

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

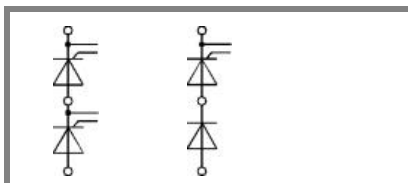
Typical Applications

- 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 ² t	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	



SKKT

SKKH

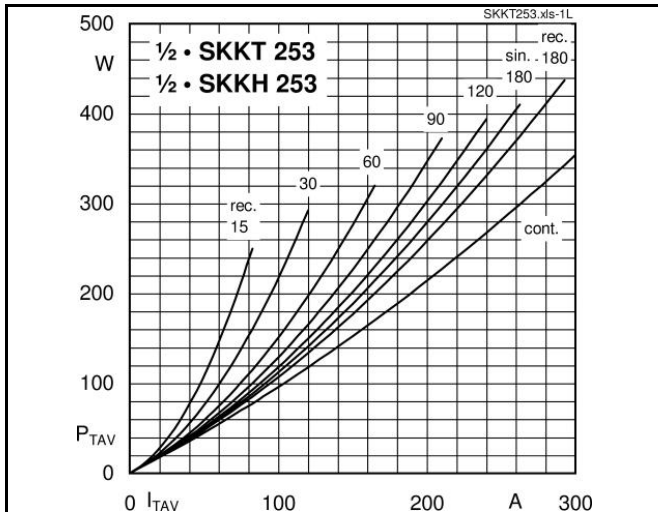


Fig. 1L Power dissipation per thyristor vs. on-state current

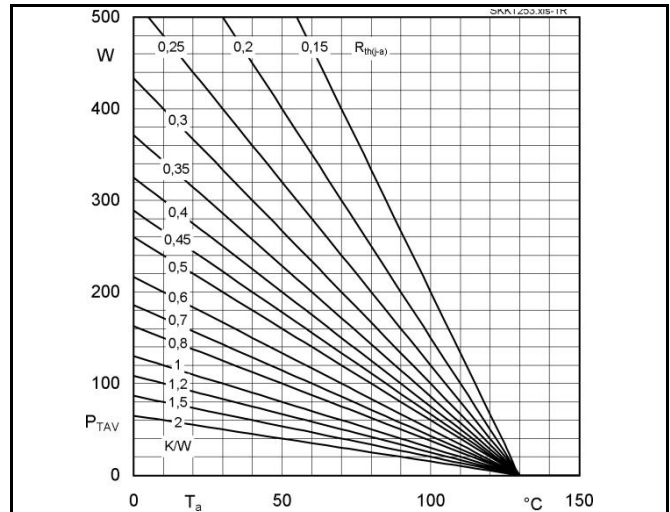


Fig. 1R Power dissipation per thyristor vs. ambient temp.

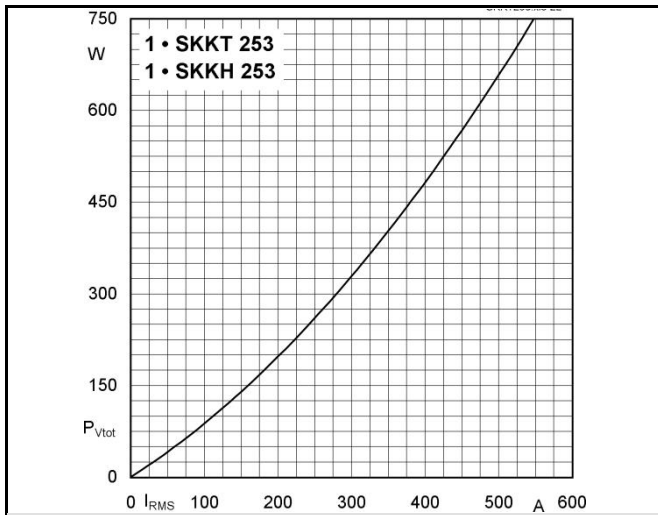


Fig. 2L Power dissipation per module vs. rms current

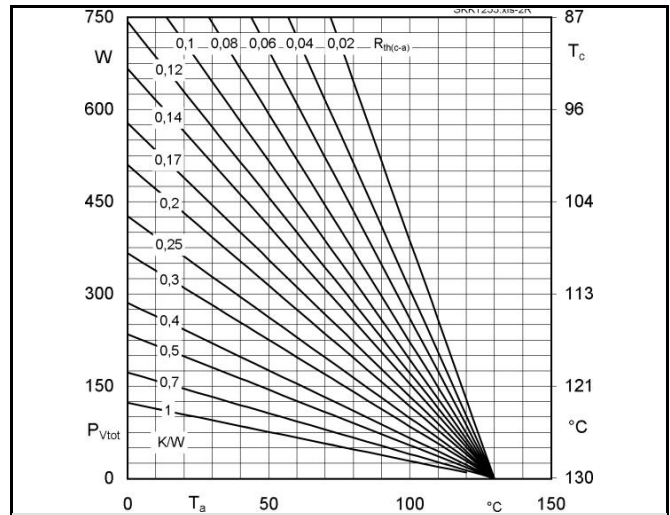


Fig. 2R Power dissipation per module vs. case temp.

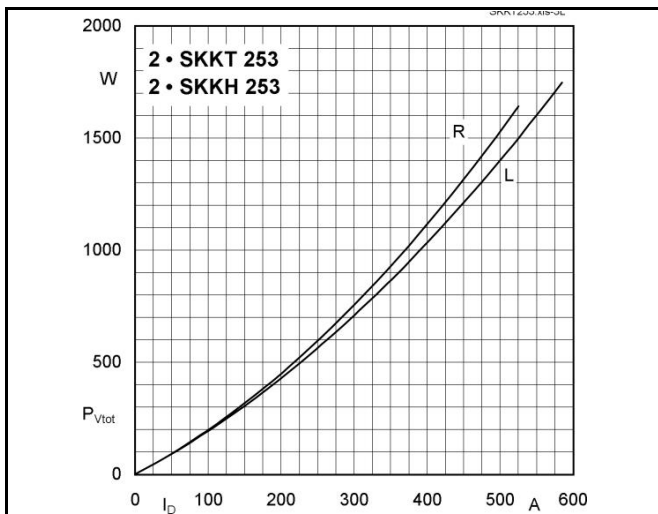


Fig. 3L Power dissipation of two modules vs. direct current

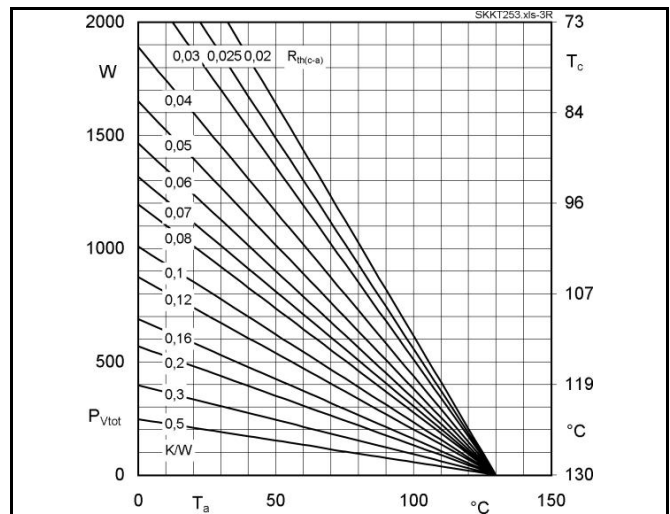


Fig. 3R Power dissipation of two modules vs. case temp.

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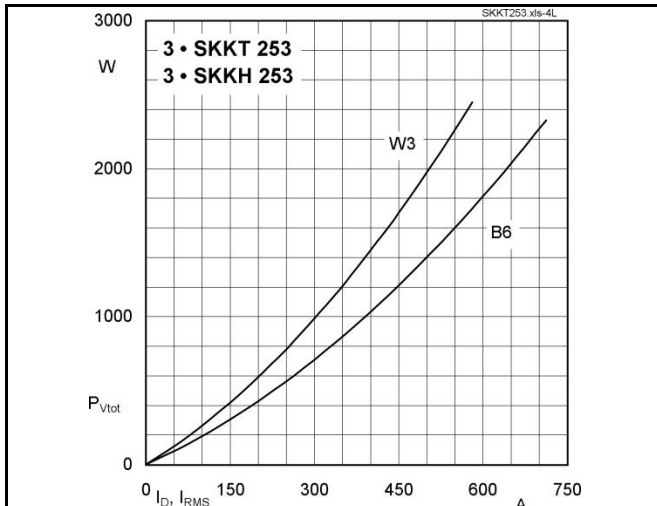


Fig. 4L Power dissipation of three modules vs. direct and rms current

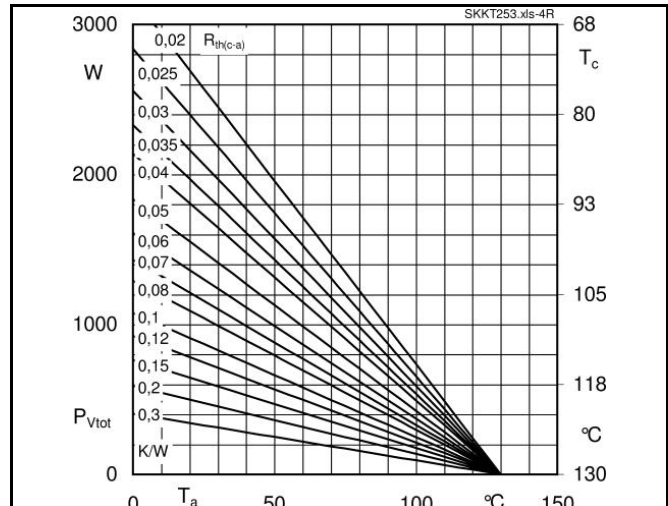


Fig. 4R Power dissipation of three modules vs. case temp.

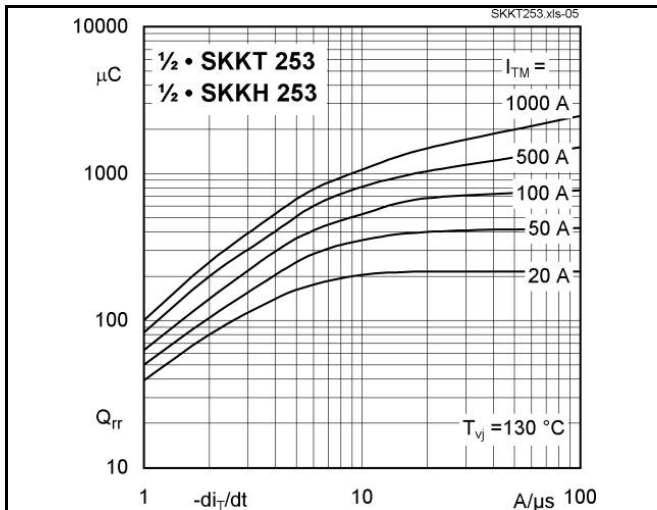


Fig. 5 Recovered charge vs. current decrease

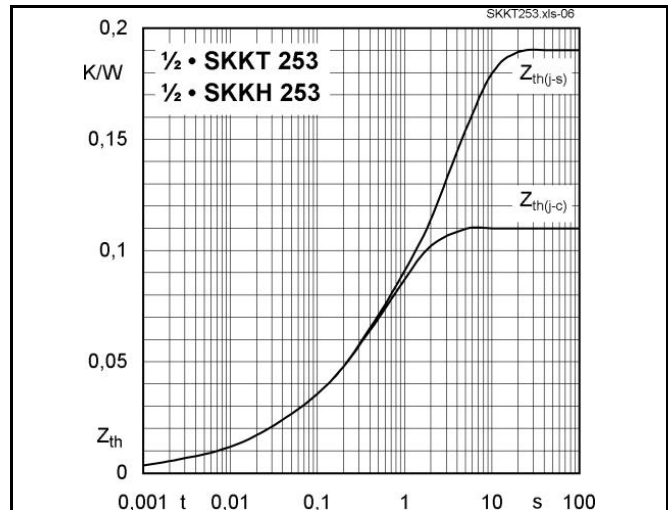


Fig. 6 Transient thermal impedance vs. time

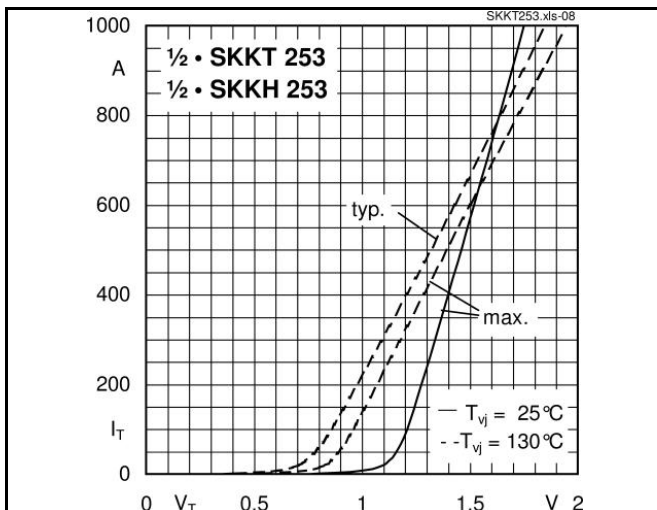


Fig. 7 On-state characteristics

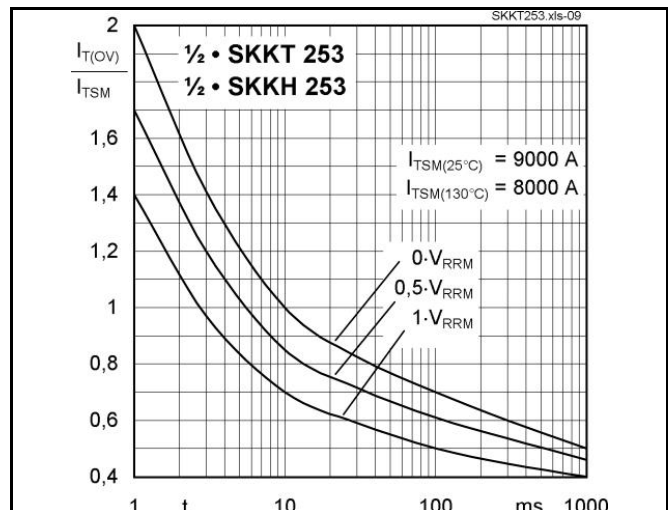
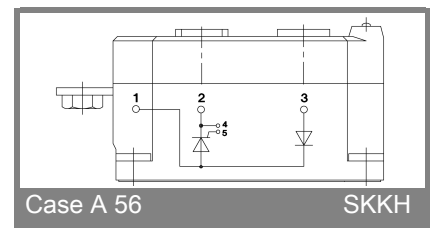
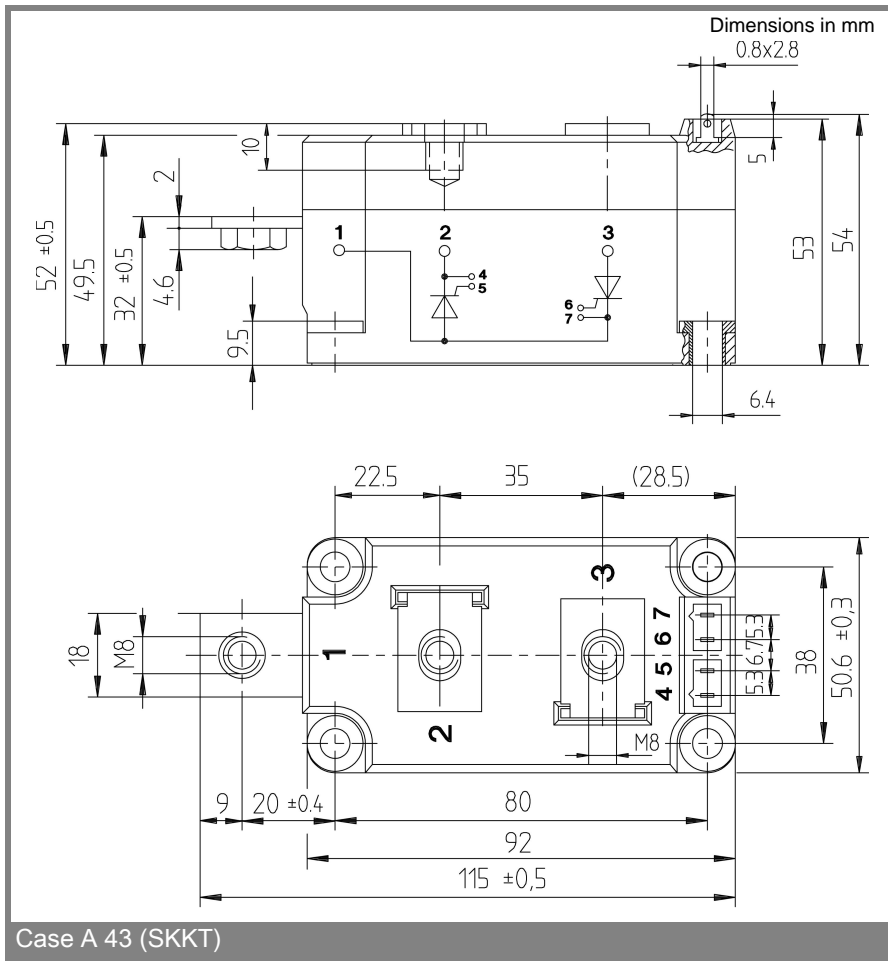
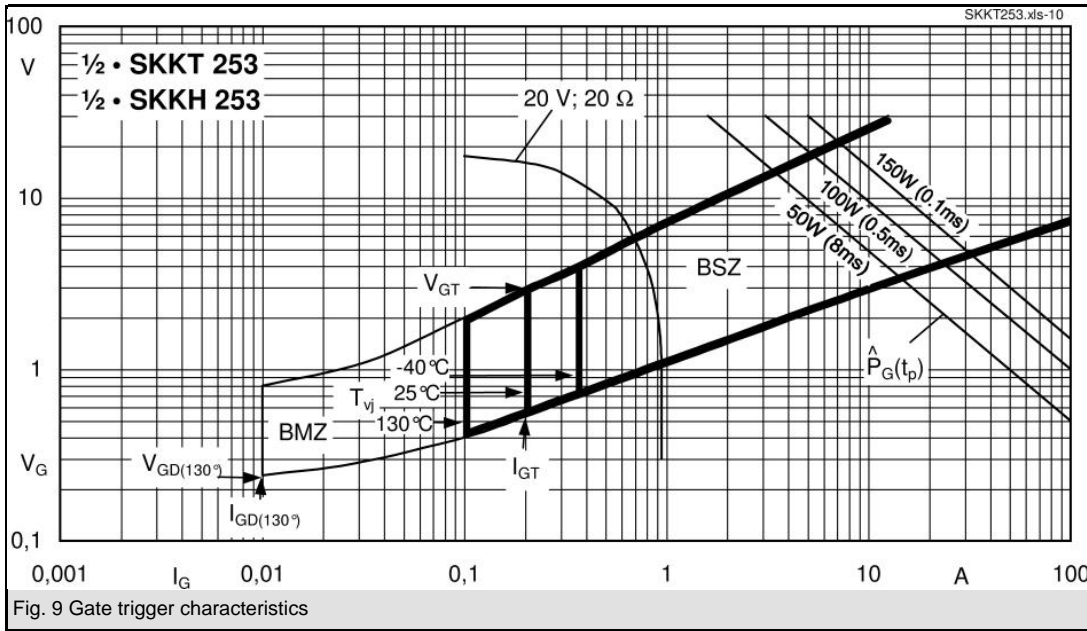


Fig. 8 Surge overload current vs. time



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