

SKKT 253, SKKH 253



SEMIPACK® 3

Thyristor / Diode Modules

SKKT 253

SKKH 253

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Chip soldered on direct copper bonded Al₂O₃ ceramic
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

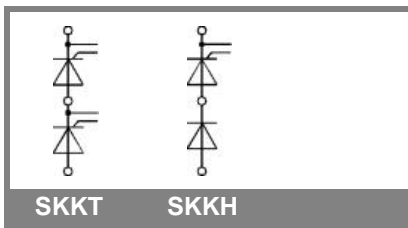
Typical Applications

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

- 1) See the assembly instructions
- 2) The screws must be lubricate

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{TRMS} = 420$ A (maximum value for continuous operation) $I_{TAV} = 253$ A (sin. 180; $T_c = 85$ °C)	
900	800	SKKT 253/08E	SKKH 253/08E
1300	1200	SKKT 253/12E	SKKH 253/12E
1500	1400	SKKT 253/14E	SKKH 253/14E
1700	1600	SKKT 253/16E	SKKH 253/16E
1900	1800	SKKT 253/18E	SKKH 253/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) °C;	253 (191)	A
I_D	P16/200F; $T_a = 35$ °C; B2 / B6	387 / 502	A
I_{RMS}	P16/200F; $T_a = 35$ °C; W1 / W3	465 / 3 * 400	A
I_{TSM}	$T_{vj} = 25$ °C; 10 ms	9000	A
	$T_{vj} = 130$ °C; 10 ms	8000	A
i^2t	$T_{vj} = 25$ °C; 8,3 ... 10 ms	405000	A ² s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	320000	A ² s
V_T	$T_{vj} = 25$ °C; $I_T = 750$ A	max. 1,6	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	max. 0,85	V
r_T	$T_{vj} = 130$ °C	max. 1,1	mΩ
I_{DD}, I_{RD}	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$	max. 50	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. 250	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 130$ °C	max. 1000	V/μs
t_q	$T_{vj} = 130$ °C	50 ... 150	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	0,11 / 0,055	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,115 / 0,057	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,125 / 0,0625	K/W
$R_{th(c-s)}$	per thyristor / per module	0,08 / 0,04	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 % ¹⁾	Nm
M_t	to terminals	9 ± 15 % ²⁾	Nm
a		5 * 9,81	m/s ²
m	approx.	400	g
Case	SKKT	A 43	
	SKKH	A 56	



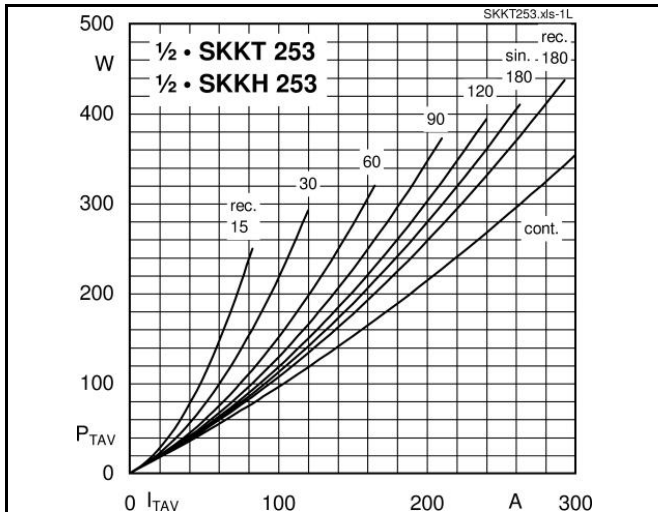


Fig. 1L Power dissipation per thyristor vs. on-state current

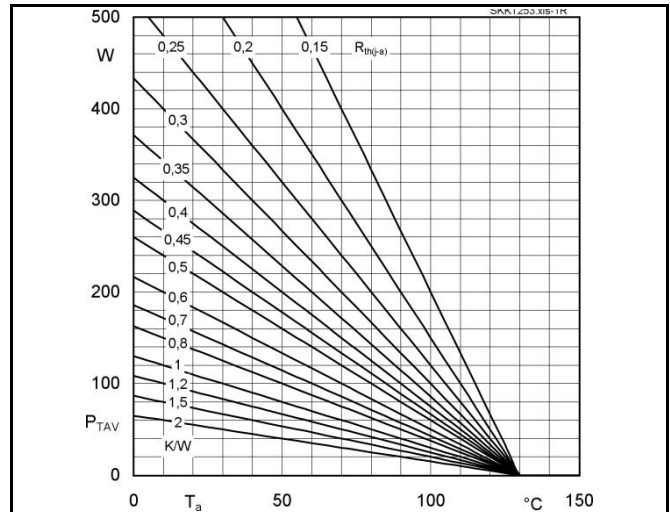


Fig. 1R Power dissipation per thyristor vs. ambient temp.

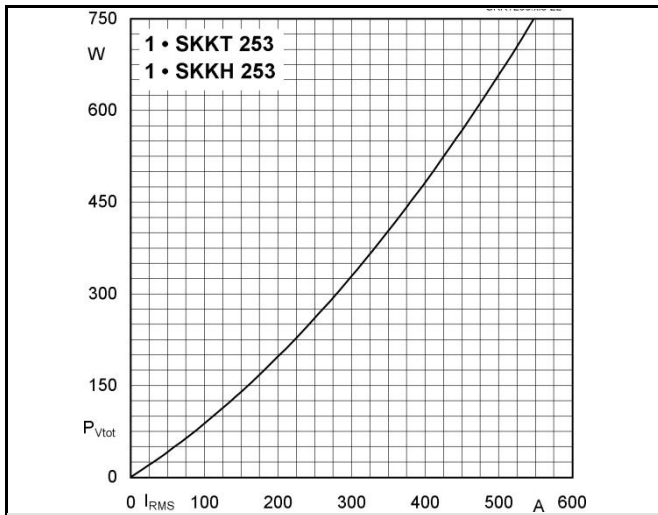


Fig. 2L Power dissipation per module vs. rms current

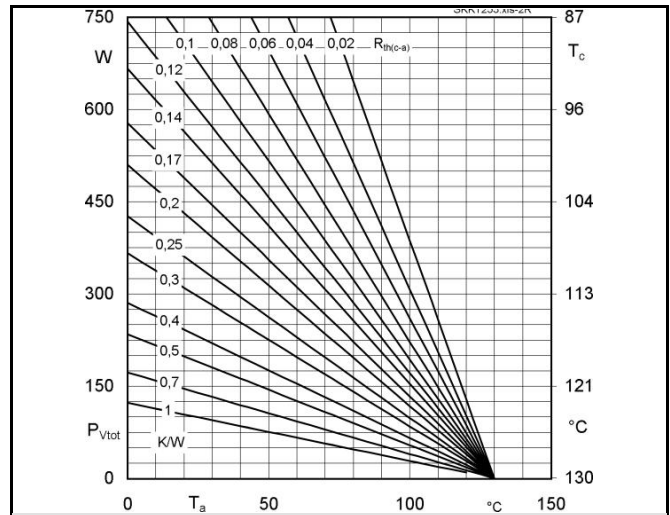


Fig. 2R Power dissipation per module vs. case temp.

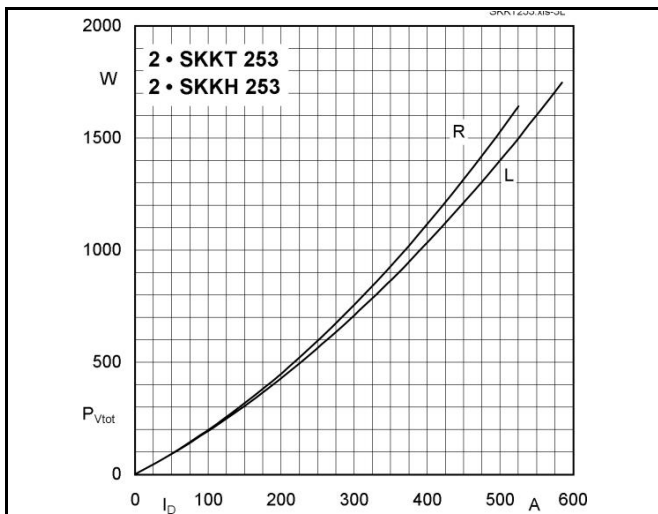


Fig. 3L Power dissipation of two modules vs. direct current

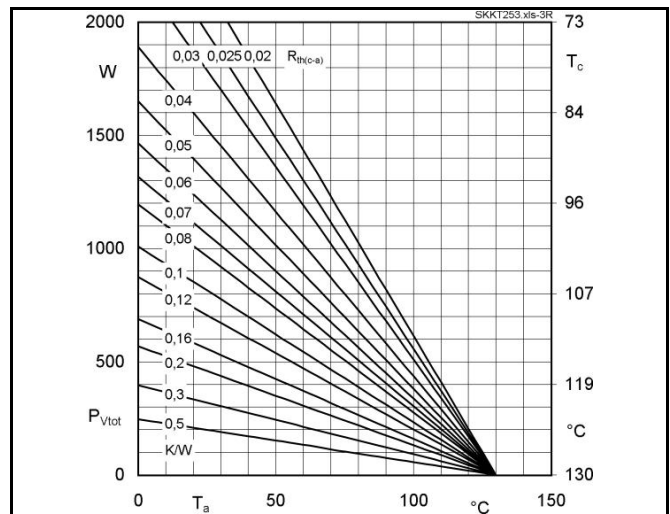


Fig. 3R Power dissipation of two modules vs. case temp.

SKKT 253, SKKH 253

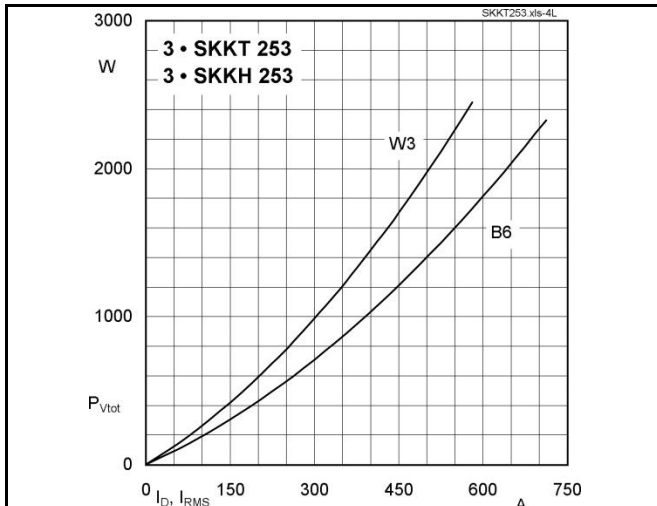


Fig. 4L Power dissipation of three modules vs. direct and rms current

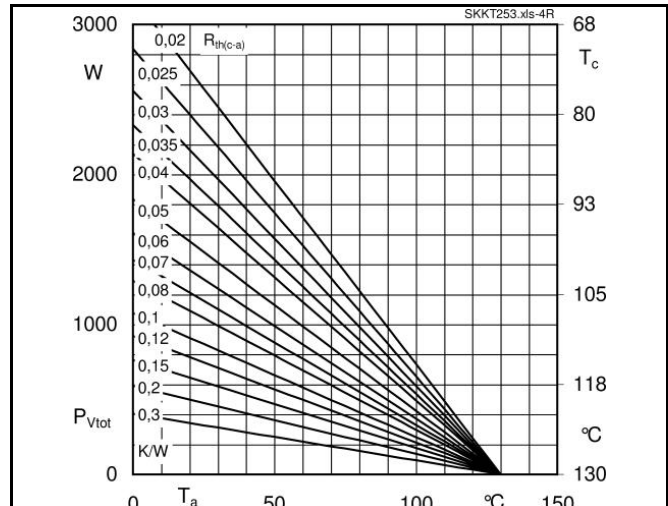


Fig. 4R Power dissipation of three modules vs. case temp.

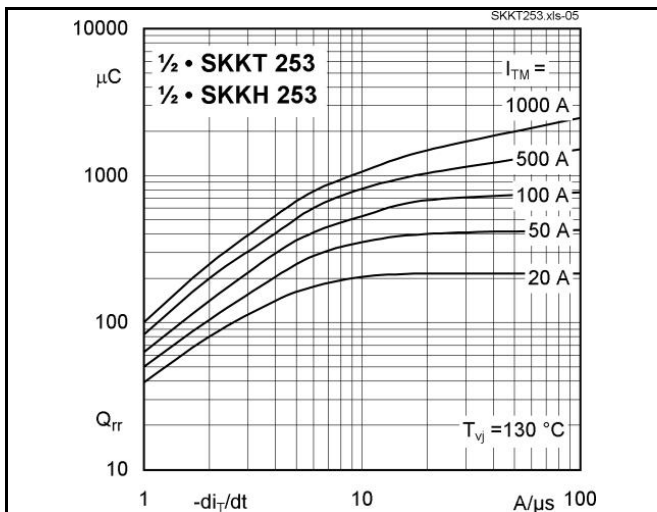


Fig. 5 Recovered charge vs. current decrease

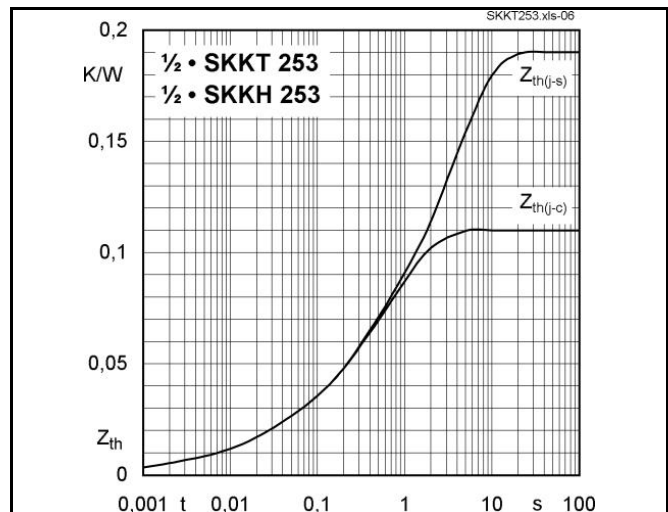


Fig. 6 Transient thermal impedance vs. time

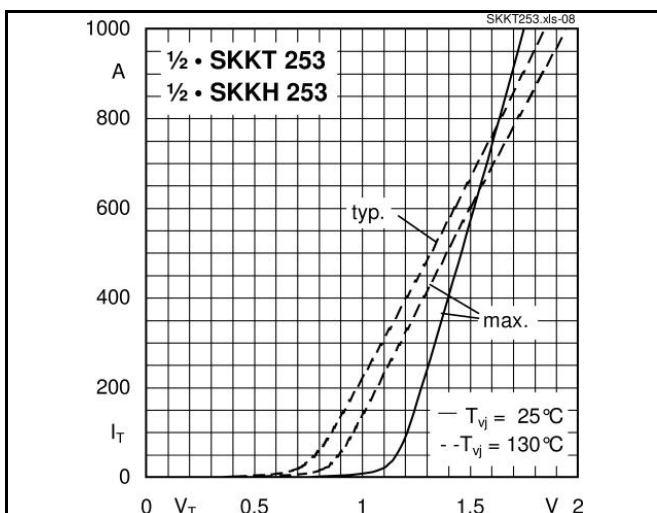


Fig. 7 On-state characteristics

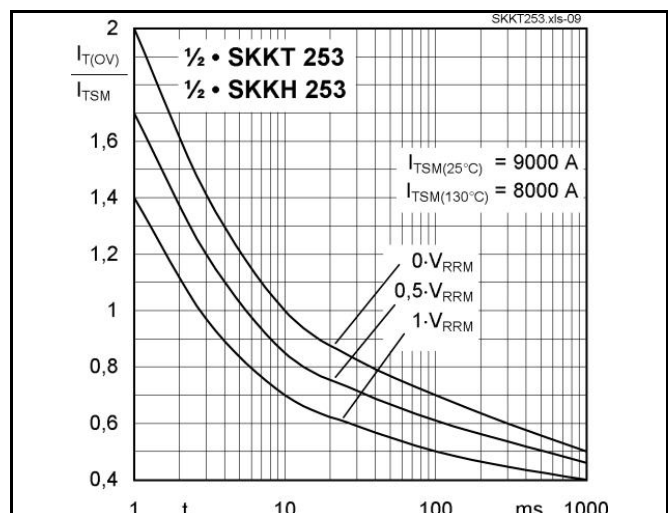
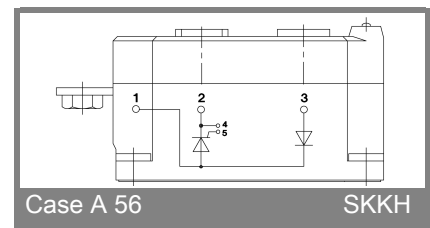
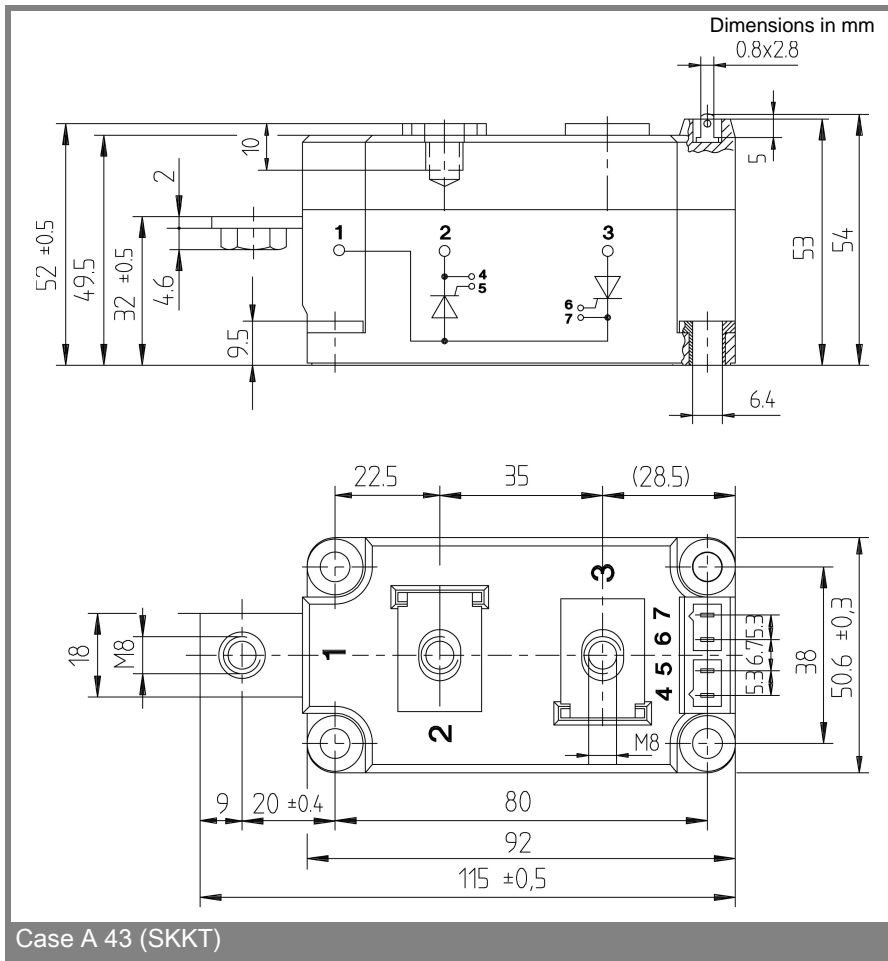
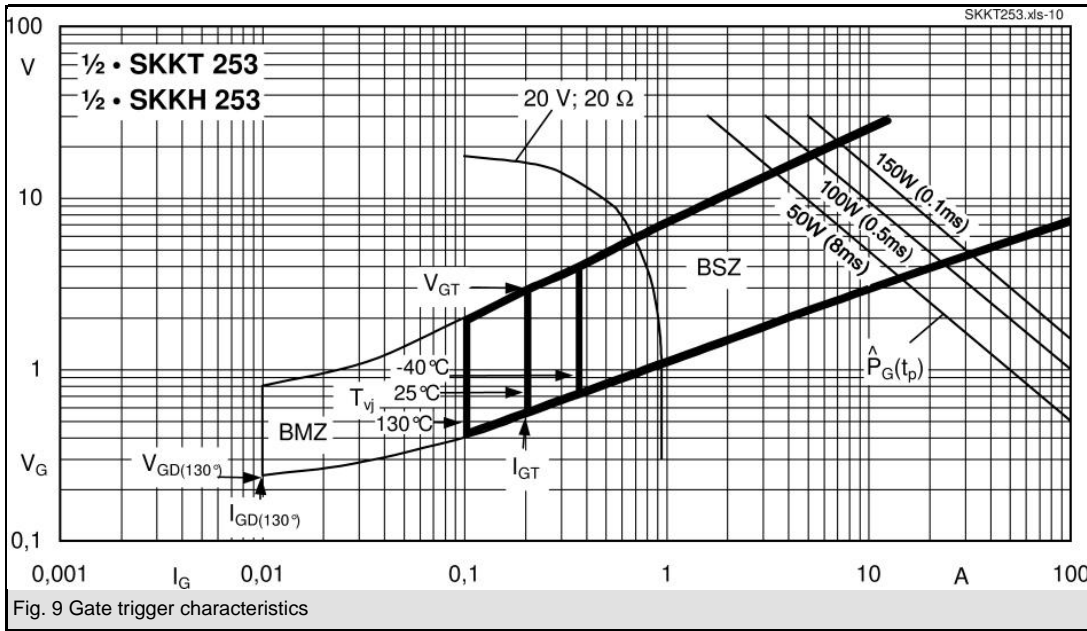


Fig. 8 Surge overload current vs. time



This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.