

# SKKT 500, SKKH 500



SEMIPACK® 5

## Thyristor / Diode Modules

SKKT 500  
SKKH 500

### Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- UL recognized, file no. E 63 532

### Typical Applications

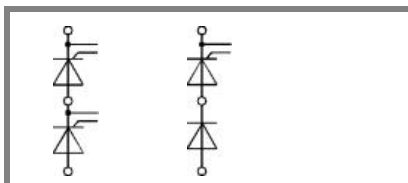
- AC motor softstarters
- Input converters for AC inverter drives
- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instructions

2) The screws must be lubricated

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 920$ A (maximum value for continuous operation) $I_{TAV} = 500$ A (sin. 180; $T_c = 89$ °C)	
900	800	SKKT 500/08E	SKKH 500/08E
1300	1200	SKKT 500/12E	SKKH 500/12E
1500	1400	SKKT 500/14E	SKKH 500/14E
1700	1600	SKKT 500/16E	SKKH 500/16E
1900	1800	SKKT 500/18E	SKKH 500/18E

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85$ (100) °C;	540 (390)	A
$I_D$	P16/200F; $T_a = 35$ °C; B2 / B6	665 / 845	A
$I_{RMS}$	P16/300F; $T_a = 35$ °C; W1 / W3	850 / 3 * 670	A
$I_{TSM}$	$T_{vj} = 25$ °C; 10 ms	17000	A
	$T_{vj} = 130$ °C; 10 ms	15000	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms	1445000	A <sup>2</sup> s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	1125000	A <sup>2</sup> s
$V_T$	$T_{vj} = 25$ °C; $I_T = 1700$ A	max. 1,5	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	max. 0,925	V
$r_T$	$T_{vj} = 130$ °C	max. 0,27	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. 200	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 130$ °C	max. 1000	V/μs
$t_q$	$T_{vj} = 130$ °C	100 ... 200	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	0,062 / 0,031	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,065 / 0,032	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,07 / 0,035	K/W
$R_{th(c-s)}$	per thyristor / per module	0,02 / 0,01	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 % <sup>1)</sup>	Nm
$M_t$	to terminals	12 ± 15 % <sup>2)</sup>	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	1420	g
Case	SKKT	A 60 a	
	SKKH	A 66 a	



SKKT

SKKH

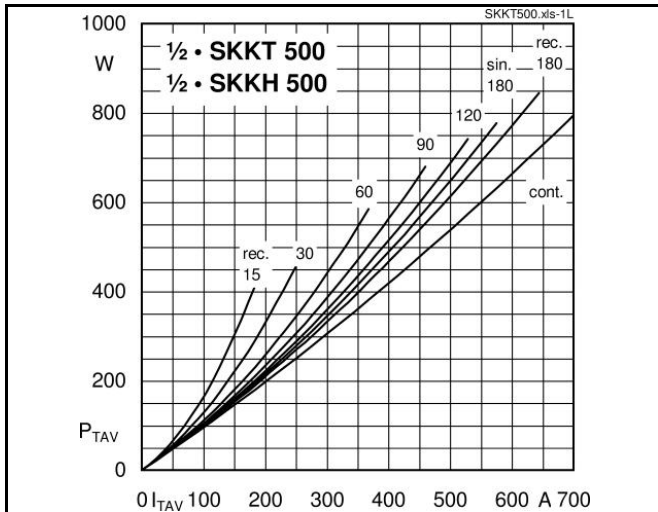


Fig. 1L Power dissipation per thyristor vs. on-state current

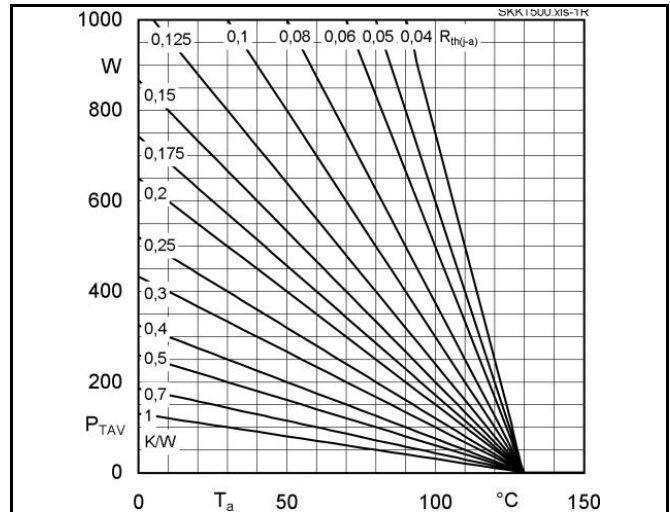


Fig. 1R Power dissipation per thyristor vs. ambient temp.

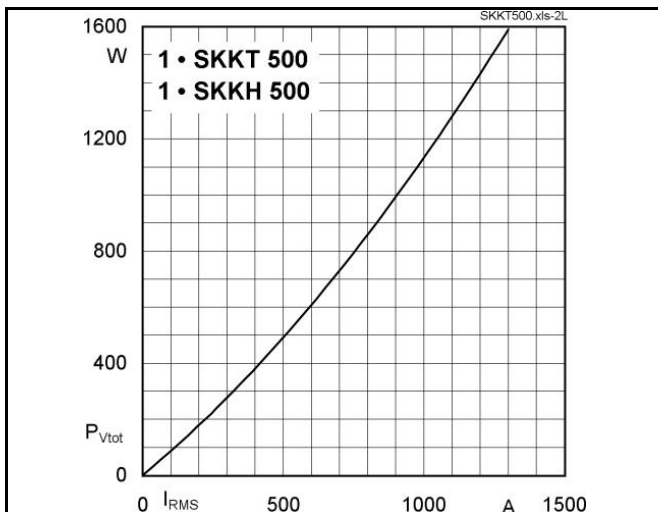


Fig. 2L Power dissipation per module vs. rms current

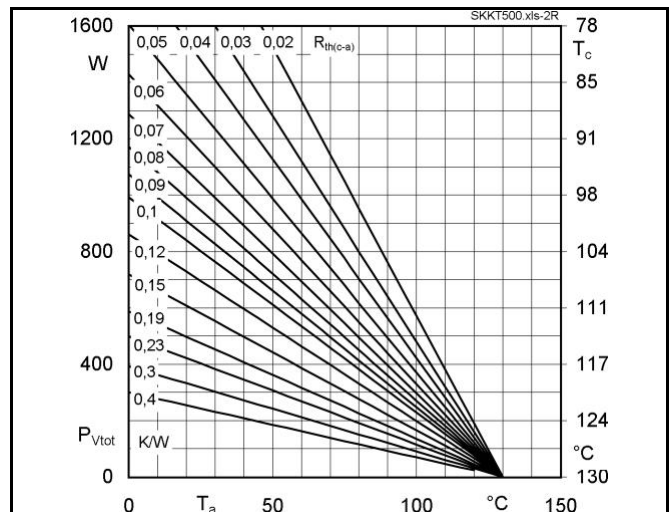


Fig. 2R Power dissipation per module vs. case temp.

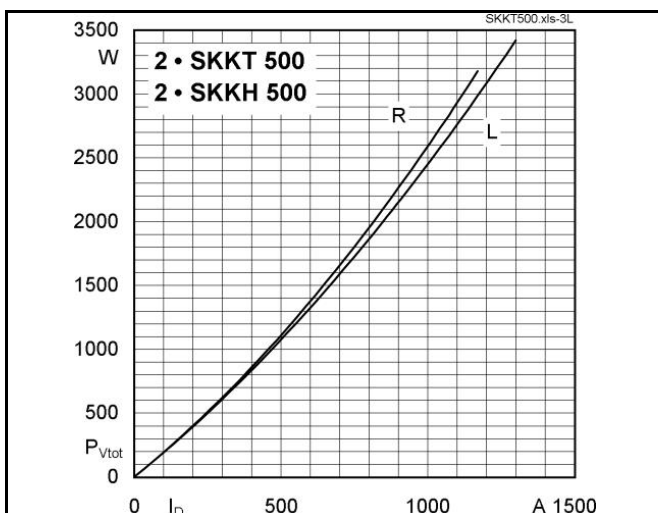


Fig. 3L Power dissipation of two modules vs. direct current

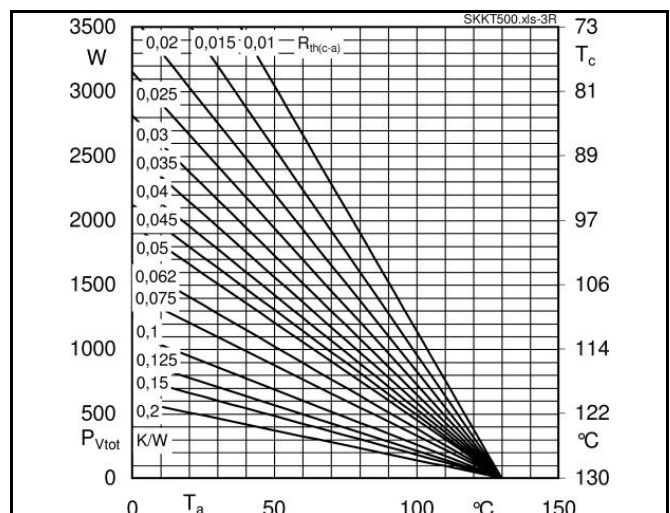


Fig. 3R Power dissipation of two modules vs. case temp.

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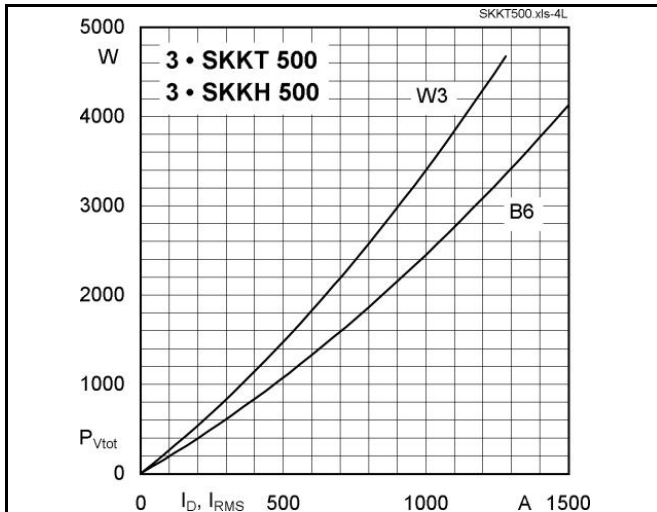


Fig. 4L Power dissipation of three modules vs. direct and rms current

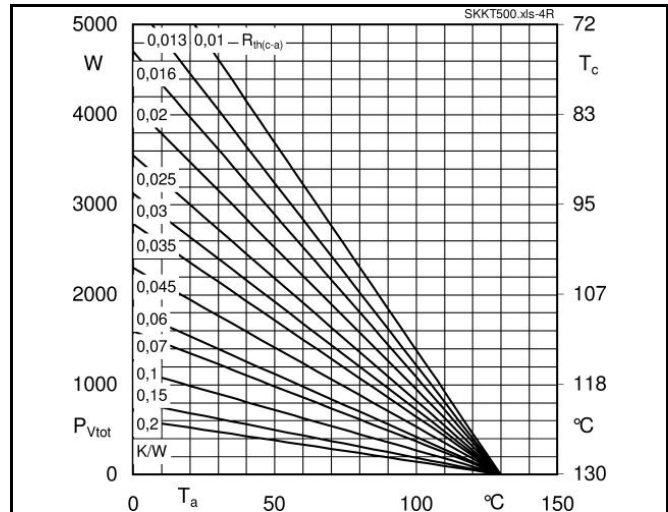


Fig. 4R Power dissipation of three modules vs. case temp.

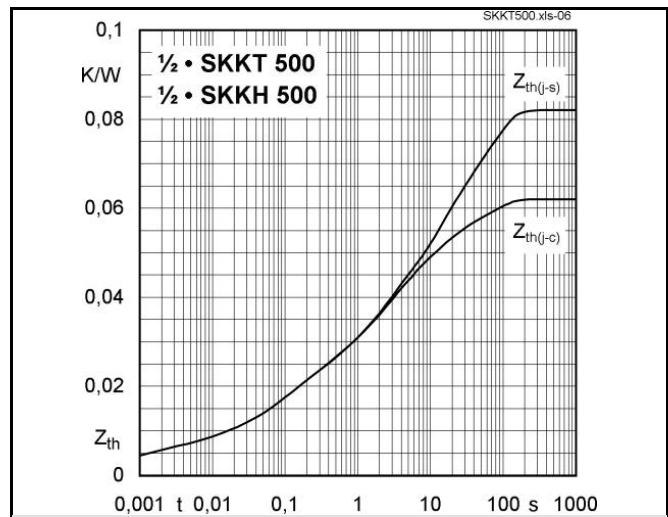


Fig. 6 Transient thermal impedance vs. time

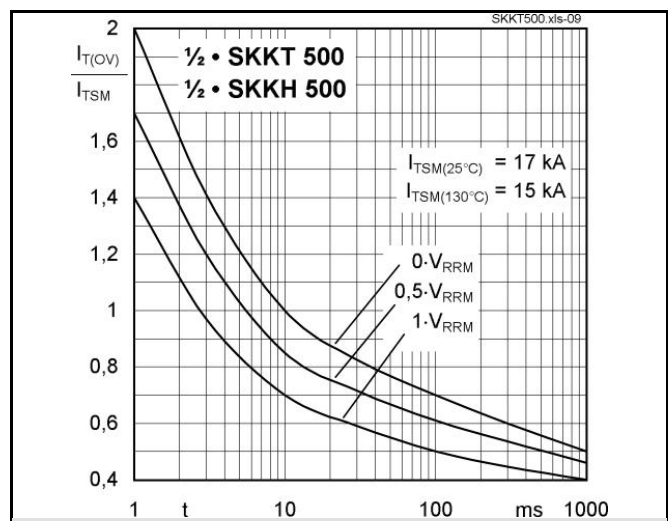


Fig. 8 Surge overload current vs. time

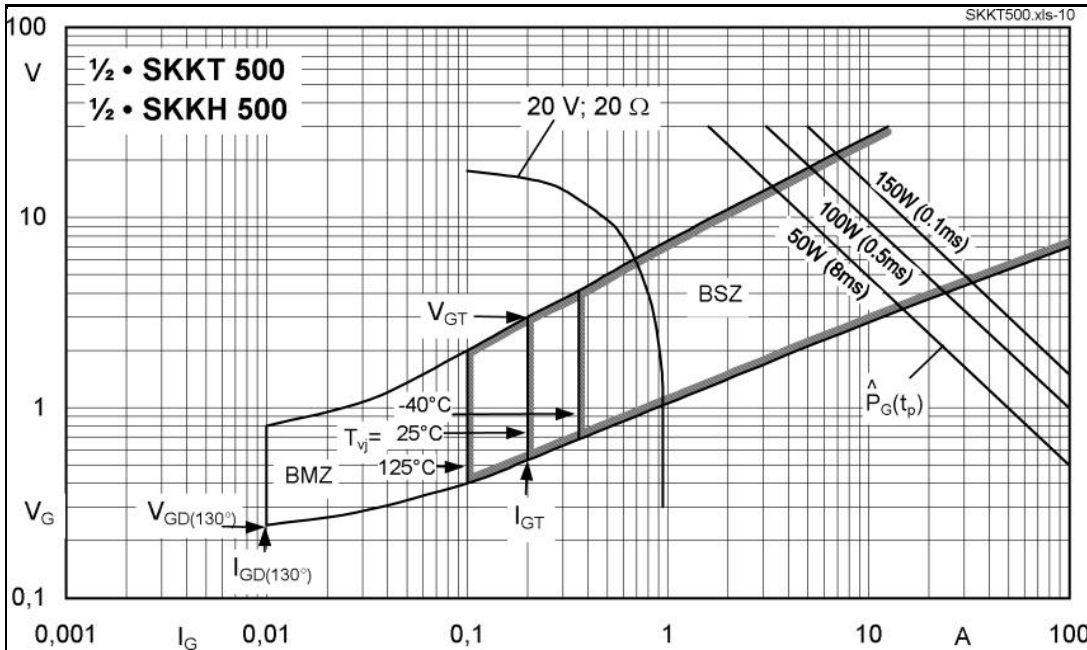
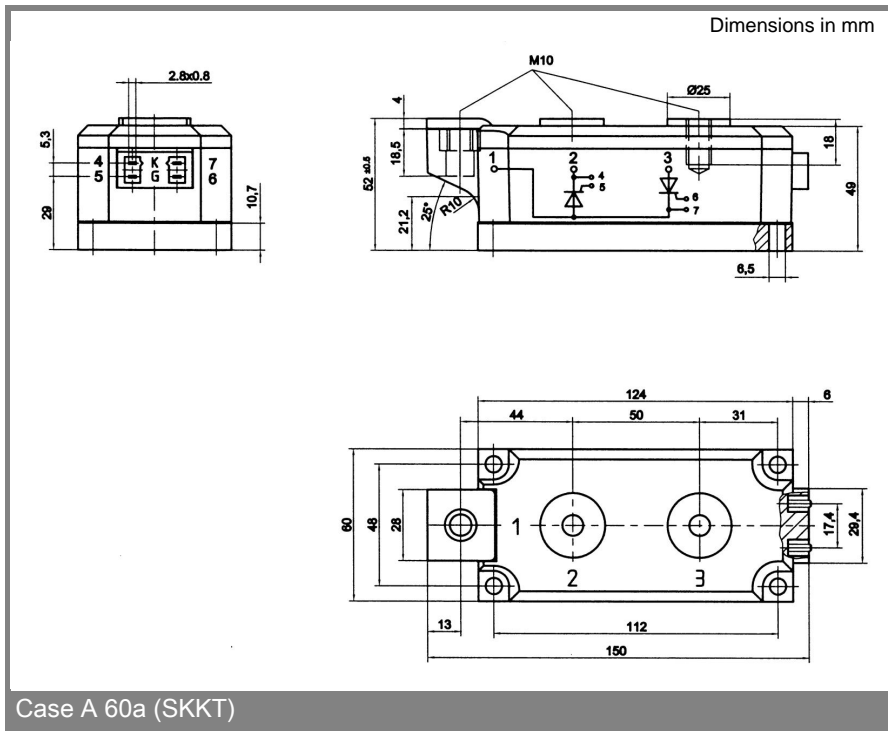
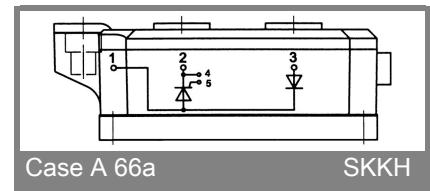


Fig. 9 Gate trigger characteristics



Case A 60a (SKKT)



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