

# SKKT 162, SKKH 162



## SEMIPACK<sup>®</sup> 2

### Thyristor / Diode Modules

#### SKKT 162

#### SKKH 162

#### 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)
- 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	$I_{TRMS} = 250$ A (maximum value for continuous operation) $I_{TAV} = 160$ A (sin. 180; $T_c = 83$ °C)	
900	800	SKKT 162/08E	SKKH 162/08E
1300	1200	SKKT 162/12E	SKKH 162/12E
1500	1400	SKKT 162/14E	SKKH 162/14E
1700	1600	SKKT 162/16E	SKKH 162/16E
1900	1800	SKKT 162/18E	SKKH 162/18E

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85$ (100) °C;	156 (110)	A
$I_D$	P3/180F; $T_a = 35$ °C; B2 / B6	190 / 230	A
$I_{RMS}$	P3/180F; $T_a = 35$ °C; W1 / W3	265 / 3 * 185	A
$I_{TSM}$	$T_{vj} = 25$ °C; 10 ms	5400	A
	$T_{vj} = 125$ °C; 10 ms	5000	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms	145000	A <sup>2</sup> s
	$T_{vj} = 125$ °C; 8,3 ... 10 ms	125000	A <sup>2</sup> s
$V_T$	$T_{vj} = 25$ °C; $I_T = 500$ A	max. 1,6	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	max. 0,85	V
$r_T$	$T_{vj} = 125$ °C	max. 1,5	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	50 ... 150	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	0,17 / 0,085	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,18 / 0,09	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,2 / 0,1	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 % <sup>1)</sup>	Nm
$M_t$	to terminal	5 ± 15 %	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	165	g
Case	SKKT	A 21	
	SKKH	A 22	



SKKT

SKKH

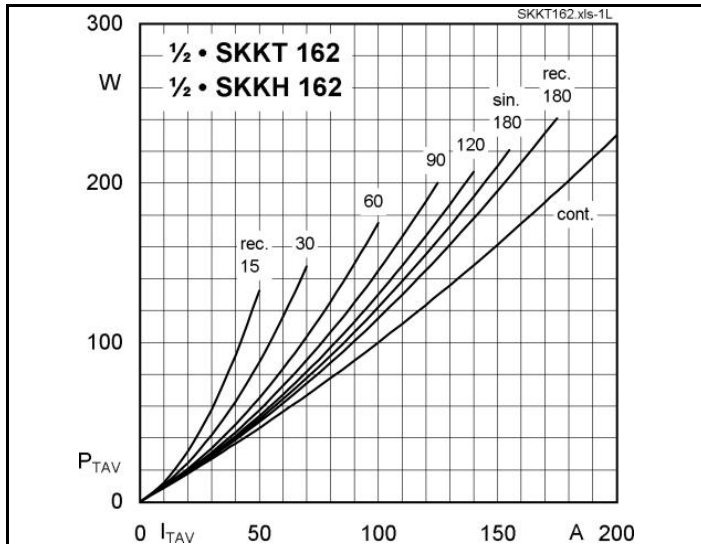


Fig. 1L Power dissipation per thyristor vs. on-state current

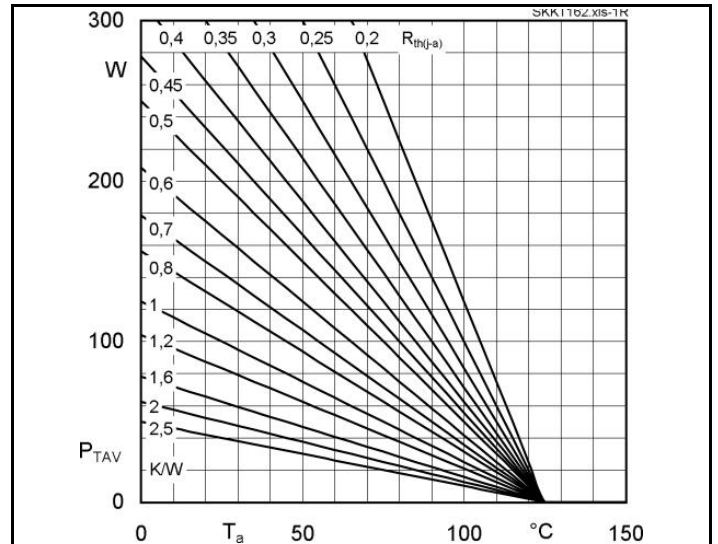


Fig. 1R Power dissipation per thyristor vs. ambient temp.

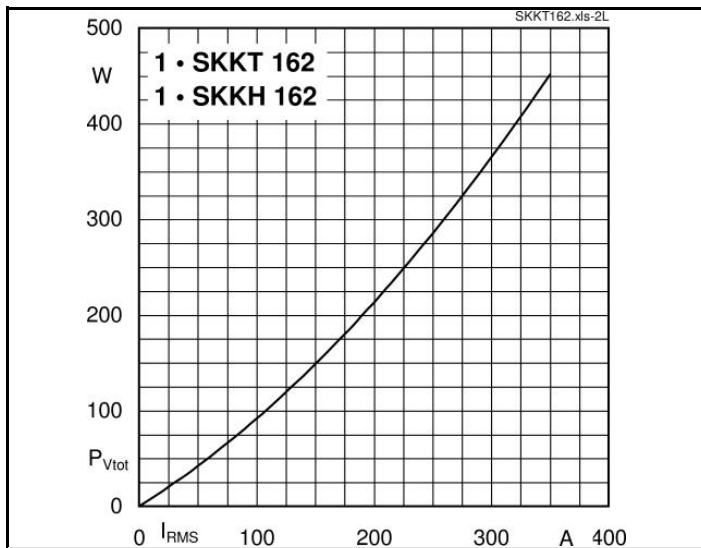


Fig. 2L Power dissipation per module vs. rms current

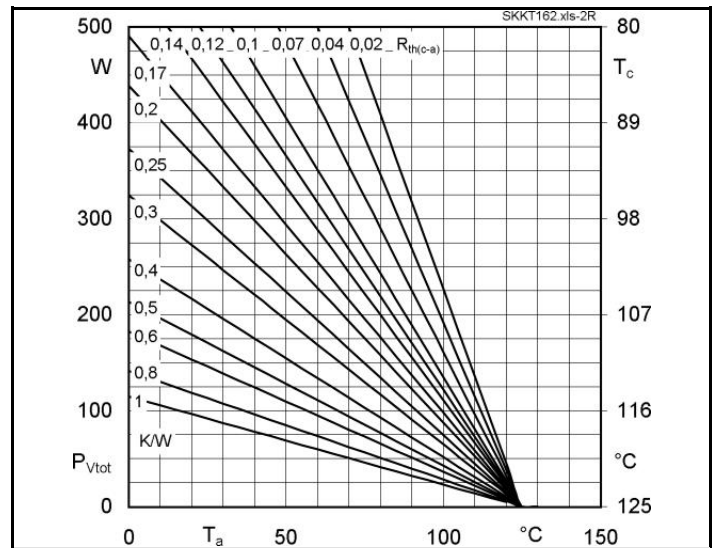


Fig. 2R Power dissipation per module vs. case temp.

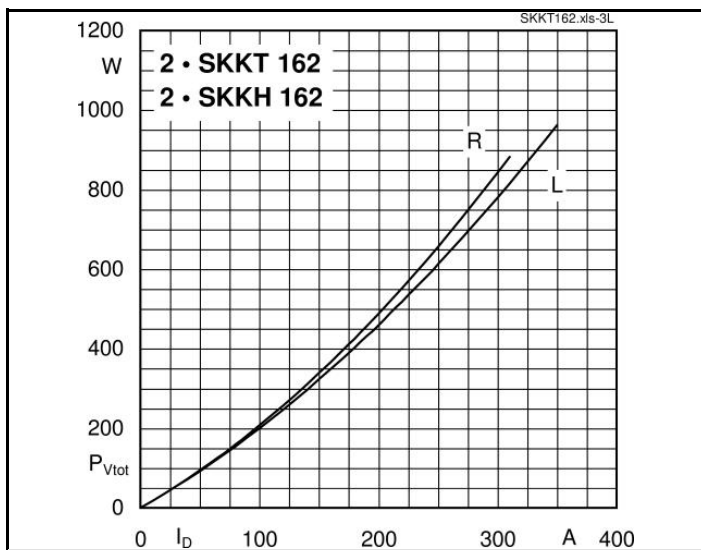


Fig. 3L Power dissipation of two modules vs. direct current

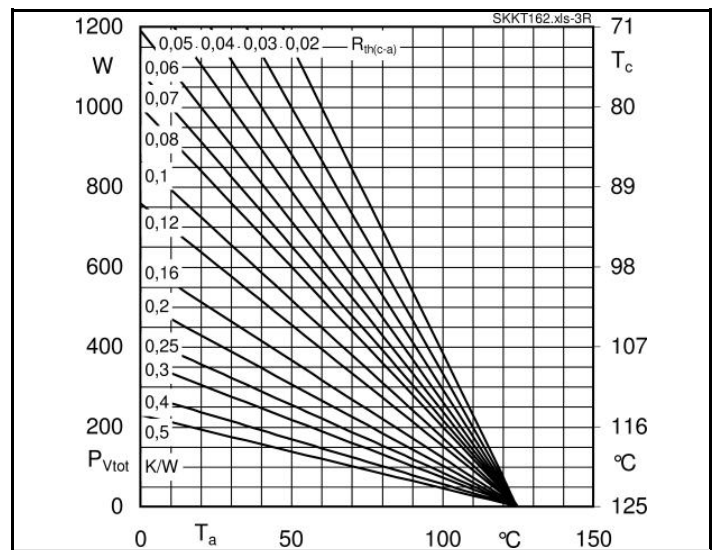


Fig. 3R Power dissipation of two modules vs. case temp.

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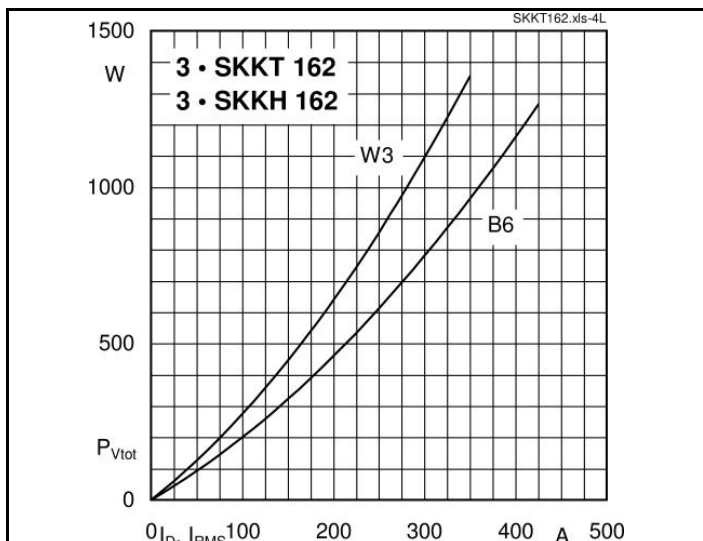


Fig. 4L Power dissipation of three modules vs. direct and rms current

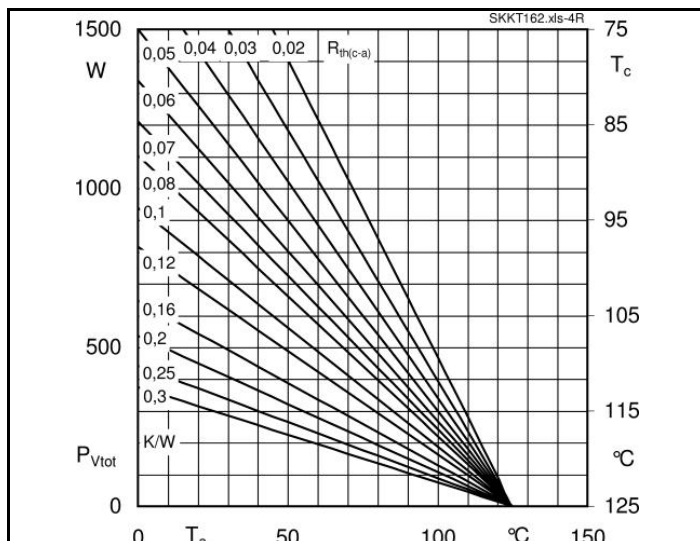


Fig. 4R Power dissipation of three modules vs. case temp.

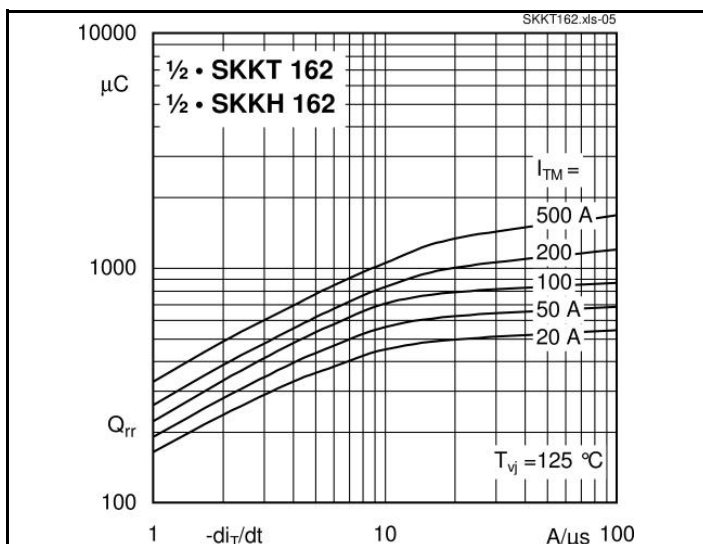


Fig. 5 Recovered charge vs. current decrease

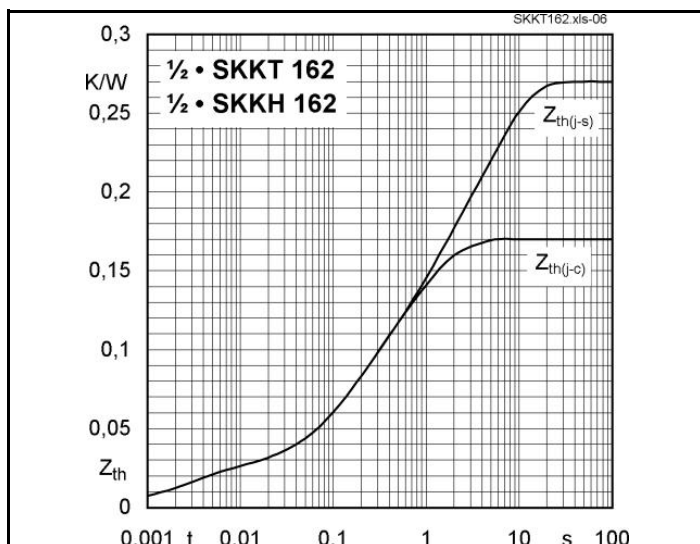


Fig. 6 Transient thermal impedance vs. time

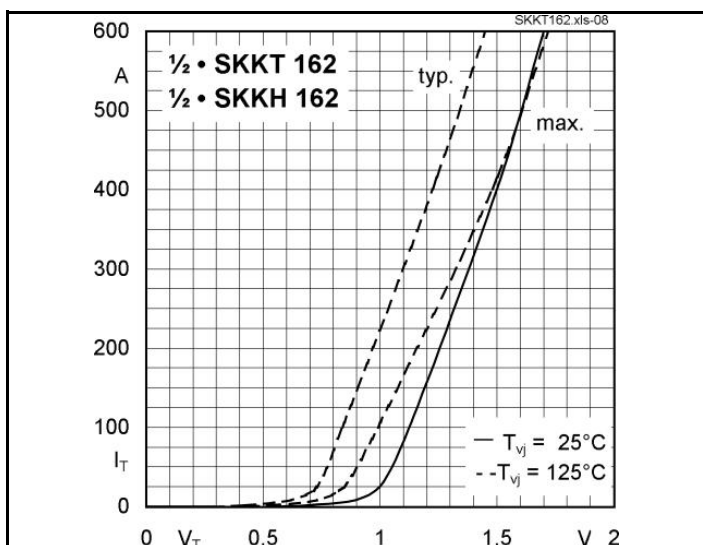


Fig. 7 On-state characteristics

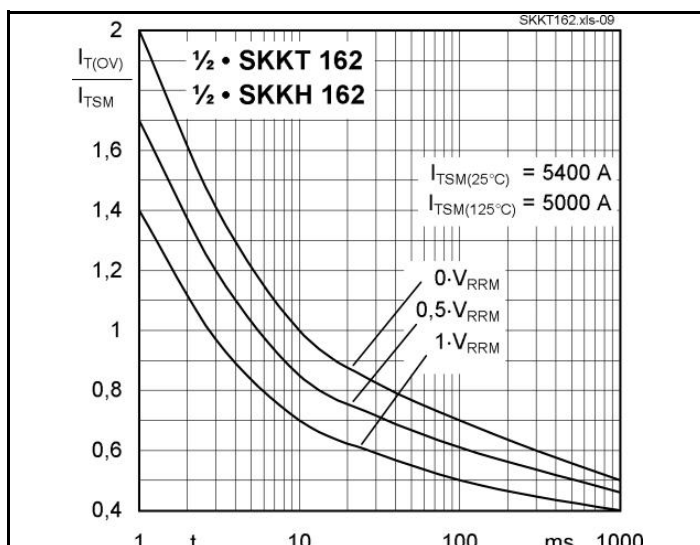
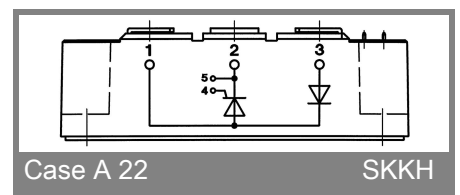
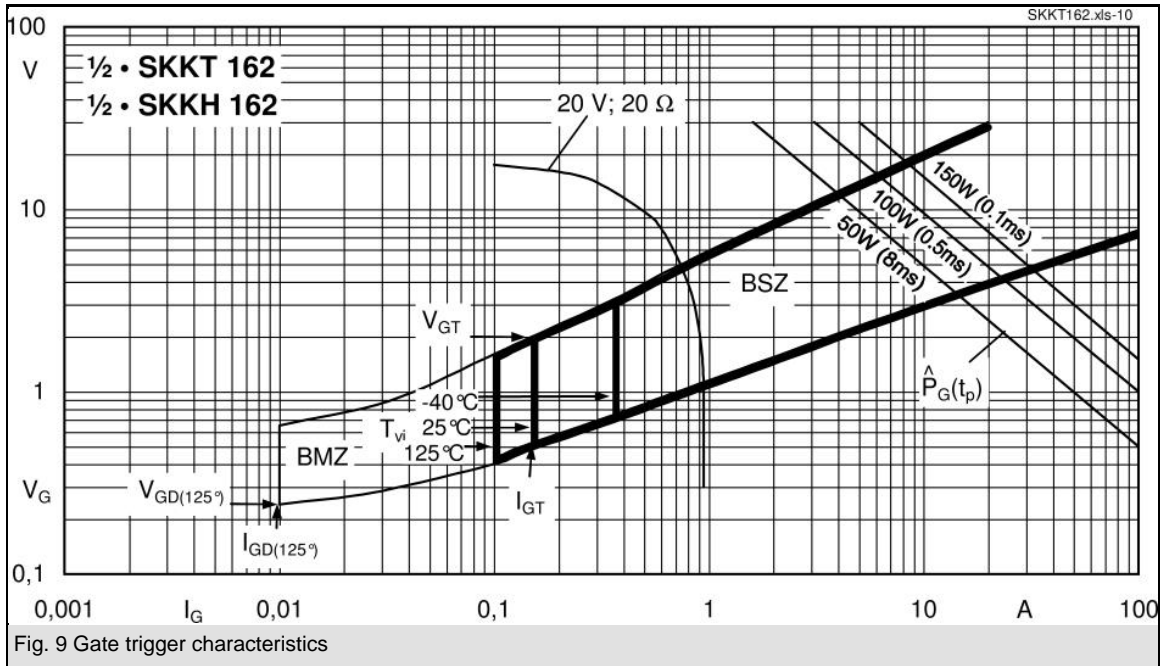


Fig. 8 Surge overload current vs. time



\* 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

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