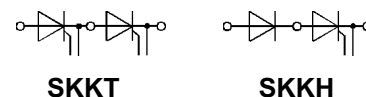


SEMIPACK® 3 Thyristor / Diode Modules

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



SKKT

SKKH

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

¹⁾ See the assembly instructions

²⁾ The screws must be lubricated

³⁾ V_{isol} 1 s/1 min. = 4800/4000 V~

V_{RSM}	V_{RRM}	$(di/dt)_{cr}$	I_{TRMS} (maximum values for continuous operation)			
			350 A	420 A	350 A	420 A
V	V	V/ μ s	I_{TAV} (sin. 180; $T_{case} = \dots$)			
			220 A (88 °C)	260 A (82 °C)	220 A (88 °C)	260 A (82 °C)
			SKKT	SKKT	SKKH	SKKH
900	800	1000	210/08 E	250/08 E	–	–
1300	1200	1000	210/12 E	250/12 E	210/12 E	250/12 E
1500	1400	1000	210/14 E	250/14 E	210/14 E	250/14 E
1700	1600	1000	210/16 E	250/16 E	210/16 E	250/16 E
1900	1800	1000	210/18 E	250/18 E	210/18 E	250/18 E
2100	2000	1000	210/20 E H4³⁾	–	210/20 E H4³⁾	–
2300	2200	1000	210/22 E H4³⁾	–	210/22 E H4³⁾	–

Symbol	Conditions	SKKT 210 SKKH 210	SKKT 250 SKKH 250	Units
I_{TAV}	sin. 180; ($T_{case} = \dots$)	210 (90°C)	250 (85°C)	A
I_D	B2/B6 $T_{amb} = 35$ °C; P 16/200 F	420/550	450/585	A
I_{RMS}	W1/W3 $T_{amb} = 35$ °C; P 16/200 F	526/3 x 440	566/3 x 471	A
I_{TSM}	$T_{vj} = 25$ °C; 10 ms	8 500	9 000	A
	$T_{vj} = 130$ °C; 10 ms	7 500	8 000	A
i^2t	$T_{vj} = 25$ °C; 8,3 ... 10 ms	361 000	405 000	A ² s
	$T_{vj} = 130$ °C; 8,3 ... 10 ms	281 000	320 000	A ² s
t_{gd}	$T_{vj} = 25$ °C; $I_G = 1$ A $di_G/dt = 1$ A/ μ s	1		μ s
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	2		μ s
$(di/dt)_{cr}$	$T_{vj} = 130$ °C	250		A/ μ s
t_q	$T_{vj} = 130$ °C	typ. 50 ... 150		μ s
I_H	$T_{vj} = 25$ °C; typ. / max.	150 / 500		mA
I_L	$T_{vj} = 25$ °C; $R_G = 33$ Ω ; typ. / max.	0,3 / 2		A
V_T	$T_{vj} = 25$ °C; $I_T = 750$ A	max. 1,5	max. 1,4	V
$V_{T(TO)}$	$T_{vj} = 130$ °C	0,95	0,925	V
r_T	$T_{vj} = 130$ °C	0,6	0,45	m Ω
I_{DD} ; I_{RD}	$T_{vj} = 130$ °C; $V_{RD} = V_{RRM}$ $V_{DD} = V_{DRM}$	50	50	mA
V_{GT}	$T_{vj} = 25$ °C; d.c.	3		V
I_{GT}	$T_{vj} = 25$ °C; d.c.	200		mA
V_{GD}	$T_{vj} = 130$ °C; d.c.	0,25		V
I_{GD}	$T_{vj} = 130$ °C; d.c.	10		mA
R_{thjc}	cont.	0,14 / 0,07		°C/W
	sin. 180	} per thyristor / per module	0,15 / 0,075	
rec. 120	0,165 / 0,083		°C/W	
R_{thch}		0,04 / 0,02		°C/W
T_{vj} ; T_{stg}		– 40 ... + 130		°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 / 3000		V~
M_1	} to heatsink to terminals	5 (44 lb. in.) \pm 15 % ¹⁾		Nm
M_2		9 (80 lb. in.) \pm 15 % ²⁾		Nm
a		5 · 9,81		m/s ²
w	approx.	750		g
Case		SKKT: A 73 a SKKH: A 76 a		

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

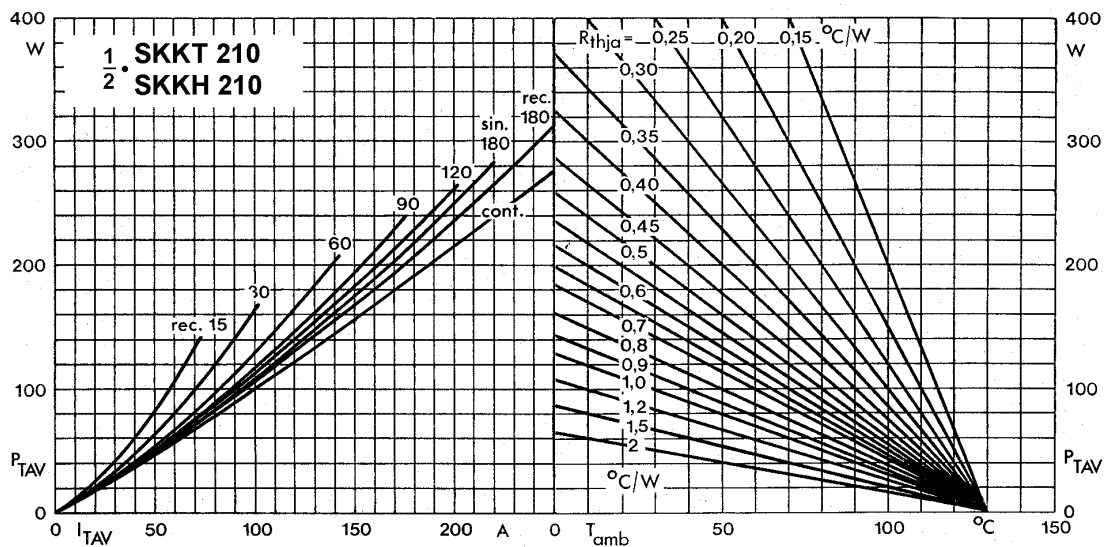


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

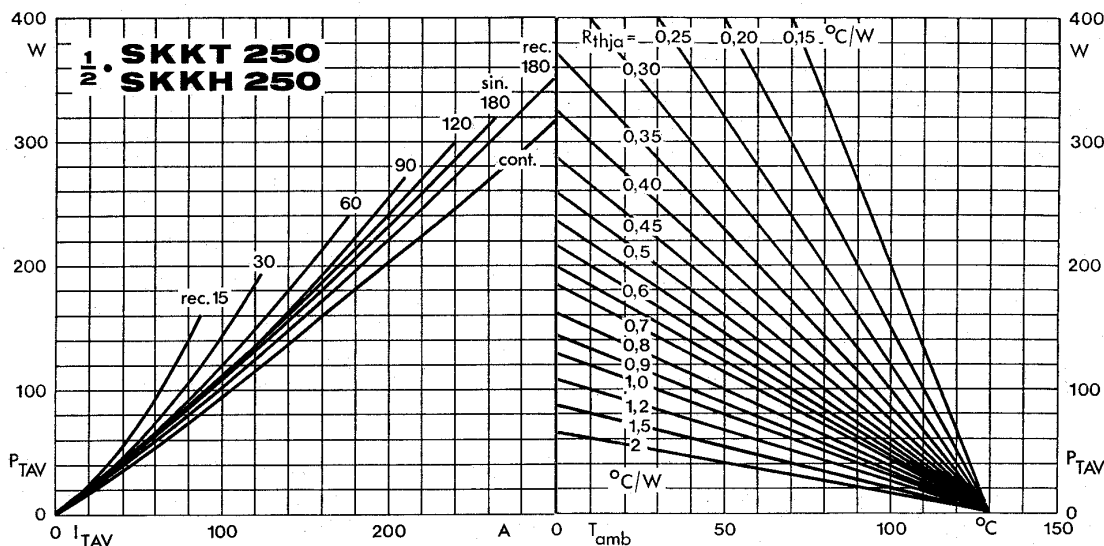


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

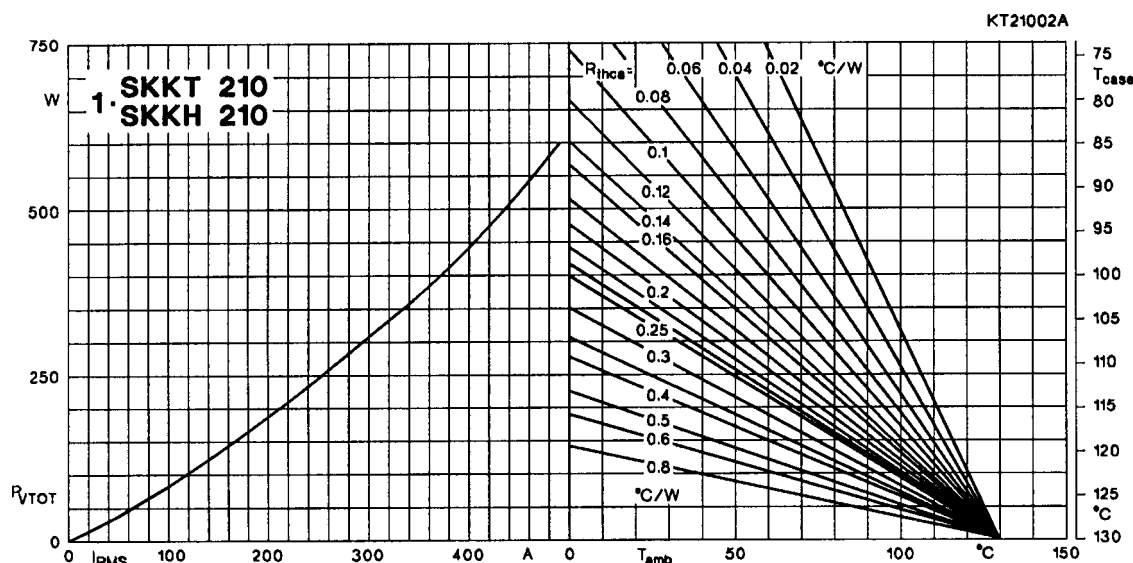


Fig. 2 a Power dissipation per module vs. rms current and case temperature

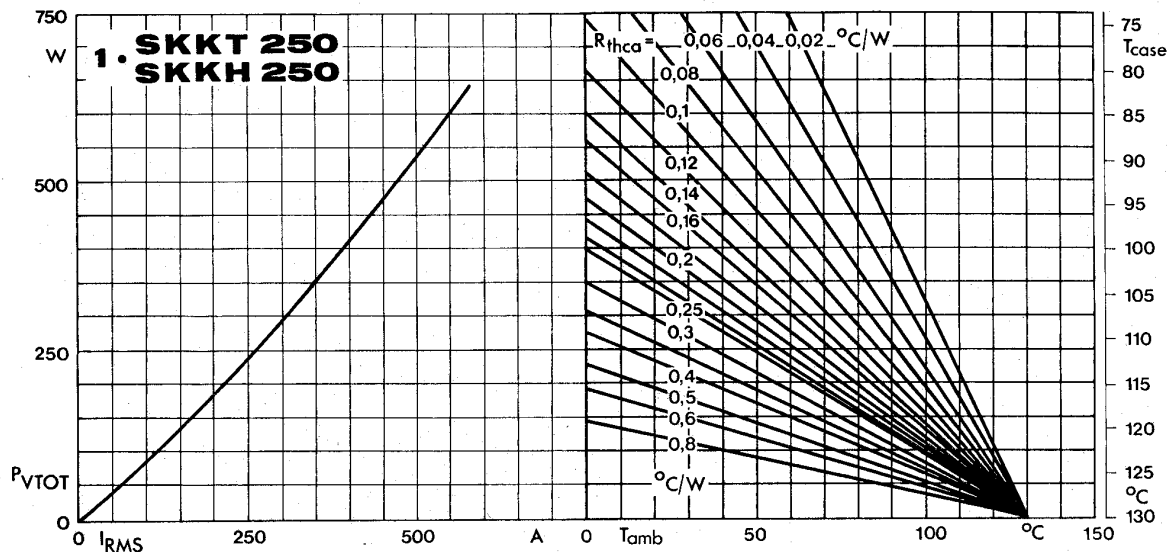


Fig. 2 b Power dissipation per module vs. rms current and case temperature

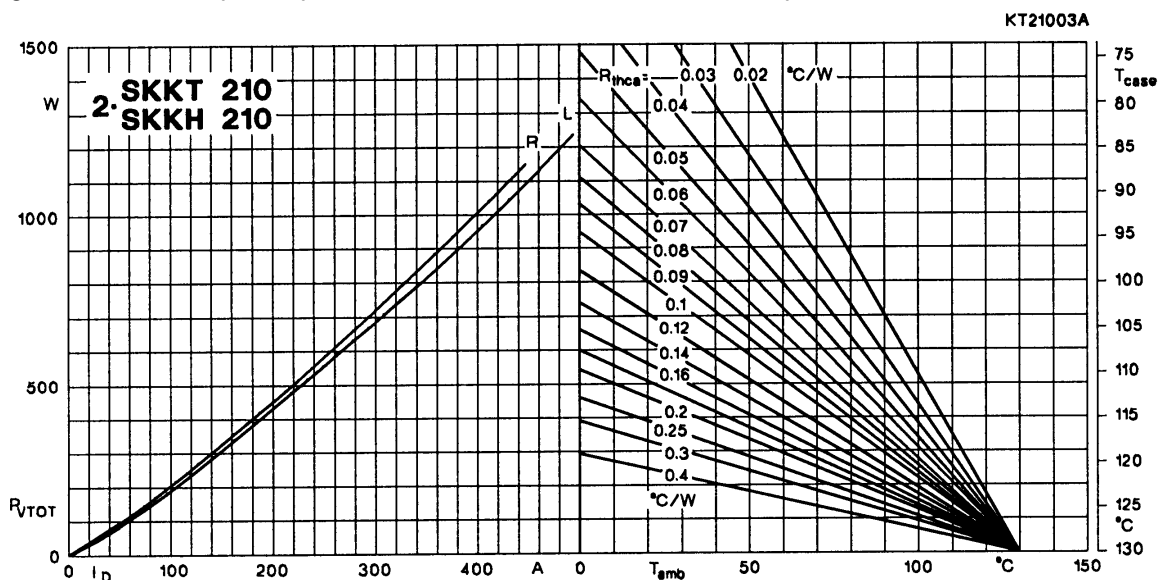


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

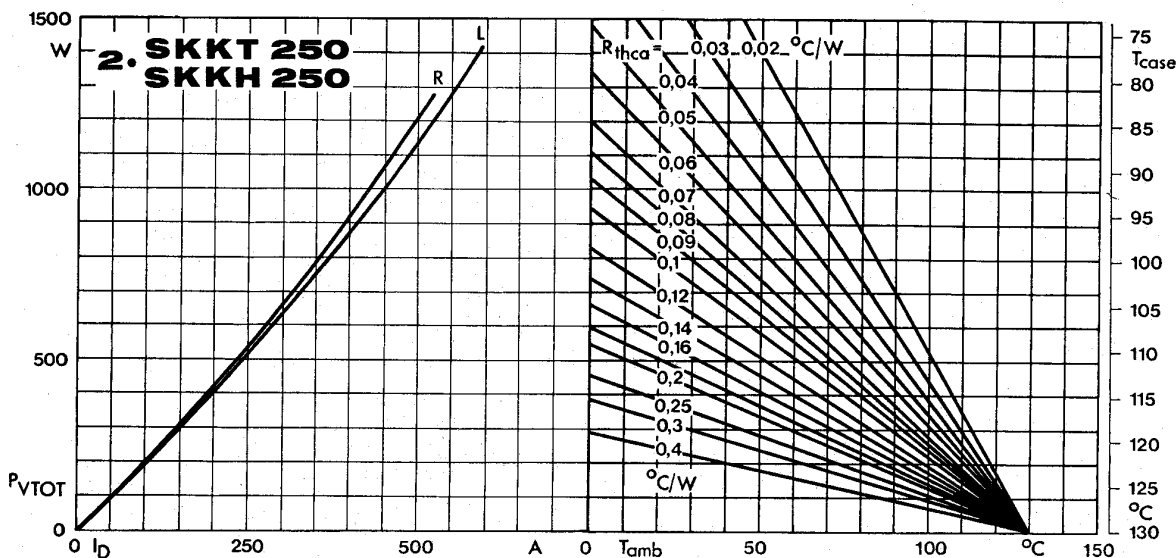


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

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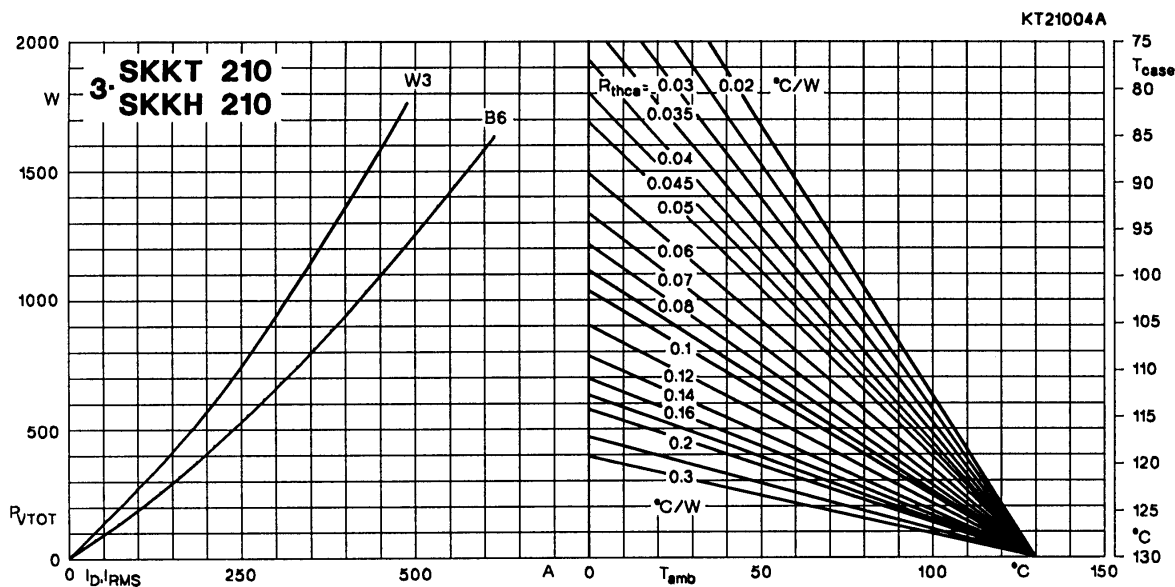


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

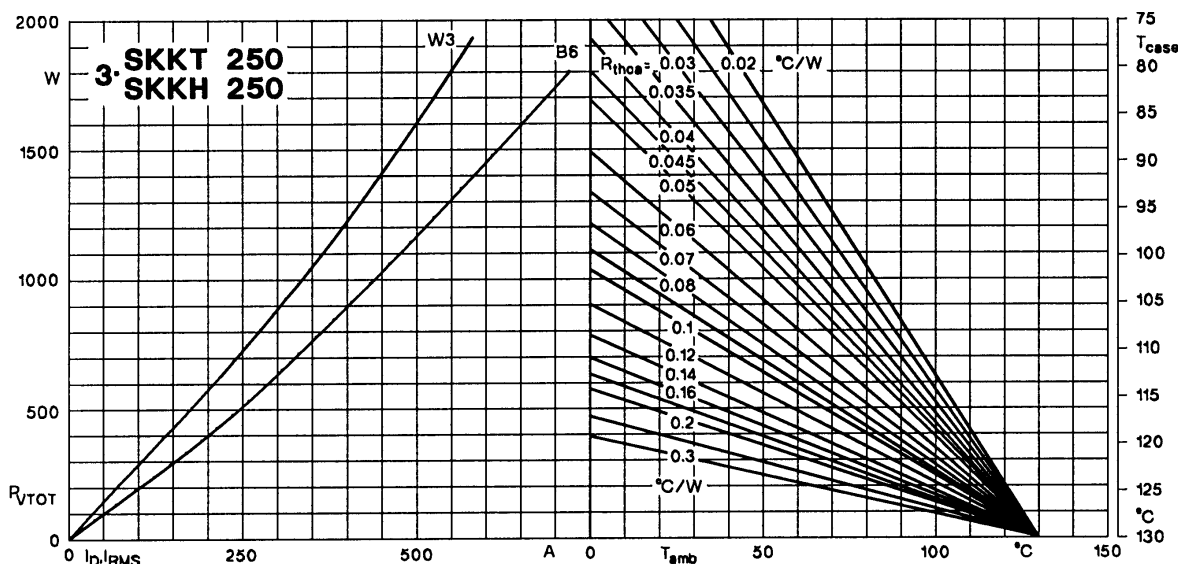


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

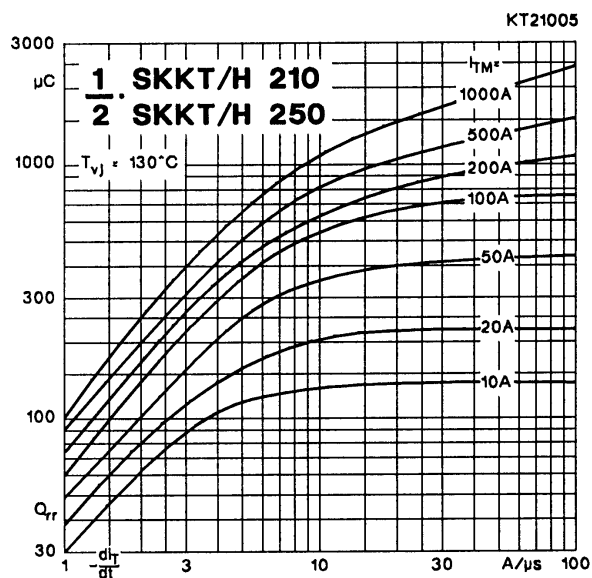


Fig. 5 Recovered charge vs. current decrease

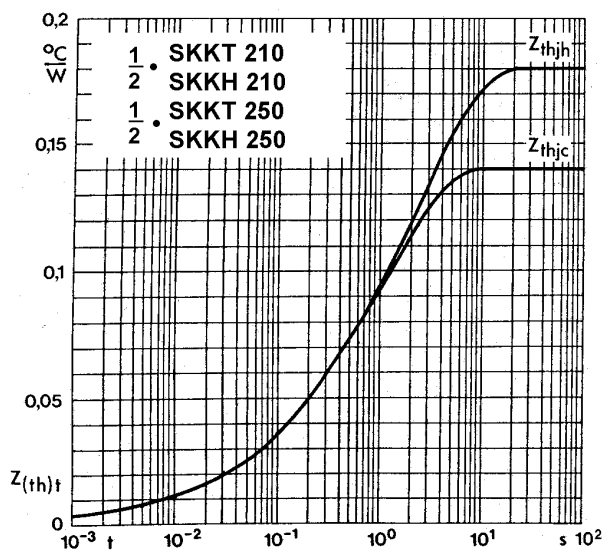


Fig. 6 Transient thermal impedance vs. time

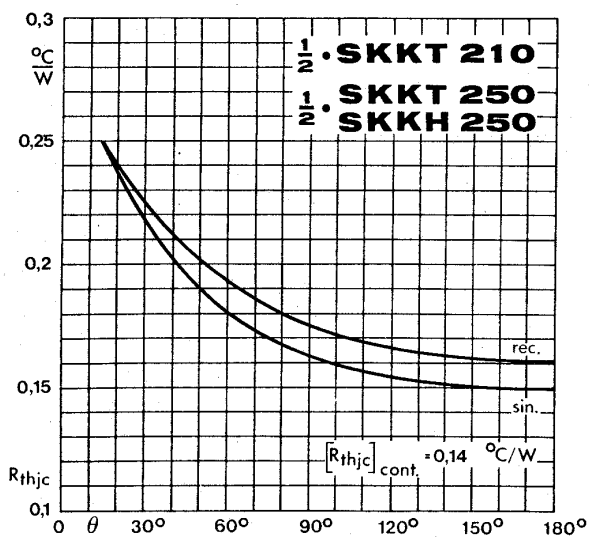


Fig. 7 Thermal resistance vs. conduction angle

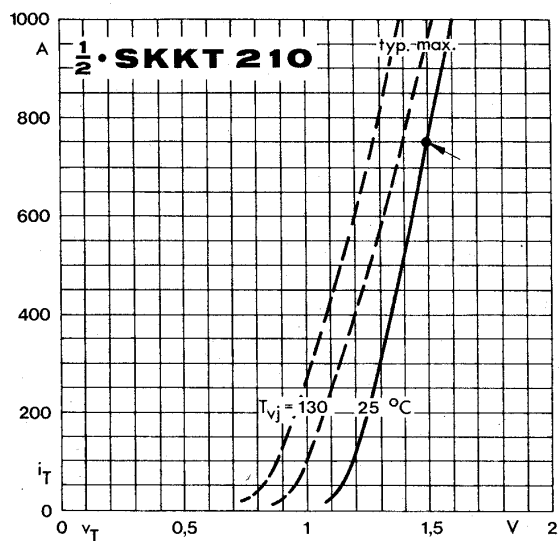


Fig. 8 a On-state characteristics

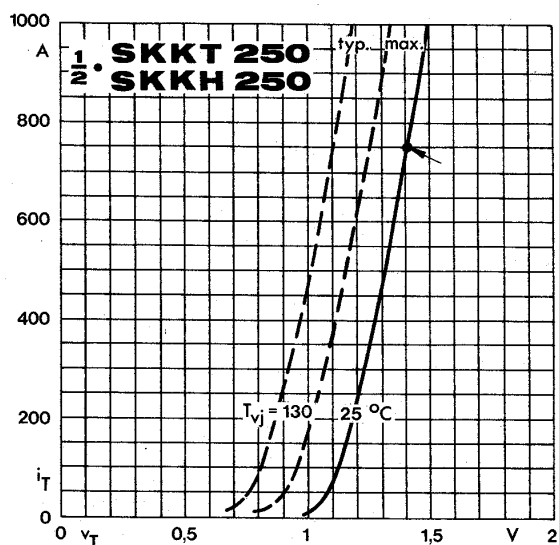


Fig. 8 b On-state characteristics

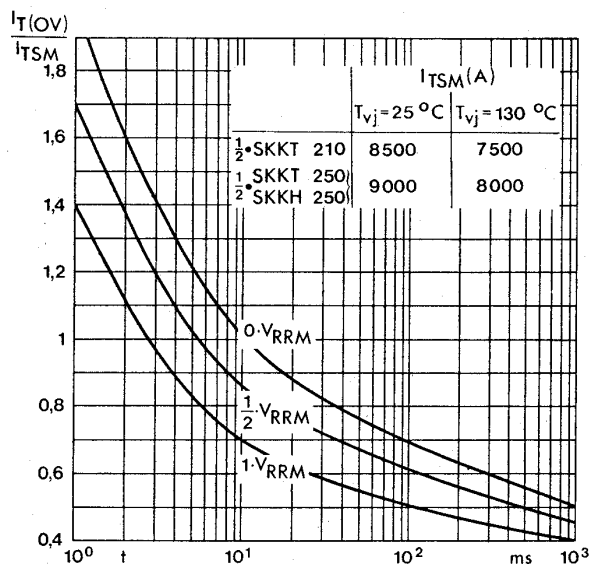


Fig. 9 Surge overload current vs. time

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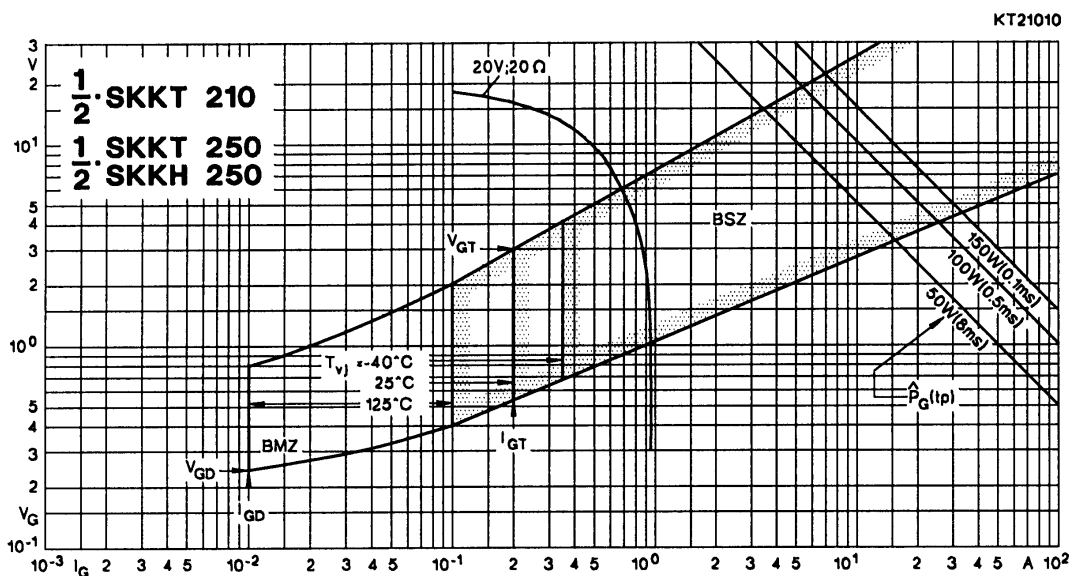
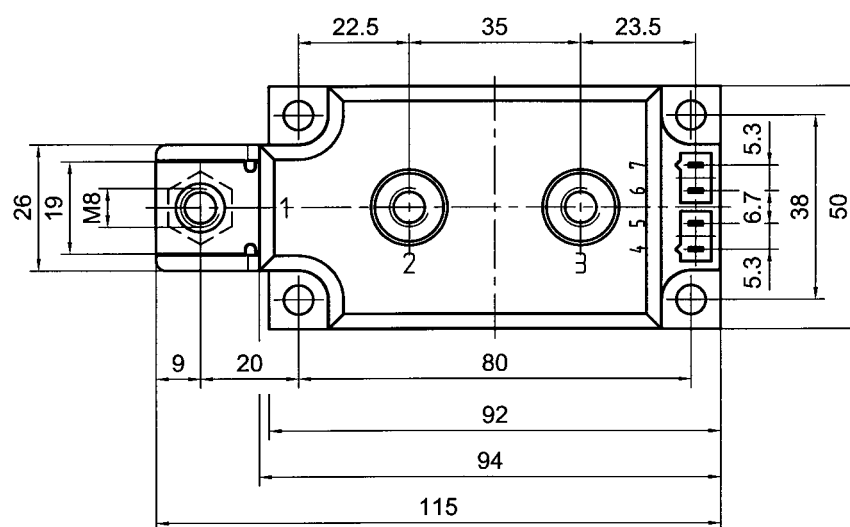
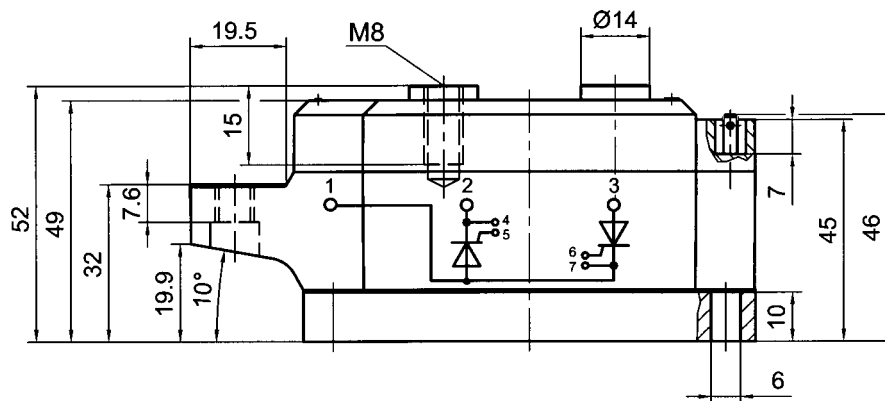


Fig. 10 Gate trigger characteristics

SKKT 210

SKKT 250

Case A 73 a
SEMIPACK® 3



Dimensions in mm

SKKH 210

SKKH 250

Case A 76 a

