

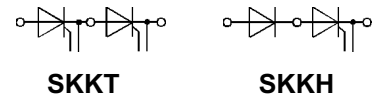
V <sub>RSM</sub>	V <sub>RRM</sub>	(dv/dt) <sub>cr</sub>	I <sub>TRMS</sub> (maximum values for continuous operation)			
			350 A	420 A	350 A	420 A
V	V	V/μs	I <sub>TAV</sub> (sin. 180; T <sub>case</sub> = . . .)			
			220 A (88 °C)	260 A (82 °C)	220 A (88 °C)	260 A (82 °C)
			<b>SKKT</b>	<b>SKKT</b>	<b>SKKH</b>	<b>SKKH</b>
900	800	1000	<b>210/08 E</b>	<b>250/08 E</b>	–	–
1300	1200	1000	<b>210/12 E</b>	<b>250/12 E</b>	<b>210/12 E</b>	<b>250/12 E</b>
1500	1400	1000	<b>210/14 E</b>	<b>250/14 E</b>	<b>210/14 E</b>	<b>250/14 E</b>
1700	1600	1000	<b>210/16 E</b>	<b>250/16 E</b>	<b>210/16 E</b>	<b>250/16 E</b>
1900	1800	1000	<b>210/18 E</b>	<b>250/18 E</b>	<b>210/18 E</b>	<b>250/18 E</b>
2100	2000	1000	<b>210/20 E H4<sup>3)</sup></b>	–	<b>210/20 E H4<sup>3)</sup></b>	–
2300	2200	1000	<b>210/22 E H4<sup>3)</sup></b>	–	<b>210/22 E H4<sup>3)</sup></b>	–

## SEMIPACK® 3 Thyristor / Diode Modules

**SKKT 210**      **SKKH 210**  
**SKKT 250**      **SKKH 250**



Symbol	Conditions	SKKT 210 SKKH 210	SKKT 250 SKKH 250	Units
I <sub>TAV</sub>	sin. 180; (T <sub>case</sub> = ...)	210 (90°C)	250 (85°C)	A
I <sub>D</sub>	B2/B6   T <sub>amb</sub> = 35 °C; P 16/200 F	420/550	450/585	A
I <sub>RMS</sub>	W1/W3   T <sub>amb</sub> = 35 °C; P 16/200 F	526/3 x 440	566/3 x 471	A
I <sub>TSM</sub>	T <sub>vj</sub> = 25 °C; 10 ms	8 500	9 000	A
	T <sub>vj</sub> = 130 °C; 10 ms	7 500	8 000	A
i <sup>2</sup> t	T <sub>vj</sub> = 25 °C; 8,3 ... 10 ms	361 000	405 000	A <sup>2</sup> s
	T <sub>vj</sub> = 130 °C; 8,3 ... 10 ms	281 000	320 000	A <sup>2</sup> s
t <sub>gd</sub>	T <sub>vj</sub> = 25 °C; I <sub>G</sub> = 1 A di <sub>G</sub> /dt = 1 A/μs		1	μs
t <sub>gr</sub>	V <sub>D</sub> = 0,67 · V <sub>DRM</sub>		2	μs
(di/dt) <sub>cr</sub>	T <sub>vj</sub> = 130 °C		250	A/μs
t <sub>q</sub>	T <sub>vj</sub> = 130 °C		typ. 50 ... 150	μs
I <sub>H</sub>	T <sub>vj</sub> = 25 °C; typ. / max.		150 / 500	mA
I <sub>L</sub>	T <sub>vj</sub> = 25 °C; R <sub>G</sub> = 33 Ω; typ. / max.		0,3 / 2	A
V <sub>T</sub>	T <sub>vj</sub> = 25 °C; I <sub>T</sub> = 750 A	max. 1,5	max. 1,4	V
V <sub>T(TO)</sub>	T <sub>vj</sub> = 130 °C	0,95	0,925	V
r <sub>T</sub>	T <sub>vj</sub> = 130 °C	0,6	0,45	mΩ
I <sub>DD</sub> ; I <sub>RD</sub>	T <sub>vj</sub> = 130 °C; V <sub>RD</sub> = V <sub>RRM</sub> V <sub>DD</sub> = V <sub>DRM</sub>	50	50	mA
V <sub>GT</sub>	T <sub>vj</sub> = 25 °C; d.c.		3	V
I <sub>GT</sub>	T <sub>vj</sub> = 25 °C; d.c.		200	mA
V <sub>GD</sub>	T <sub>vj</sub> = 130 °C; d.c.		0,25	V
I <sub>GD</sub>	T <sub>vj</sub> = 130 °C; d.c.		10	mA
R <sub>thjc</sub>	cont. } sin. 180 } per thyristor / rec. 120 } per module	0,14 / 0,07		°C/W
		0,15 / 0,075		°C/W
		0,165 / 0,083		°C/W
R <sub>thch</sub>		0,04 / 0,02		°C/W
T <sub>vj</sub> , T <sub>stg</sub>		– 40 ... + 130		°C
V <sub>isol</sub>	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 / 3000		V~
M <sub>1</sub>	to heatsink } SI (US) units	5 (44 lb. in.) ± 15 % <sup>1)</sup>		Nm
M <sub>2</sub>	to terminals }	9 (80 lb. in.) ± 15 % <sup>2)</sup>		Nm
a		5 · 9,81		m/s <sup>2</sup>
w	approx.	750		g
Case		SKKT: A 73 a	SKKH: A 76 a	



### Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- Thyristor with amplifying gate
- 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)
- AC motor starters

<sup>1)</sup> See the assembly instructions  
<sup>2)</sup> The screws must be lubricated  
<sup>3)</sup> V<sub>isol</sub> 1 s/1 min. = 4800/4000 V~

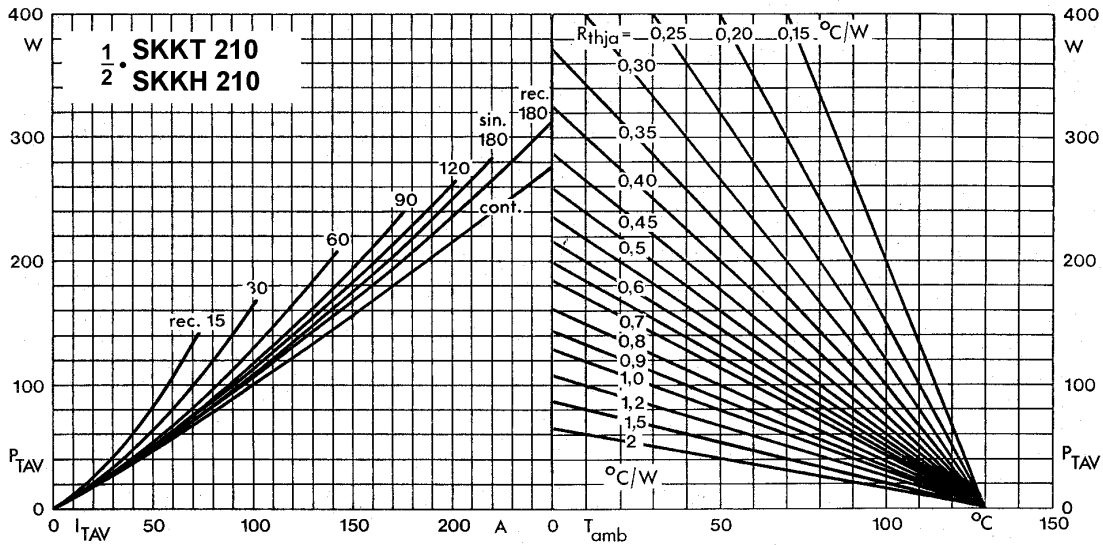


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

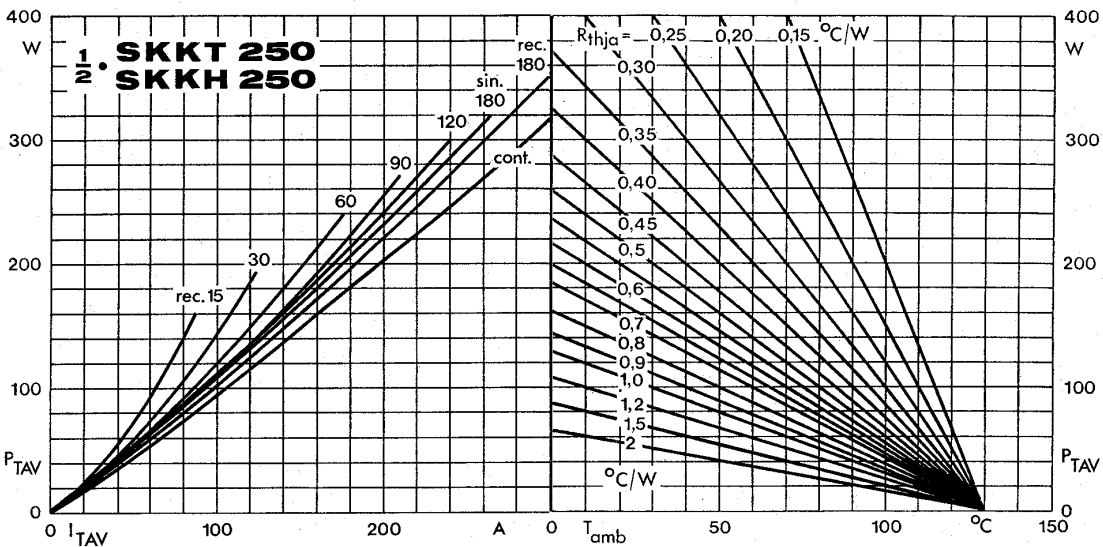


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

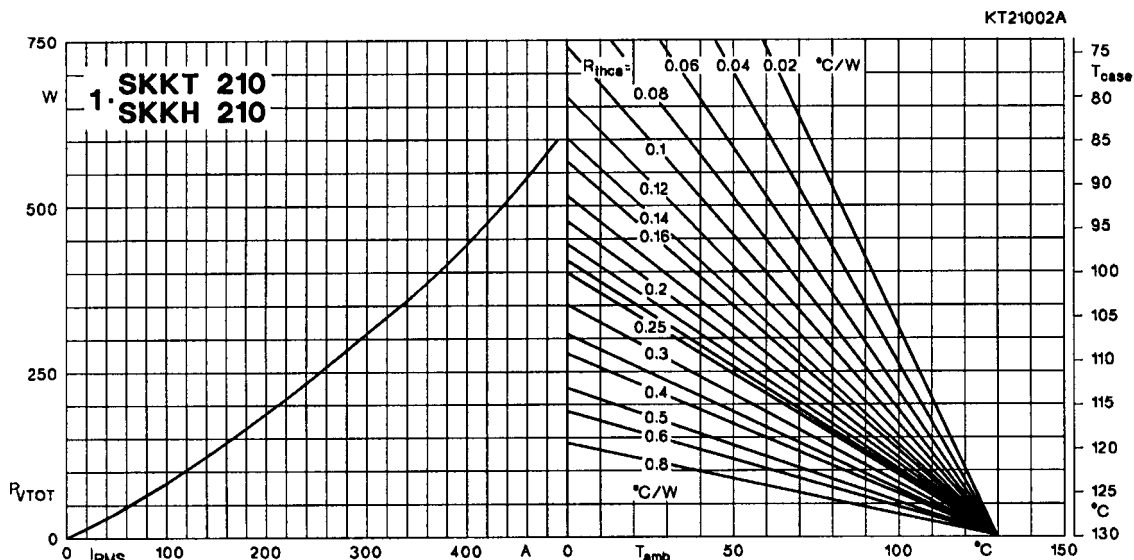


Fig. 2 a Power dissipation per module vs. rms current and case temperature

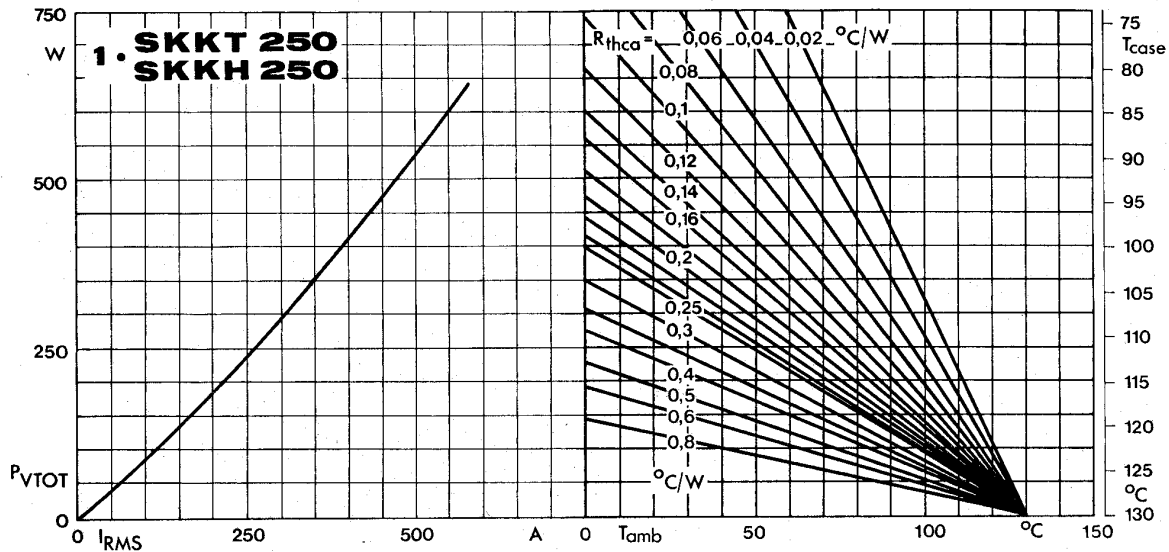


Fig. 2 b Power dissipation per module vs. rms current and case temperature

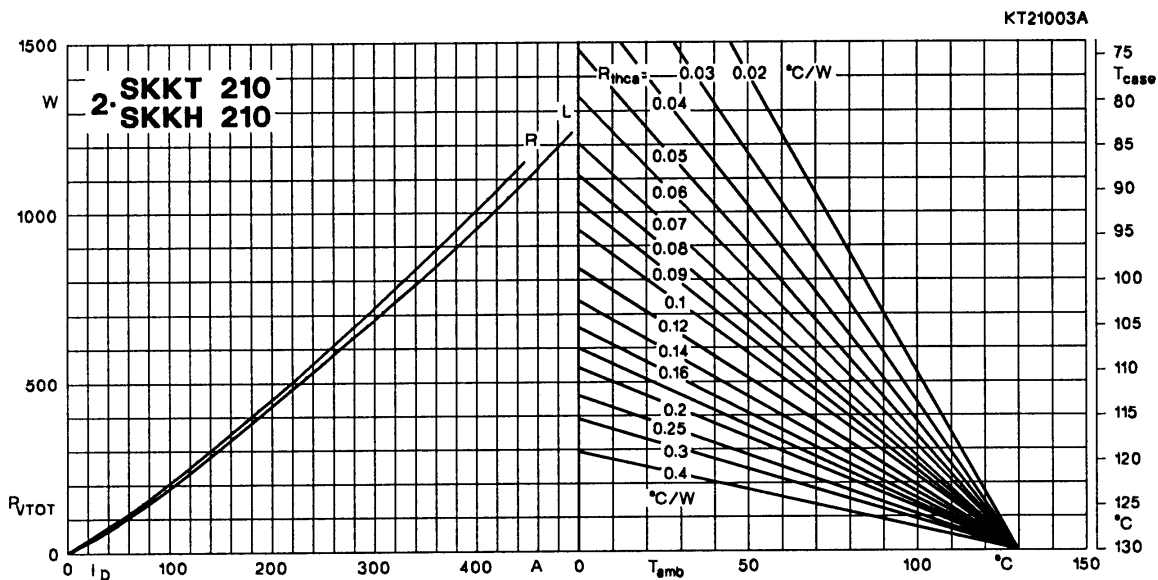


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

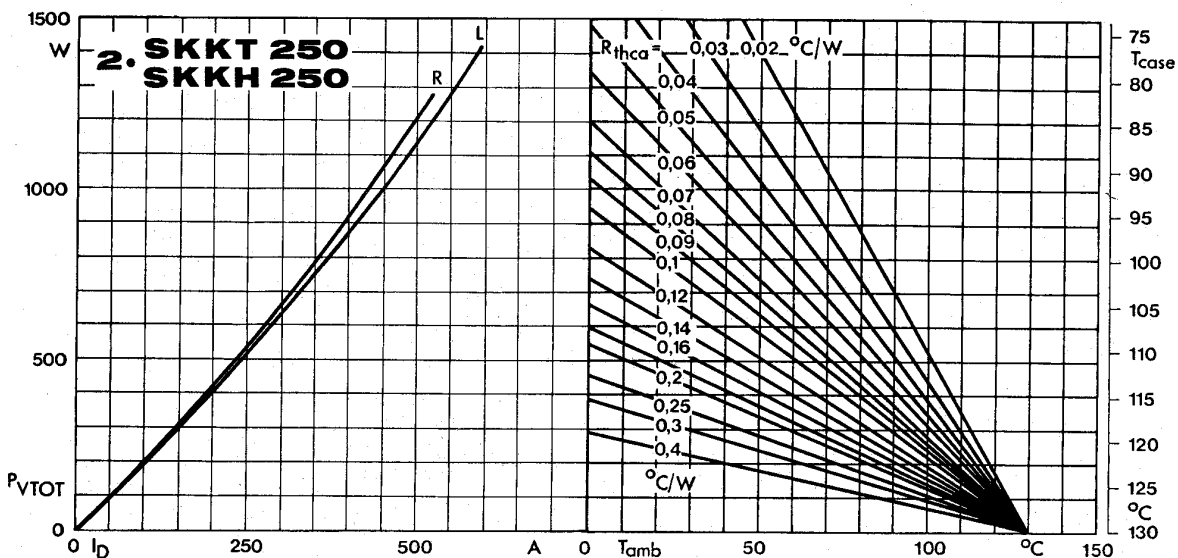


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

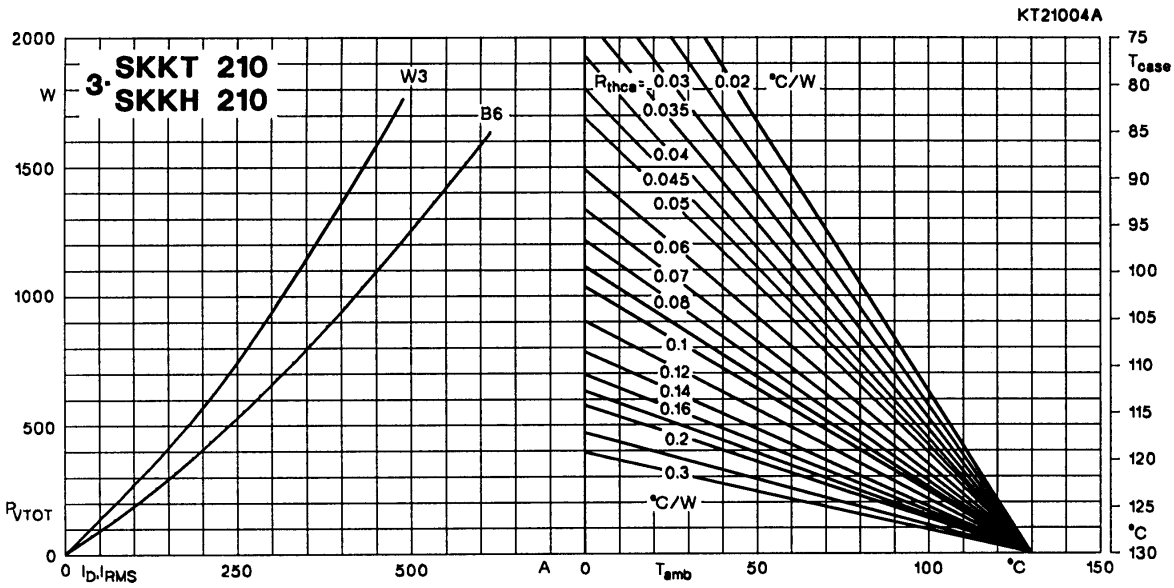


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

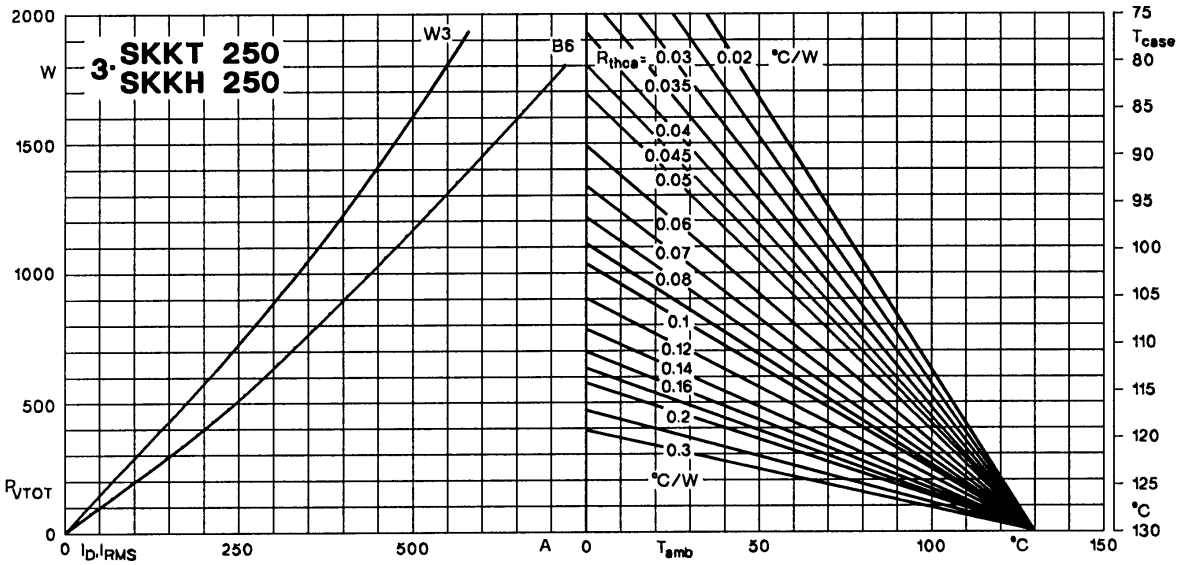


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

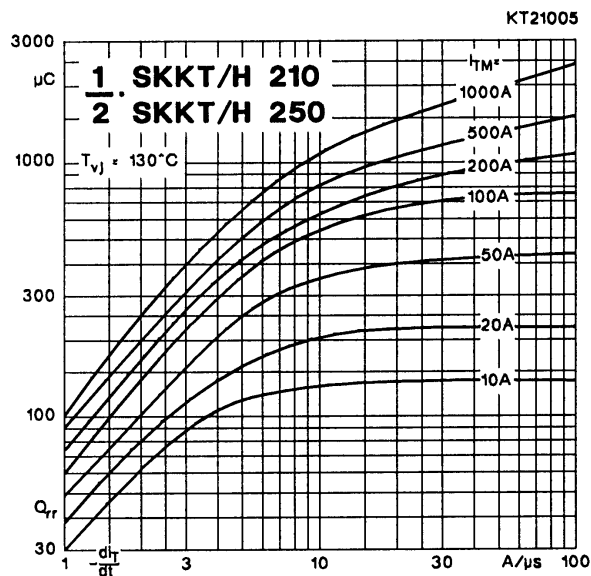


Fig. 5 Recovered charge vs. current decrease

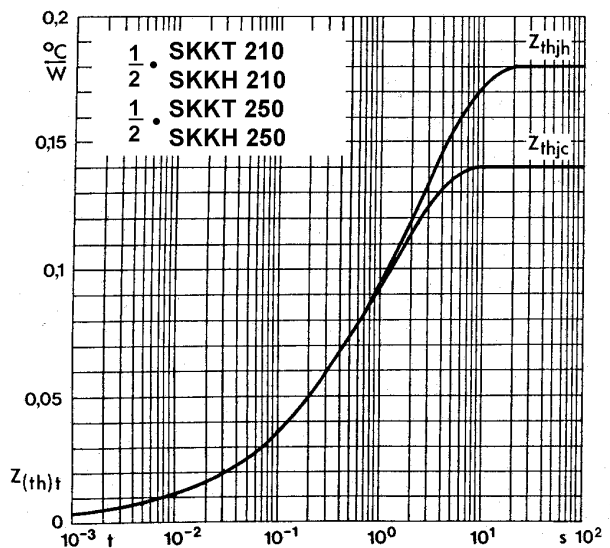


Fig. 6 Transient thermal impedance vs. time

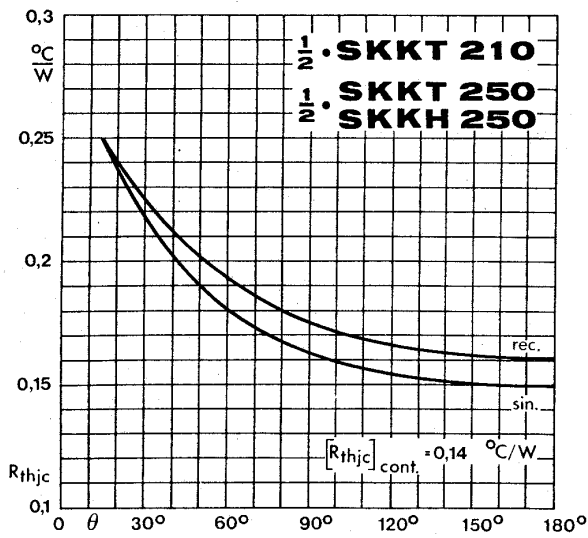


Fig. 7 Thermal resistance vs. conduction angle

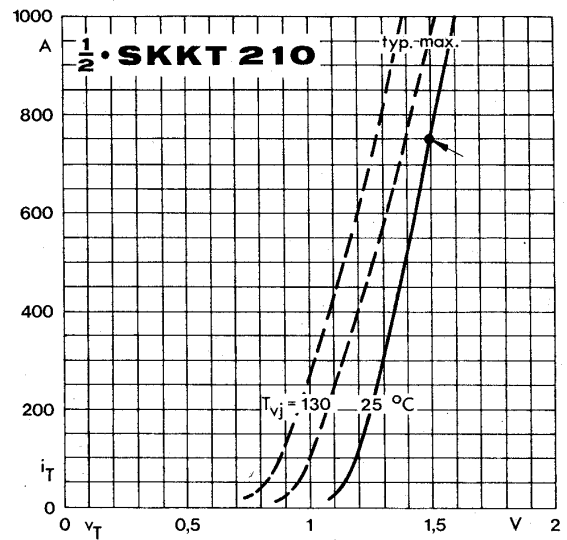


Fig. 8 a On-state characteristics

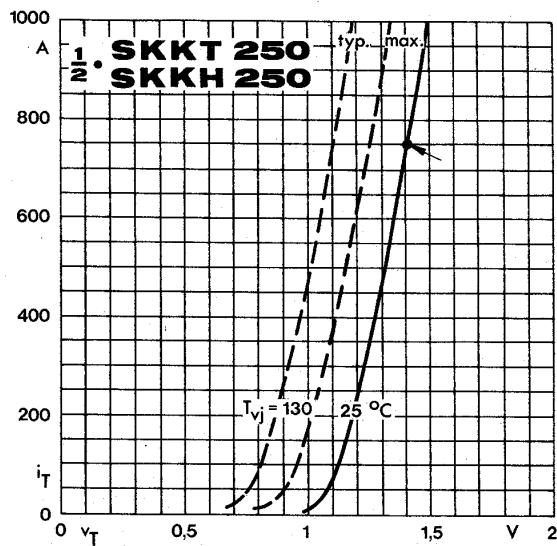


Fig. 8 b On-state characteristics

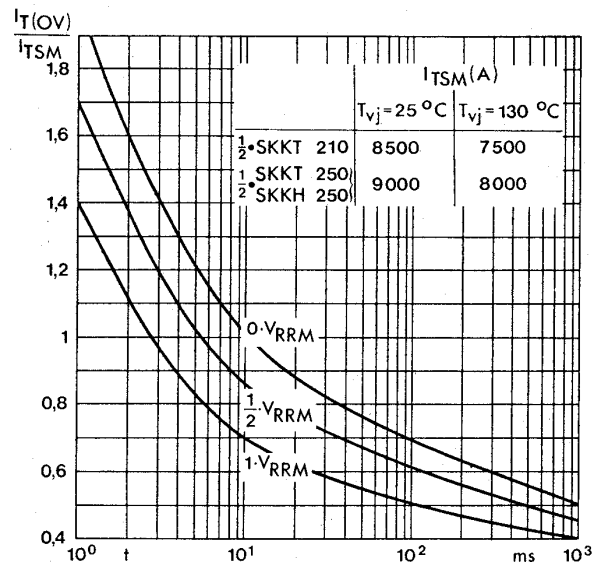


Fig. 9 Surge overload current vs. time

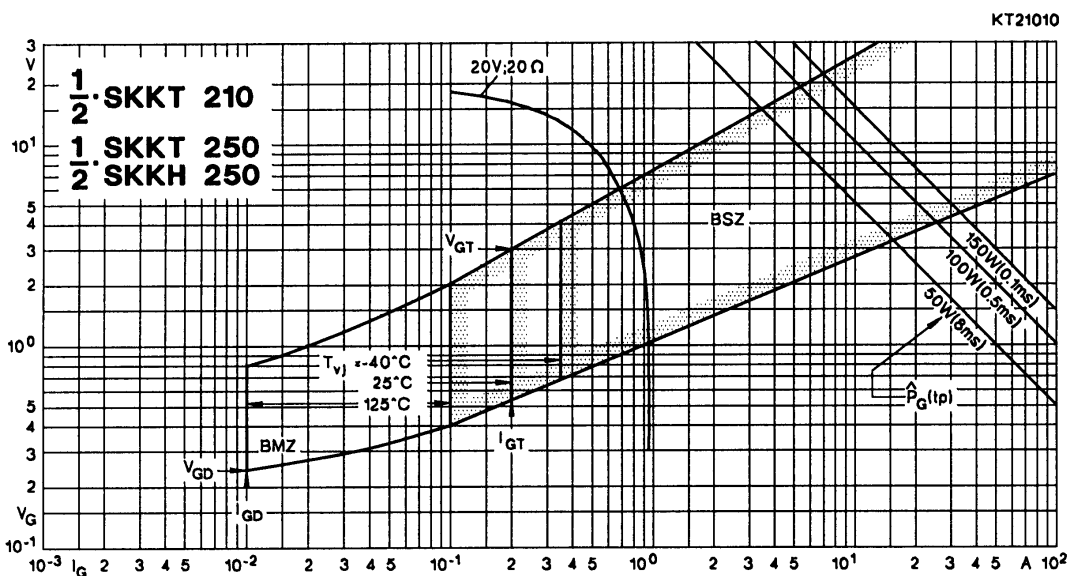
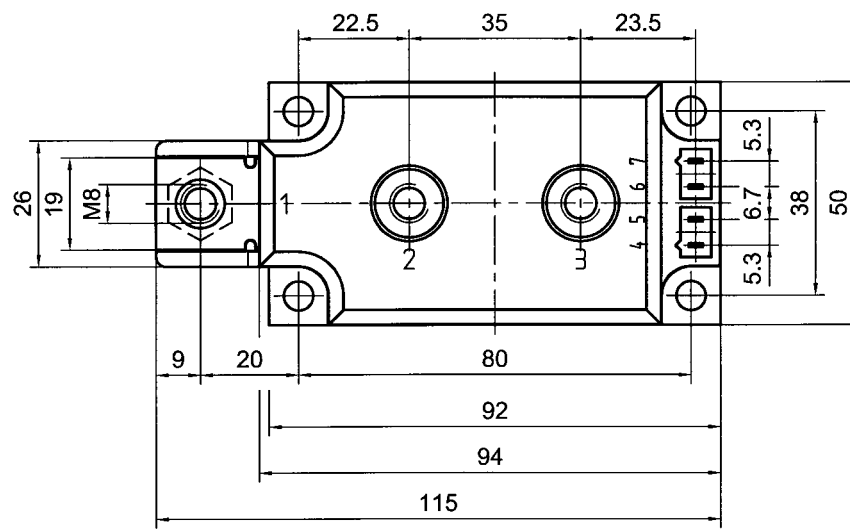
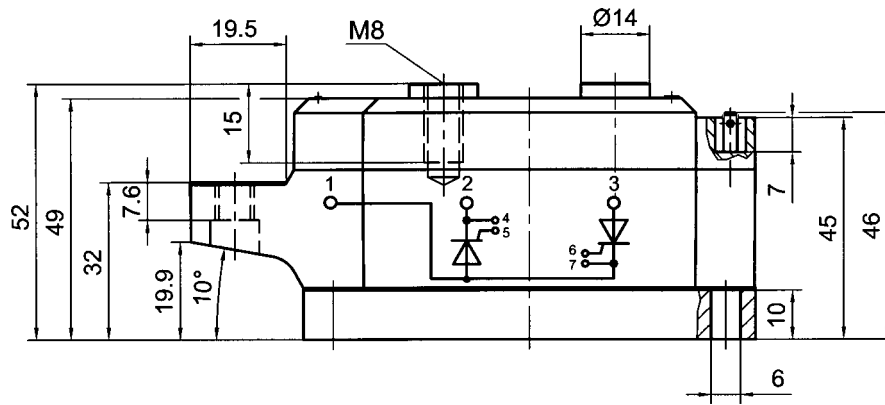


Fig. 10 Gate trigger characteristics

**SKKT 210**

**SKKT 250**

Case A 73 a  
SEMIPACK® 3



Dimensions in mm

**SKKH 210**

**SKKH 250**

Case A 76 a

