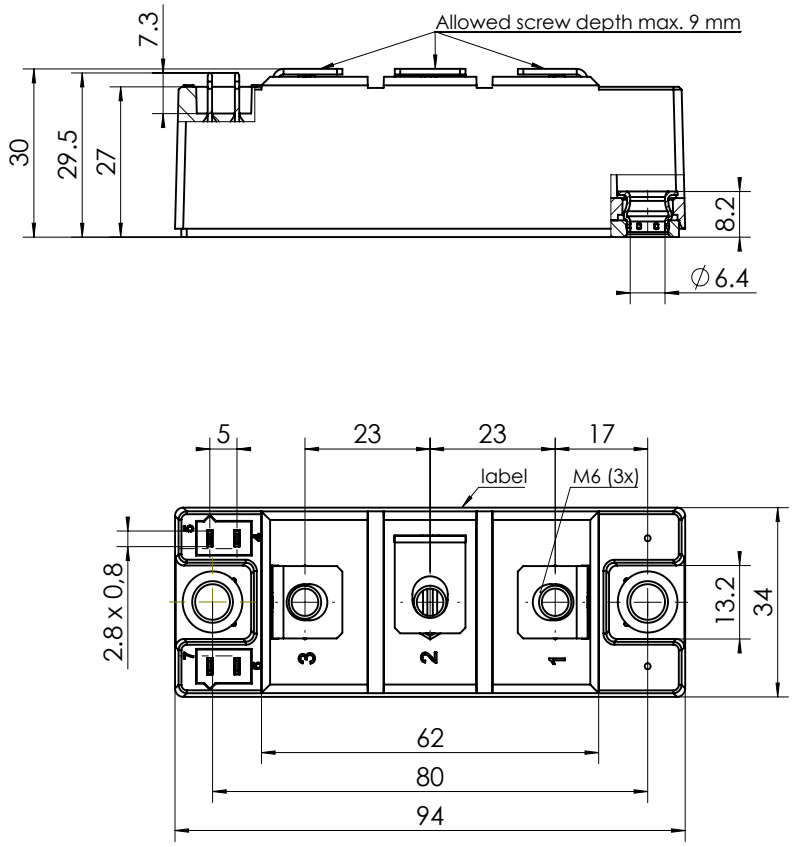
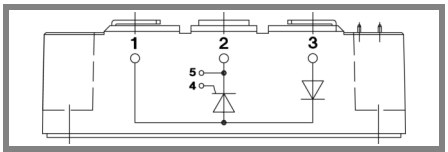


Fig. 9 Gate trigger characteristics

Dimensions in mm
General tolerance ±0.5 mm



Case A 21 (SKKT)



Case A 22 SKKH

IMPORTANT INFORMATION AND WARNINGS

This is an electrostatic discharge sensitive device (ESDS) according to international standard IEC 61340.

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