SKKT 20, SKKT 20B

THYRISTOR BRIDGE,SCR BRIDGE

SEMIPACK® 1

Thyristor / Diode Modules

SKKT 20

SKKT 20B

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63 532

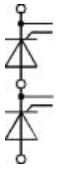
Typical Applications

- DC motor control (e. g. for machine tools)
- AC motor soft starters
- 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} = 40 A (maximum value for continuous operation) I_{TAV} = 20 A (sin. 180; T_c = 80 °C)	
900	800	SKKT 20/08E	SKKT 20B08E
1300	1200	SKKT 20/12E	SKKT 20B12E
1500	1400	SKKT 20/14E	SKKT 20B14E
1700	1600	SKKT 20/16E	SKKT 20B16E

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; T_c = 85 (100) °C;	18 (13)	A
I_D	P3/180; T_a = 45 °C; B2 / B6	31 / 38	A
	P3/180F; T_a = 35 °C; B2 / B6	46 /60	A
I_{RMS}	P3/180; T_a = 45 °C; W1 / W3	42 / 3 * 30	A
I_{TSM}	T_{vj} = 25 °C; 10 ms	320	A
	T_{vj} = 125 °C; 10 ms	280	A
i^2t	T_{vj} = 25 °C; 8,3 ... 10 ms	510	A^2s
	T_{vj} = 125 °C; 8,3 ... 10 ms	390	A^2s
V_T	T_{vj} = 25 °C; I_T = 75 A	max. 2,3	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 1	V
r_T	T_{vj} = 125 °C	max. 16	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{RD} = V_{RRM}; V_{DD} = V_{DRM}	max. 10	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}	1	µs
$(di/dt)_{cr}$	T_{vj} = 125 °C	max. 150	A/µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 1000	V/µs
t_q	T_{vj} = 125 °C ,	80	µs
I_H	T_{vj} = 25 °C; typ. / max.	100 / 200	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ. / max.	250 / 400	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	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. 5	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	1,2 / 0,6	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	1,3 / 0,65	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	1,35 / 0,68	K/W
$R_{th(c-s)}$	per thyristor / per module	0,2 / 0,1	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 %[1)]	Nm
M_t	to terminal	3 ± 15 %	Nm
a		5 * 9,81	m/s^2
m	approx.	95	g
Case	SKKT	A 46	
	SKKT ...B	A 48	



SKKT

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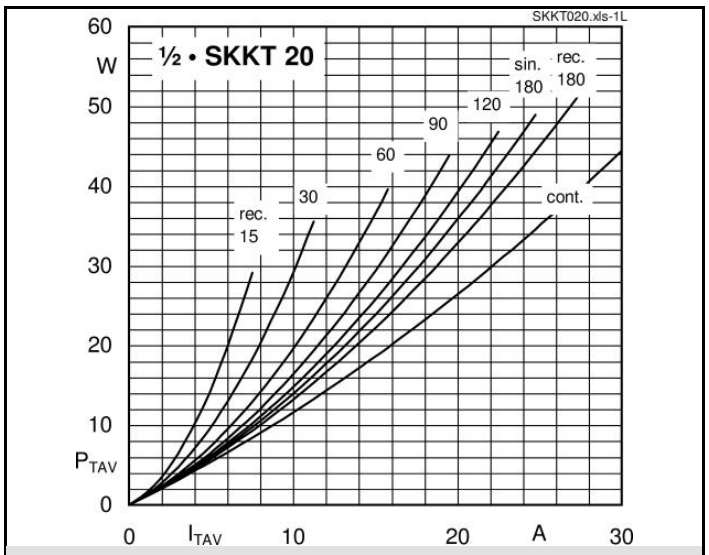

Fig. 1L Power dissipation per thyristor vs. on-state current

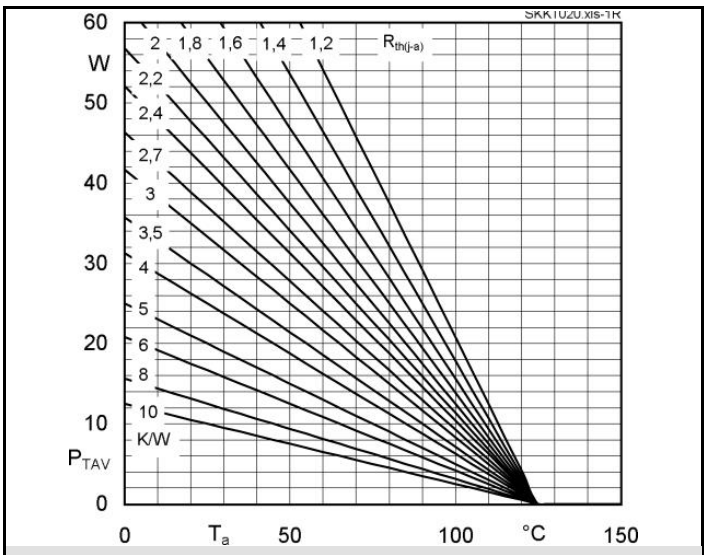

Fig. 1R Power dissipation per thyristor vs. ambient temp.

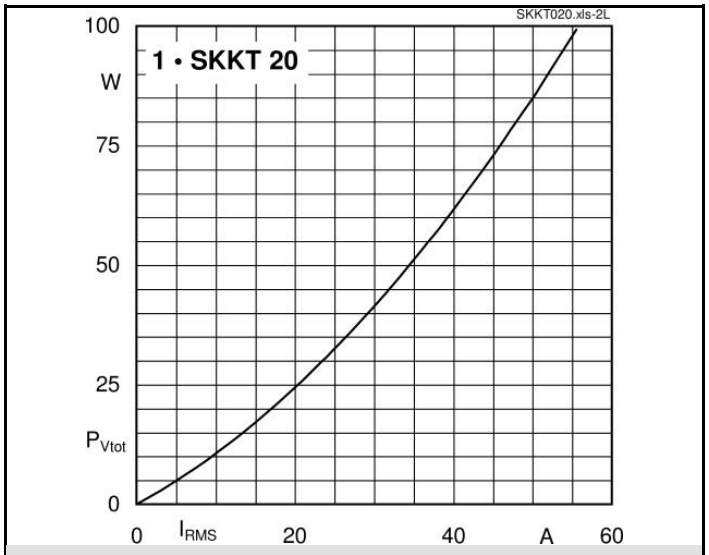

Fig. 2L Power dissipation per module vs. rms current

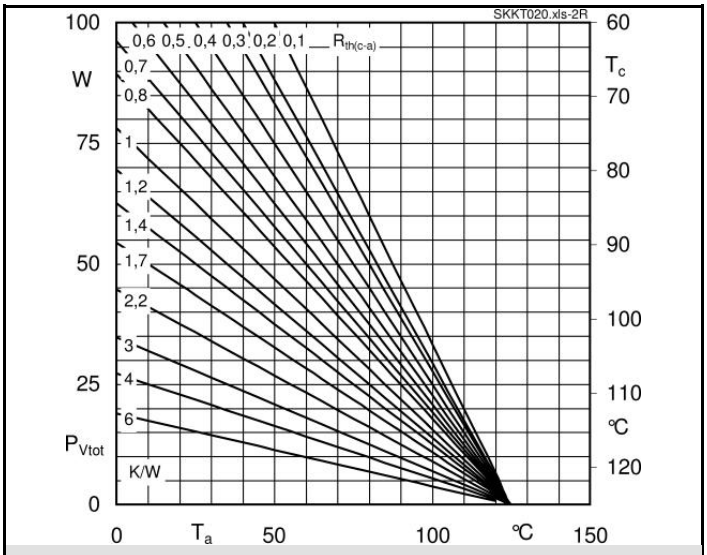

Fig. 2R Power dissipation per module vs. case temp.

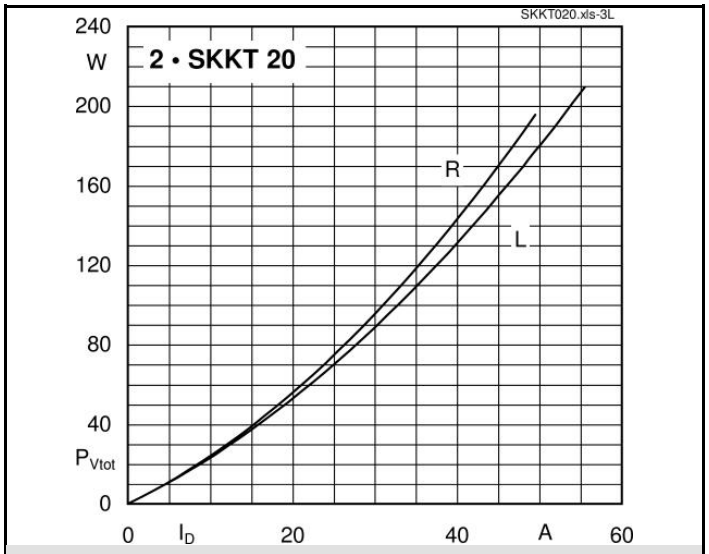

Fig. 3L Power dissipation of two modules vs. direct current

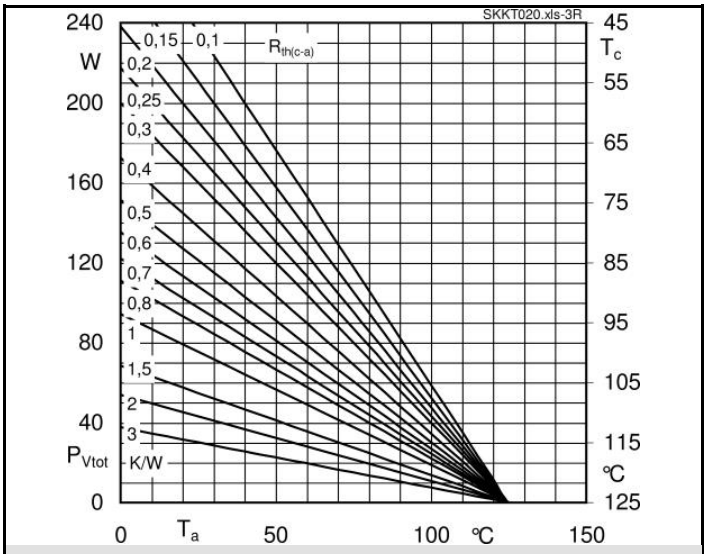

Fig. 3R Power dissipation of two modules vs. case temp.

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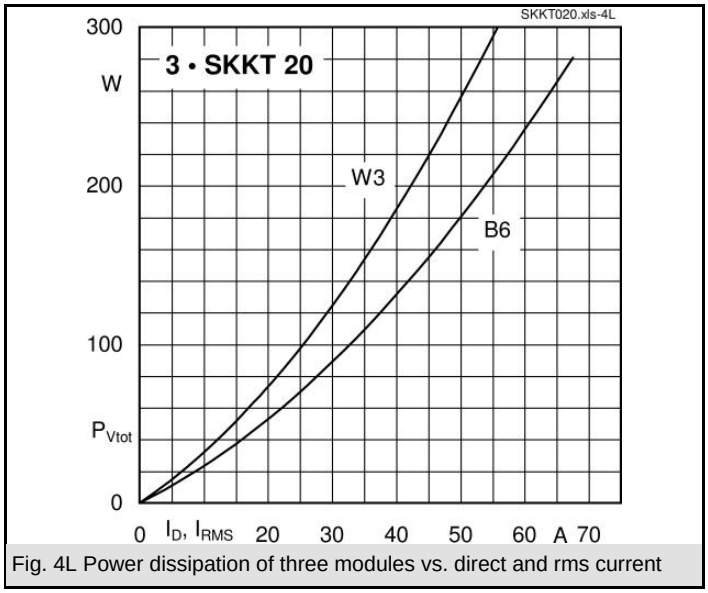

Fig. 4L Power dissipation of three modules vs. direct and rms current

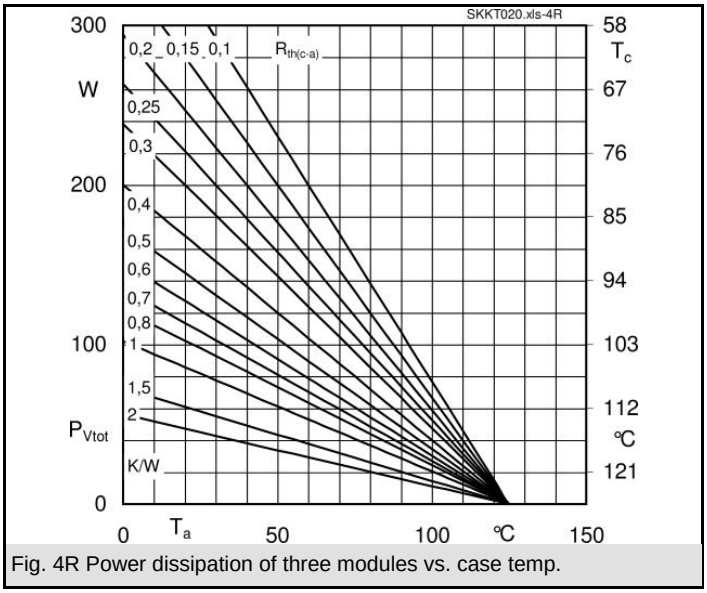

Fig. 4R Power dissipation of three modules vs. case temp.

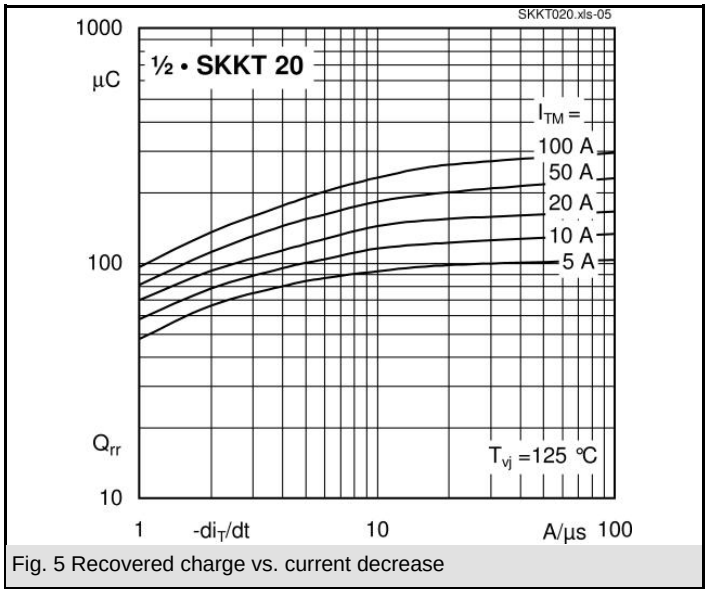

Fig. 5 Recovered charge vs. current decrease

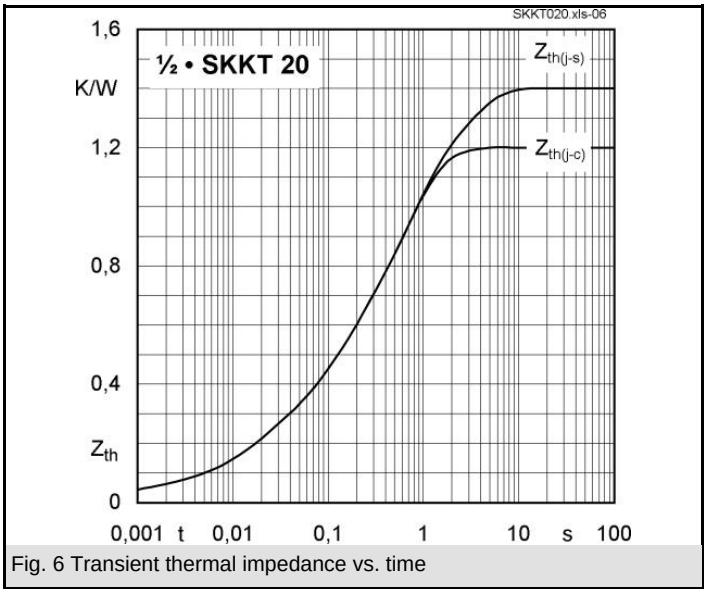

Fig. 6 Transient thermal impedance vs. time

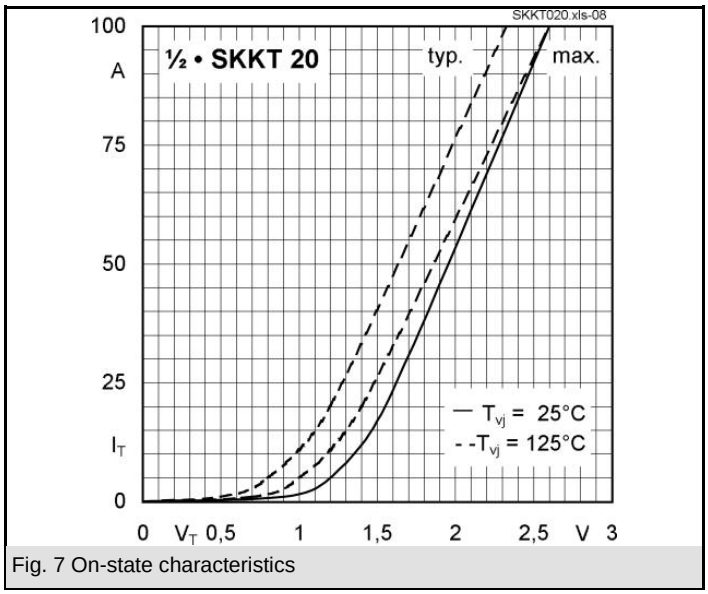

Fig. 7 On-state characteristics

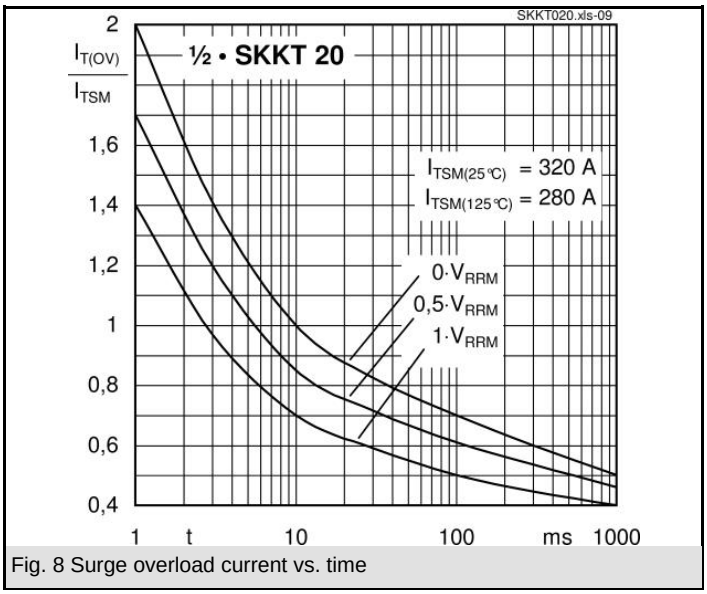

Fig. 8 Surge overload current vs. time

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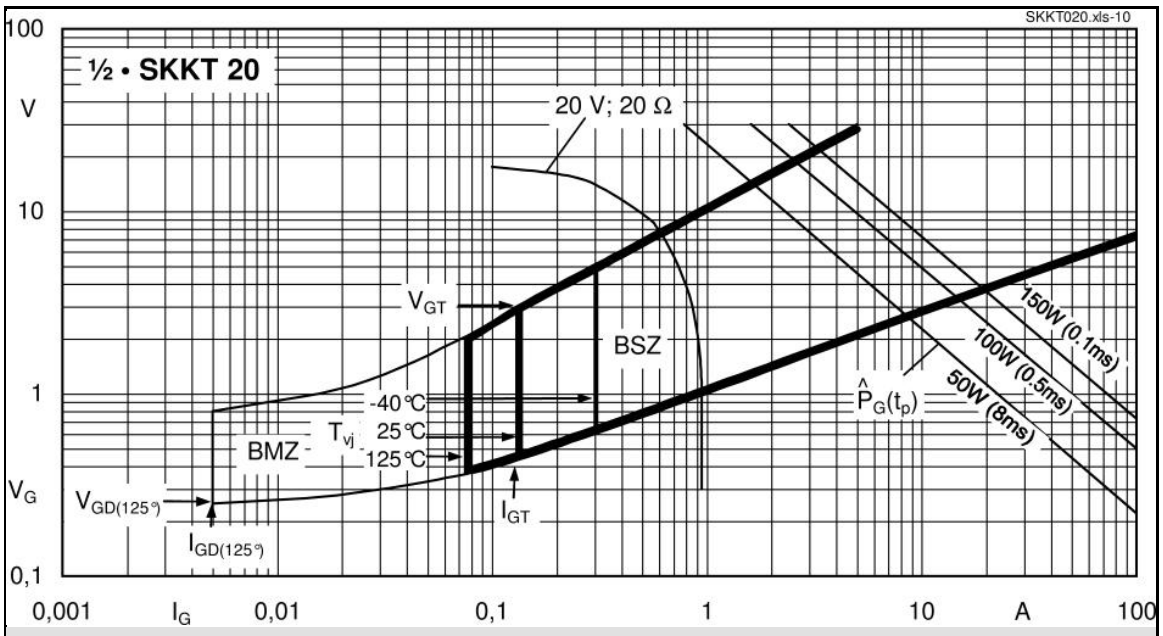
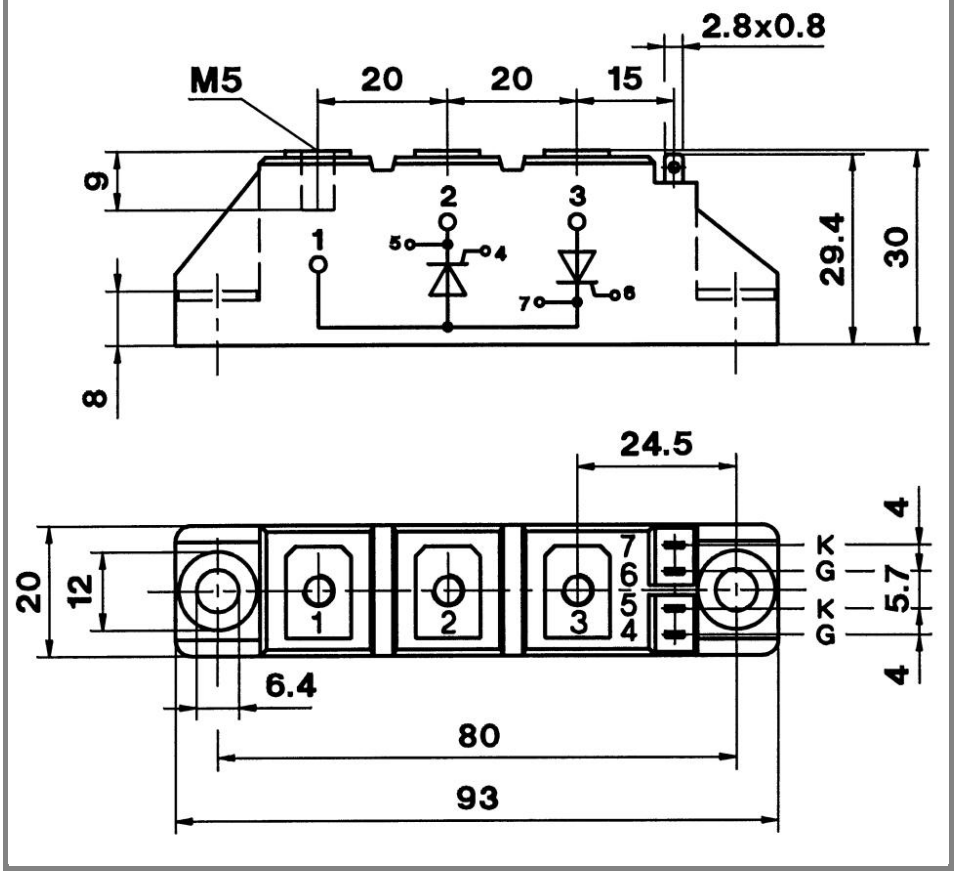
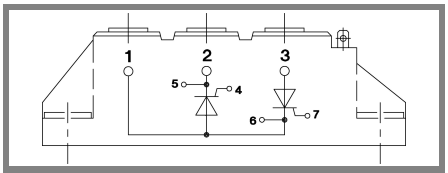


Fig. 9 Gate trigger characteristics

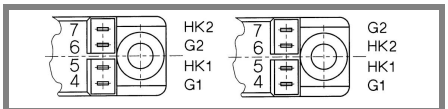
Dimensions in mm



Case A 46 (SKKT)



Case A 48 SKKT ...B



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