

SKKT 15, SKKH 15



SEMIPACK® 0

Thyristor / Diode Modules

SKKT 15
SKKH 15

Features

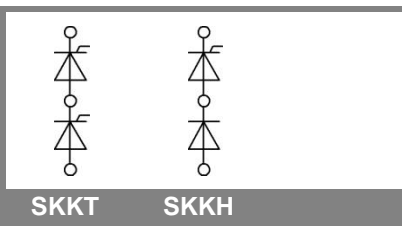
- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E 63 532

Typical Applications*

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

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{TRMS} = 24$ A (maximum value for continuous operation) $I_{TAV} = 15$ A (sin. 180; $T_c = 75$ °C)	
700	600	SKKT 15/06E	SKKH 15/06E
900	800	SKKT 15/08E	SKKH 15/08E
1300	1200	SKKT 15/12E	SKKH 15/12E
1500	1400	SKKT 15/14E	SKKH 15/14E
1700	1600	SKKT 15/16E	SKKH 15/16E

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) °C;	13,5 (9,5)	A
I_D	P13A/100; $T_a = 45$ °C; B2 / B6	14 / 17	A
I_{RMS}	P13A/100; $T_a = 45$ °C; W1 / W3	21 / 3 x 12	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 ² s
	$T_{vj} = 125$ °C; 8,3 ... 10 ms	390	A ² s
V_T	$T_{vj} = 25$ °C; $I_T = 75$ A	max. 2,45	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	max. 1,1	V
r_T	$T_{vj} = 125$ °C	max. 20	mΩ
I_{DD}, I_{RD}	$T_{vj} = 125$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$	max. 8	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. 100	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.	80 / 150	mA
I_L	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	150 / 300	mA
V_{GT}	$T_{vj} = 25$ °C; d.c.	min. 3	V
I_{GT}	$T_{vj} = 25$ °C; d.c.	min. 100	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	1,6 / 0,8	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	1,7 / 0,9	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	1,8 / 0,9	K/W
$R_{th(c-s)}$	per thyristor / 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	1,5 ± 15 %	Nm
a		5 * 9,81	m/s ²
m	approx.	50	g
Case	SKKT SKKH	A 1 A 2	



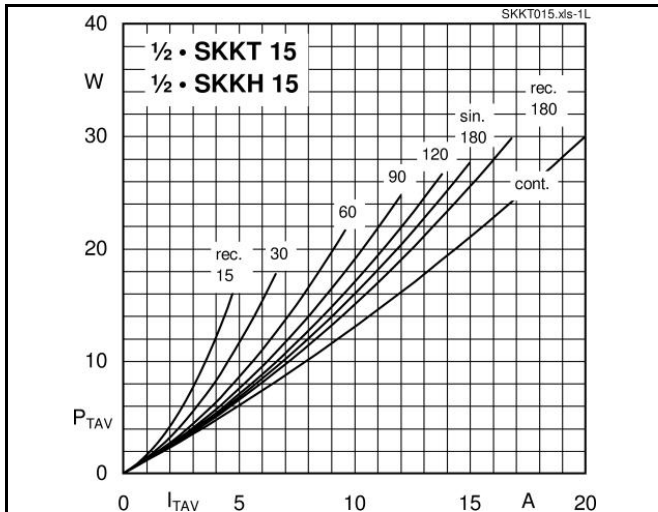


Fig. 1L Power dissipation per thyristor vs. on-state current

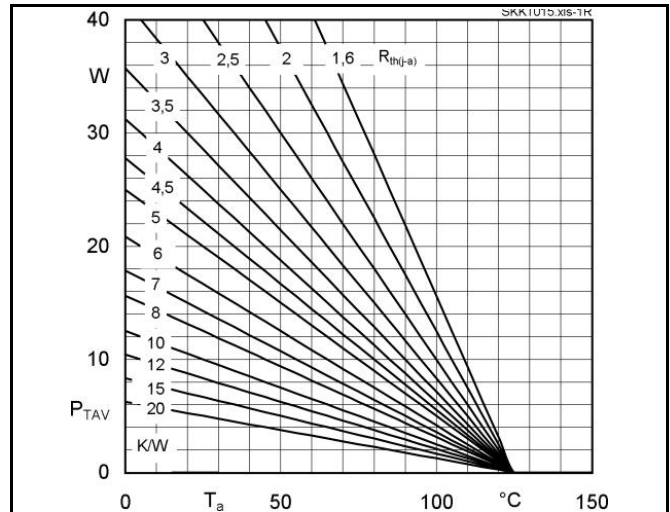


Fig. 1R Power dissipation per thyristor vs. ambient temp.

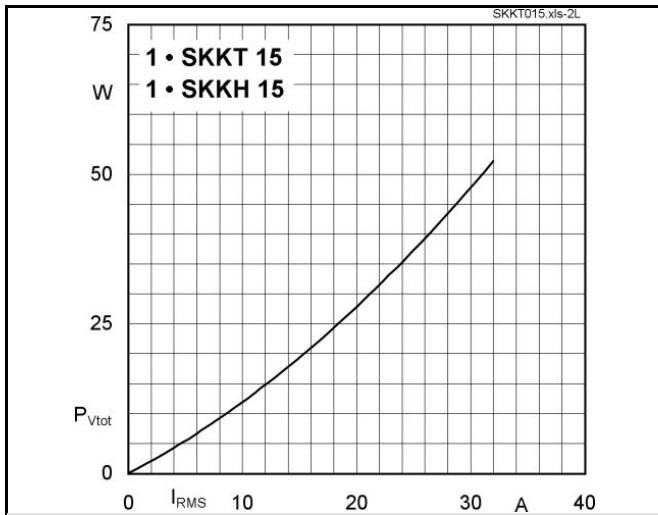


Fig. 2L Power dissipation per module vs. rms current

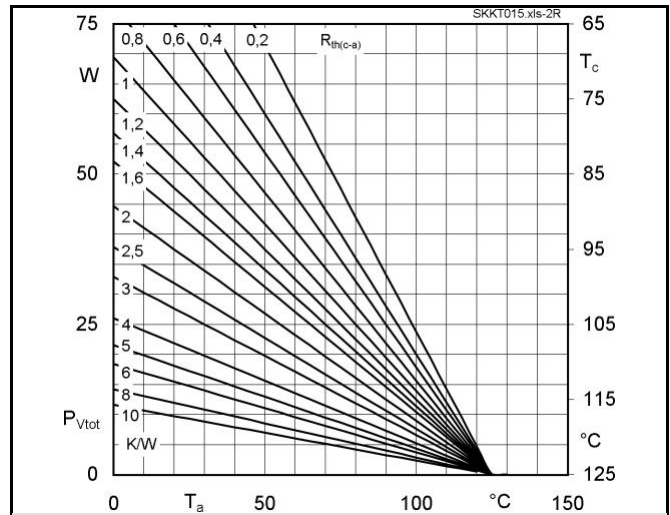


Fig. 2R Power dissipation per module vs. case temp.

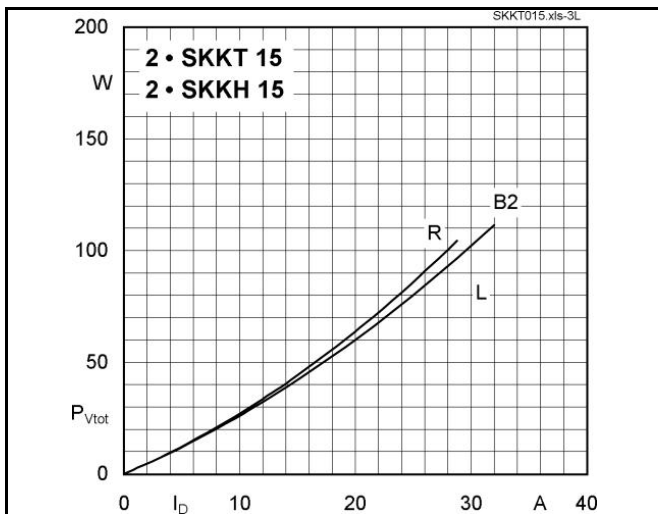


Fig. 3L Power dissipation of two modules vs. direct current

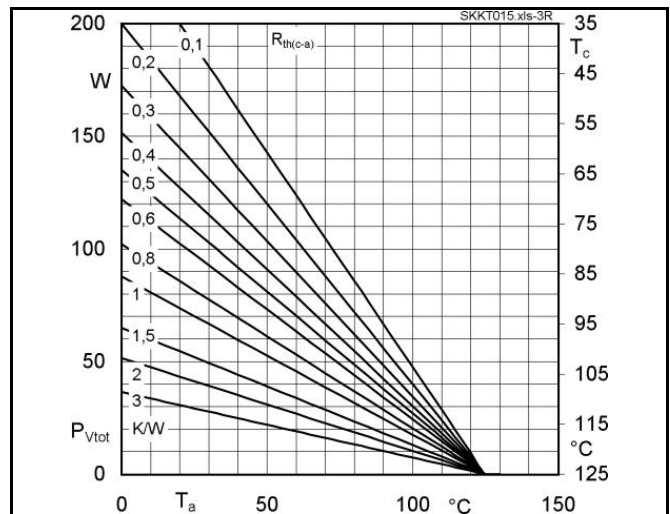


Fig. 3R Power dissipation of two modules vs. case temp.

SKKT 15, SKKH 15

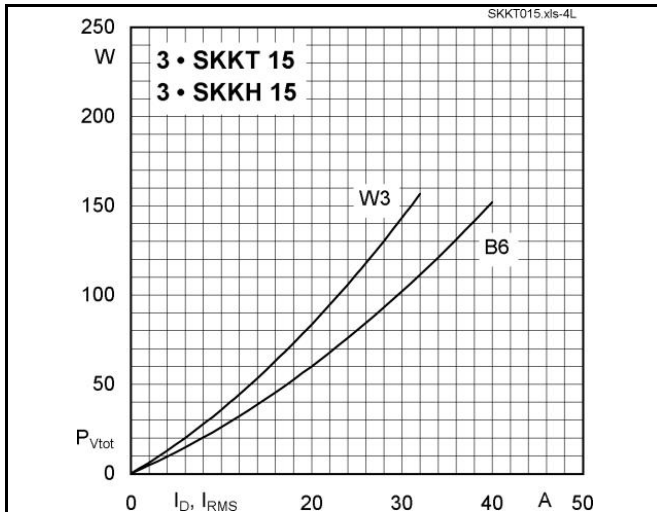


Fig. 4L Power dissipation of three modules vs. direct and rms current

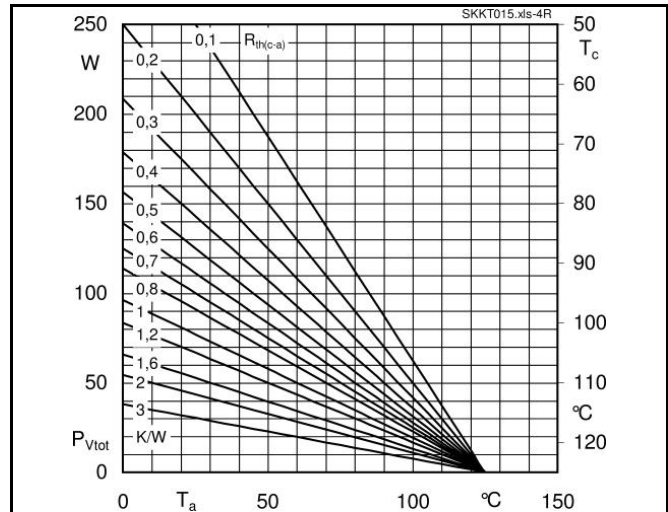


Fig. 4R Power dissipation of three modules vs. case temp.

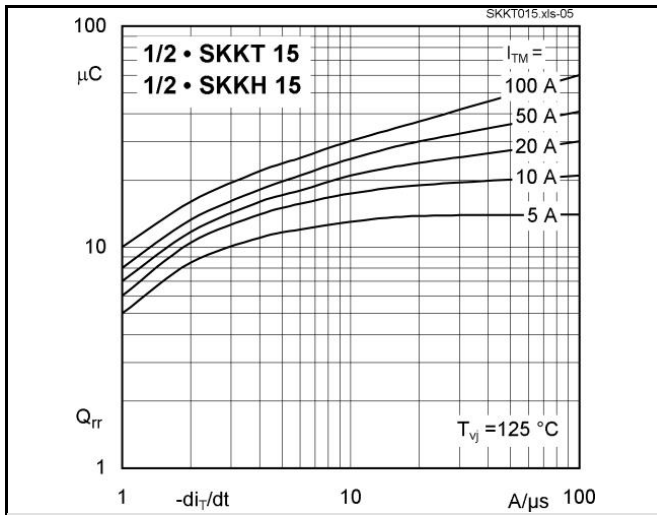


Fig. 5 Recovered charge vs. current decrease

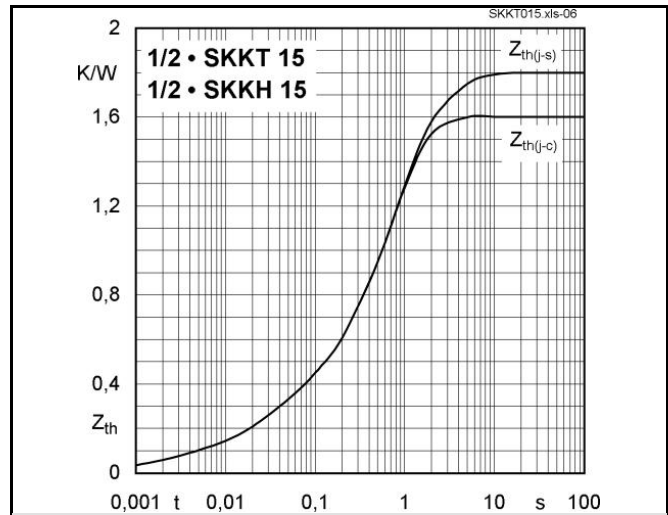


Fig. 6 Transient thermal impedance vs. time

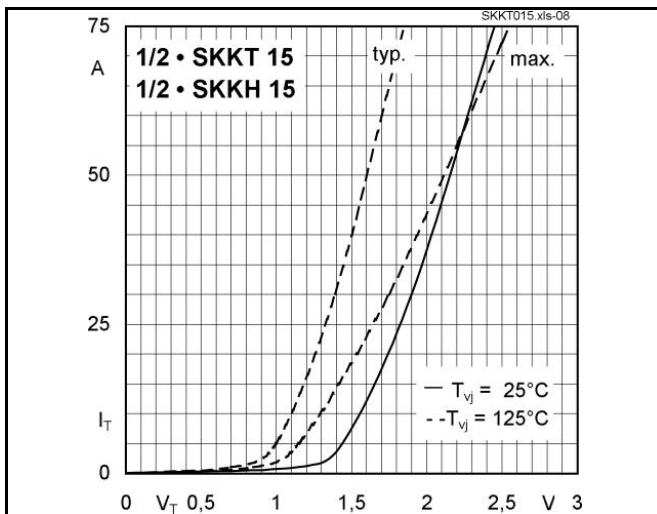


Fig. 7 On-state characteristics

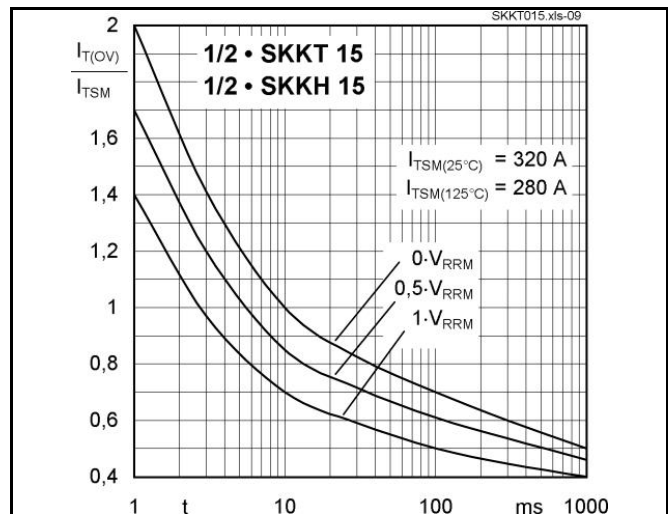
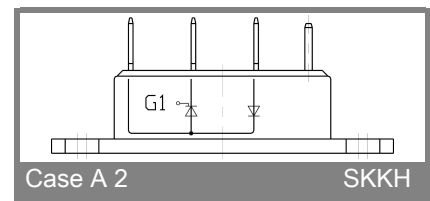
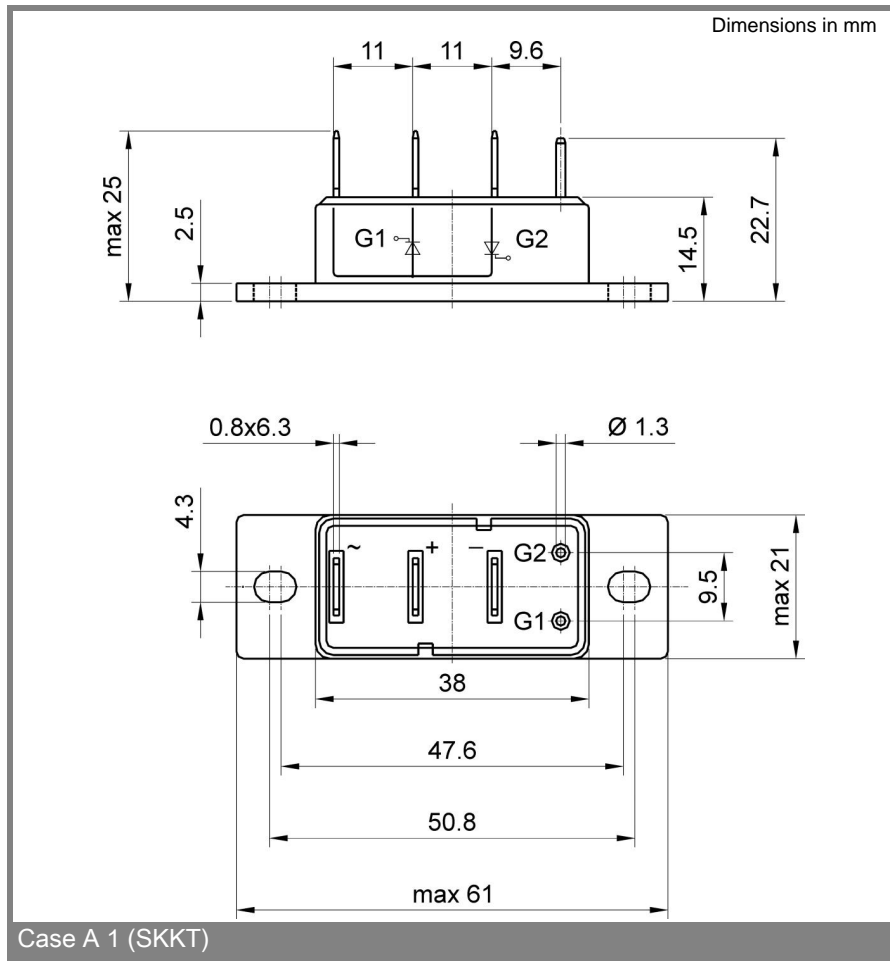
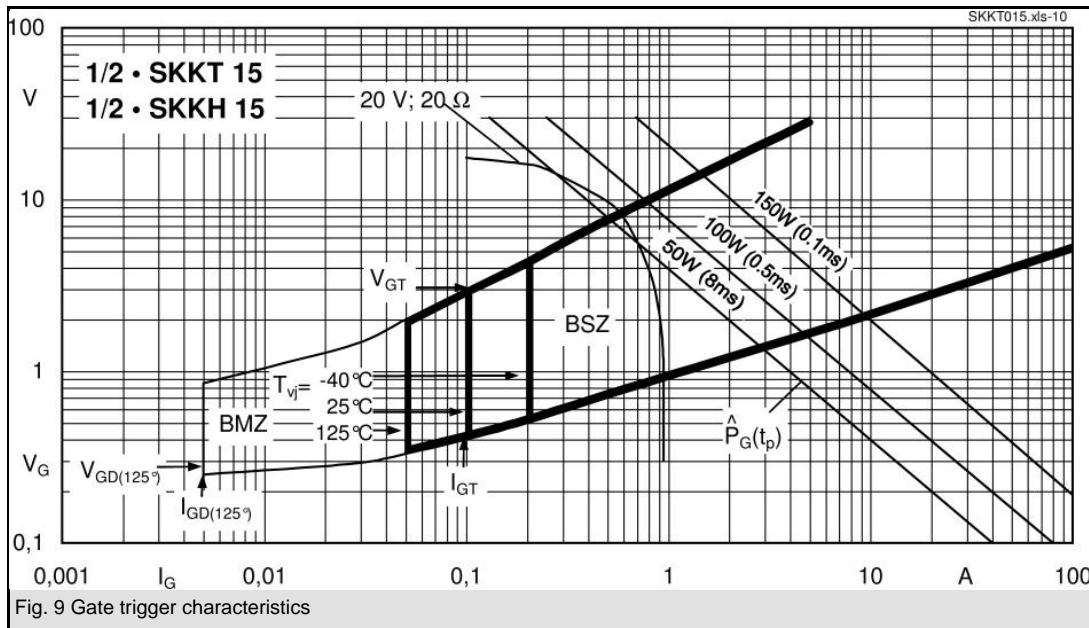


Fig. 8 Surge overload current vs. time



* 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

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.