

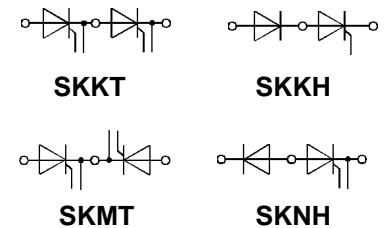
V _{RSM}	V _{RRM}	(dv/dt) _{cr}	I _{TRMS} (maximum value for continuous operation)			
			220 A	250 A	220 A	250 A
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = 80 °C)			
			148 A	168 A	148 A	168 A
900	800	500	SKKT	SKKT	SKKH	SKKH
1300	1200	1000	132/08 D	162/08 D	132/08 D	162/08 D
1500	1400	1000	132/12 E	162/12 E	132/12 E	162/12 E
1700	1600	1000	132/14 E	162/14 E	132/14 E	162/14 E
1900	1800	1000	132/16 E	162/16 E	132/16 E	162/16 E
2100	2000	1000	132/18 E	162/18 E	132/18 E	162/18 E
2300	2200	1000	132/20 E	–	132/20 E	–
			132/22 E	–	132/22 E	–

SEMIKRON® 2 Thyristor / Diode Modules

SKKT 132 **SKKH 132**
SKMT 132¹⁾ **SKNH 132¹⁾**
SKKT 162 **SKKH 162**



Symbol	Conditions	SKKT 132 SKKH 132	SKKT 162 SKKH 162	Units
I _{TAV}	sin. 180; (T _{case} = . . .)	130 (87 °C)	160 (83 °C)	A
I _D	B2/B6 T _{amb} = 45 °C; P 3/180	77 / 100	–	A
	T _{amb} = 35 °C; P 3/180 F	170 / 200	190 / 230	A
	P 16/200 F	250 / 320	290 / 360	A
I _{RMS}	W1/W3 P 3/180 F	240 / 3 x 163	265 / 3 x 185	A
	P 16/200 F	305 / 3 x 250	333 / 3 x 312	A
I _{TSM}	T _{vj} = 25 °C; 10 ms	4 700	5 400	A
	T _{vj} = 125 °C; 10 ms	4 000	5 000	A
i ² t	T _{vj} = 25 °C; 8,3 ... 10 ms	110 000	145 000	A ² s
	T _{vj} = 125 °C; 8,3 ... 10 ms	80 000	125 000	A ² s
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} = 125 °C		200	A/μs
t _q	T _{vj} = 125 °C		typ. 50 . . . 150	μs
I _H	T _{vj} = 25 °C; typ./max.		150 / 400	mA
I _L	T _{vj} = 25 °C; R _G = 33 Ω; typ./max.		0,3 / 1	A
V _T	T _{vj} = 25 °C; I _T = 500 A	max. 1,8	max. 1,6	V
V _{T(TO)}	T _{vj} = 125 °C	1	0,85	V
r _T	T _{vj} = 125 °C	1,6	1,5	mΩ
I _{DD} ; I _{RD}	T _{vj} = 125 °C; V _{DRM} ; V _{RRM}	max. 40	max. 40	mA
V _{GT}	T _{vj} = 25 °C; d.c.		2	V
I _{GT}	T _{vj} = 25 °C; d.c.		150	mA
V _{GD}	T _{vj} = 125 °C; d.c.		0,25	V
I _{GD}	T _{vj} = 125 °C; d.c.		10	mA
R _{thjc}	cont. } per thyristor / sin. 180 } per module rec. 120 }	0,18 / 0,09 0,19 / 0,095 0,21 / 0,105	0,17 / 0,085 0,18 / 0,09 0,20 / 0,10	°C/W °C/W °C/W
R _{thch}		0,10 / 0,05		°C/W
T _{vj} , T _{stg}		– 40 ... + 125		°C
V _{isol}	a. c. 50 Hz; r.m.s; 1 s/1 min		3600 / 3000	V~
M ₁	to heatsink } SI (US) units		5 (44 lb. in.) ± 15 % ²⁾	Nm
M ₂	to terminals }		5 (44 lb. in.) ± 15 %	Nm
a			5 · 9,81	m/s ²
w	approx.		250	g
Case	→ page B 1 – 96	SKKT: A 21 SKKH: A 22	SKMT: A 50 SKNH: A 61	



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)
- SKNH 162 for DC braking of induction motors, for circuit see page B 1 – 97

¹⁾ SKMT 132, SKNH 132 available on request

²⁾ See the assembly instructions

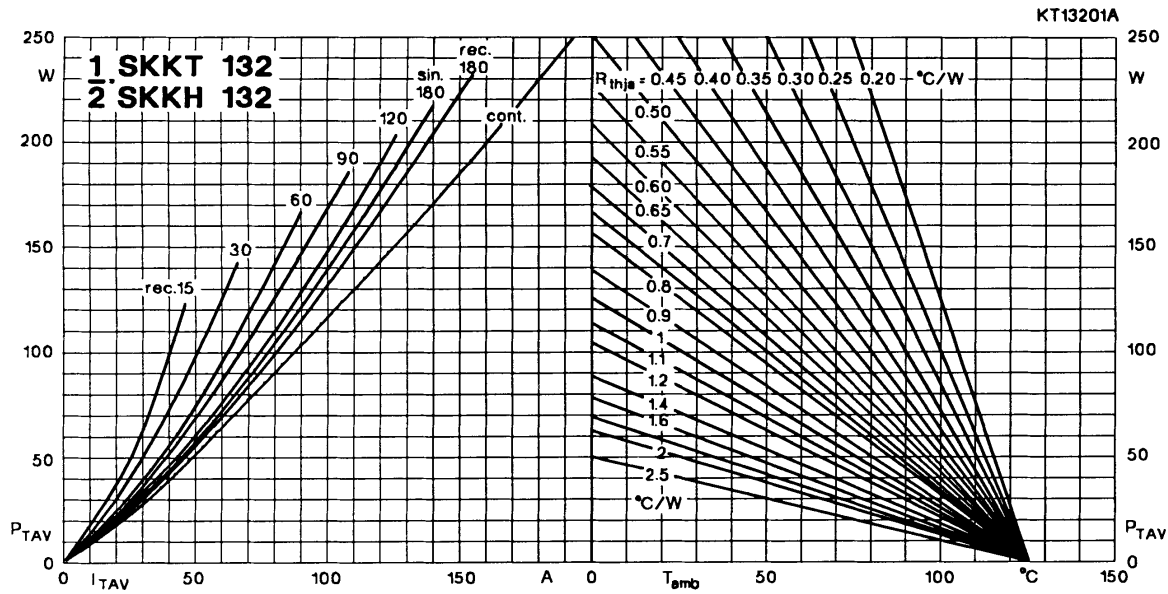


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

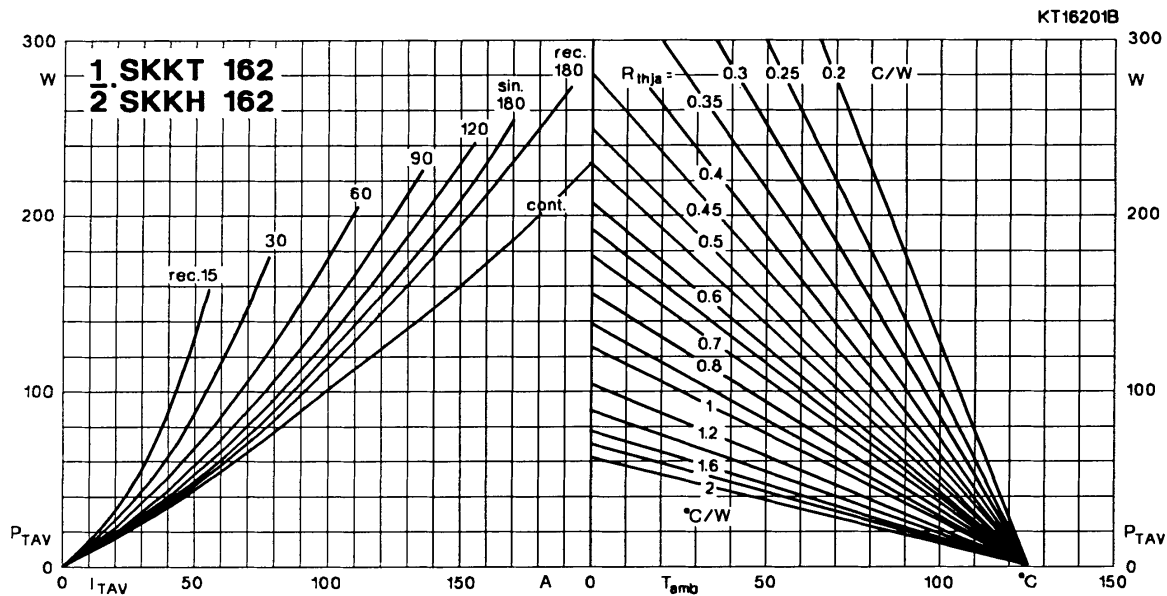


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

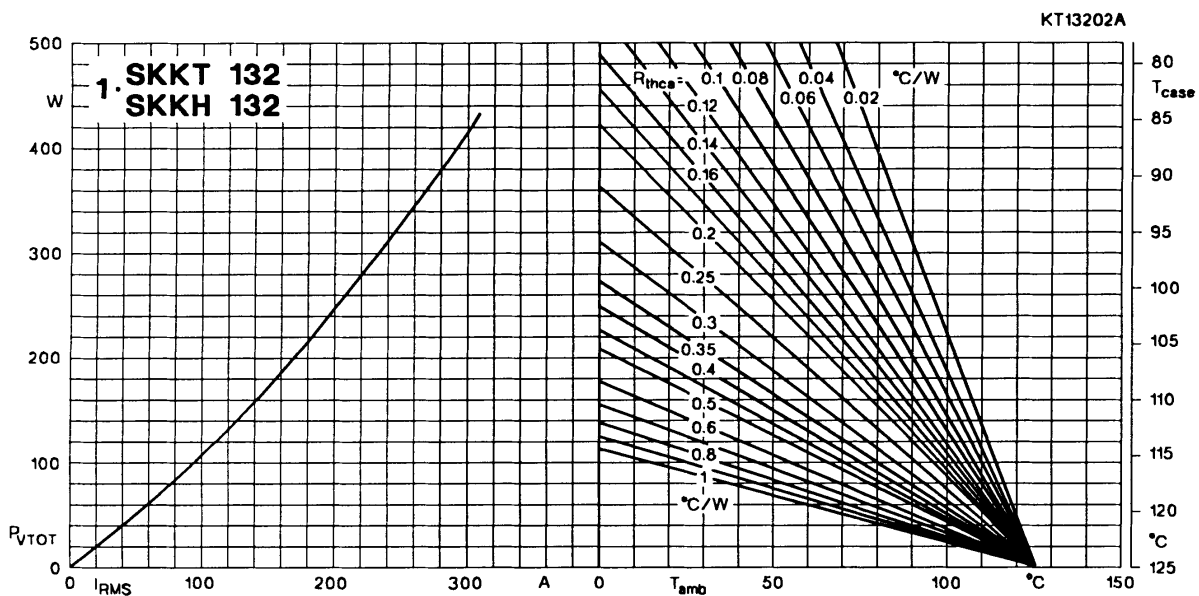


Fig. 2 a Power dissipation per module vs. rms current and case temperature

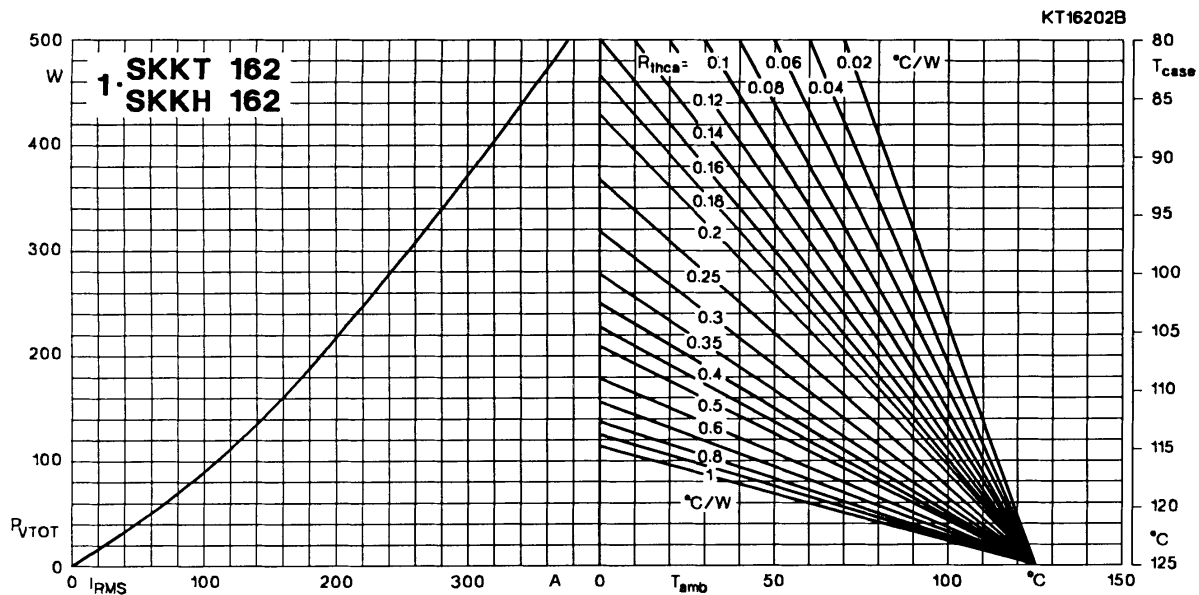


Fig. 2 b Power dissipation per module vs. rms current and case temperature

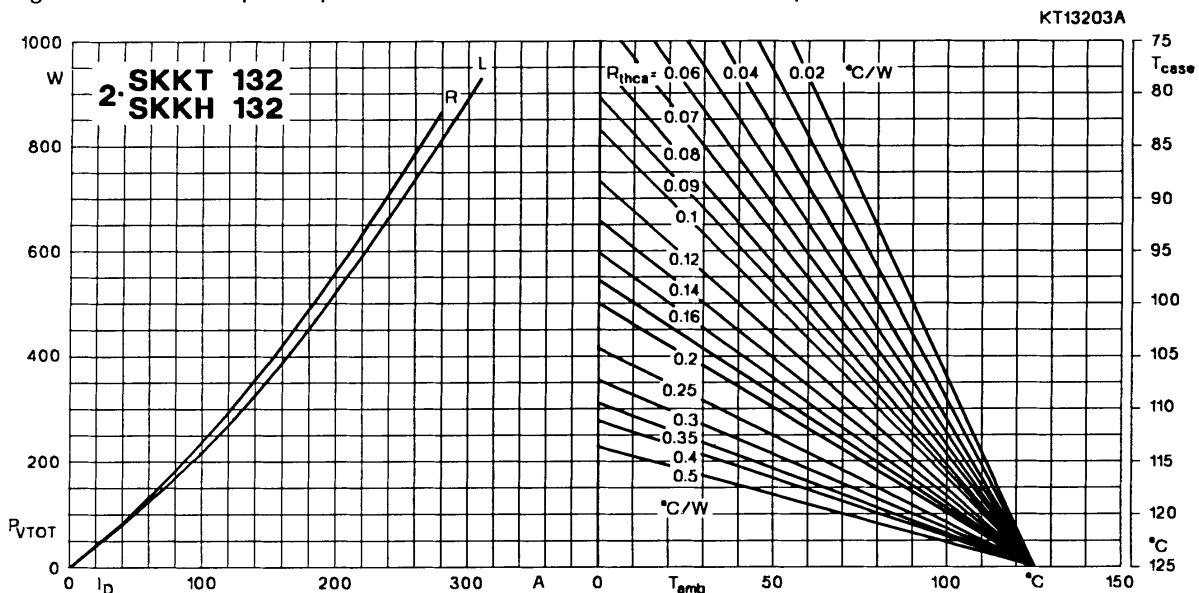


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

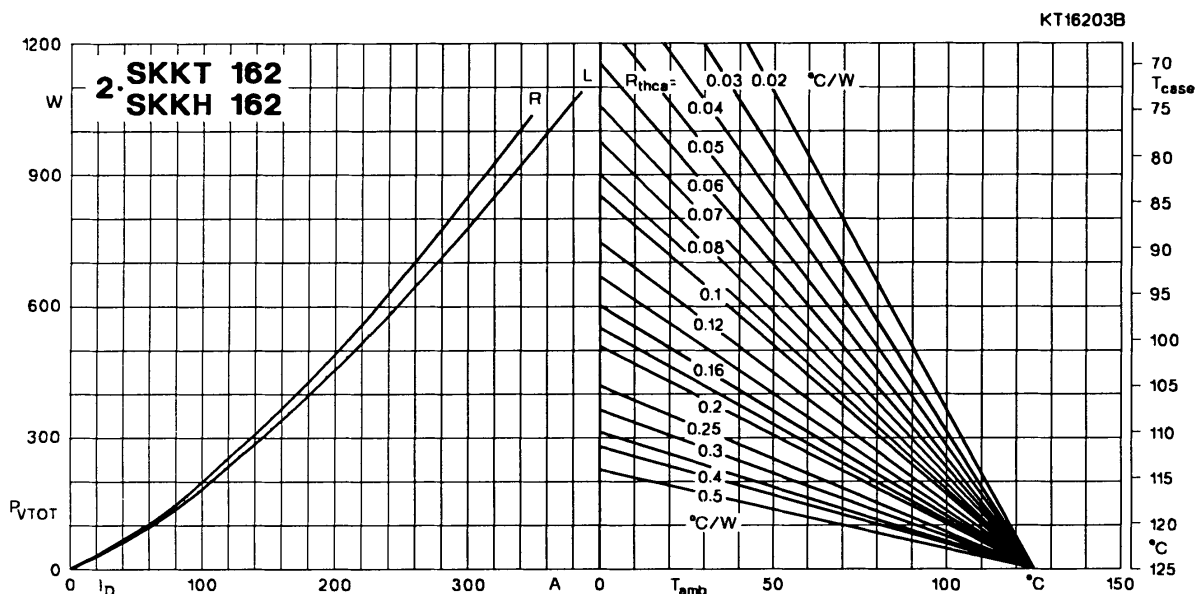


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

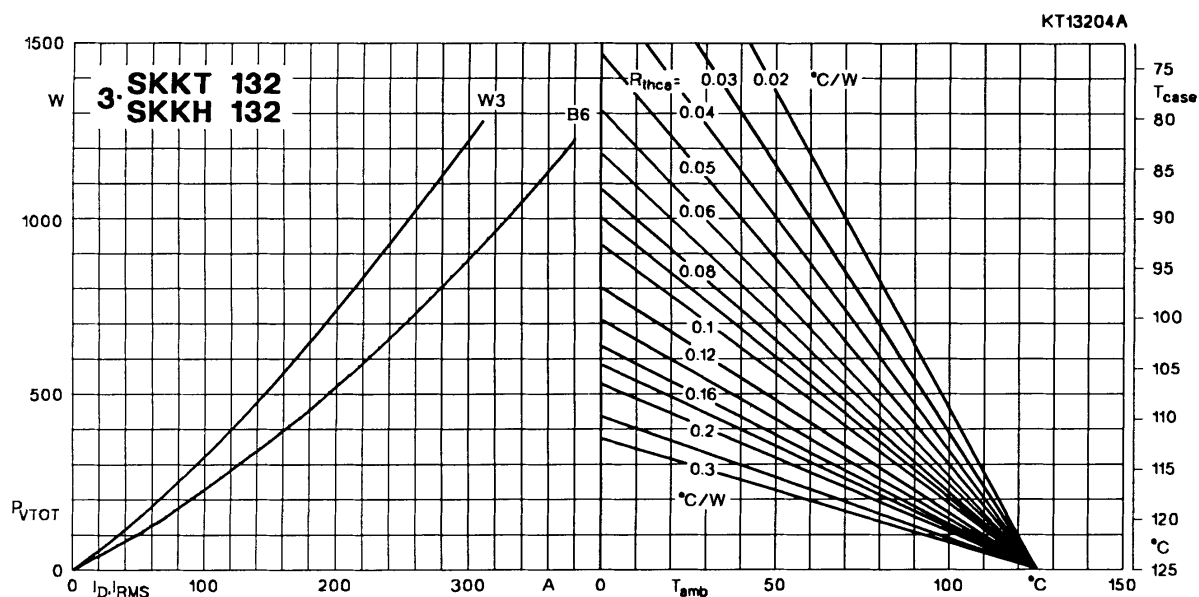


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

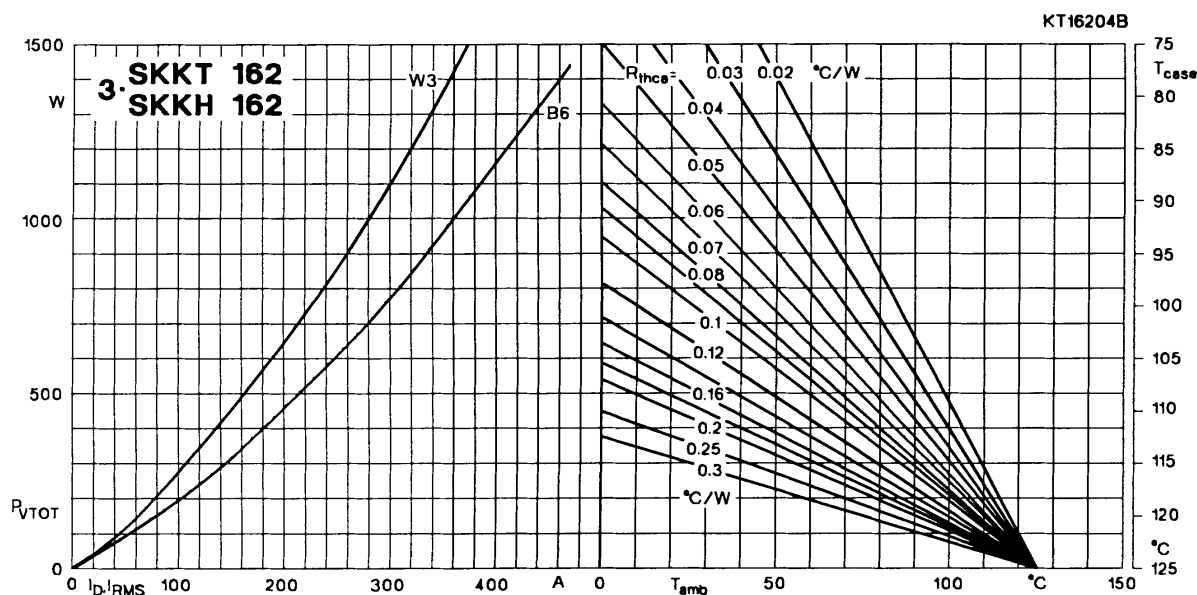


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

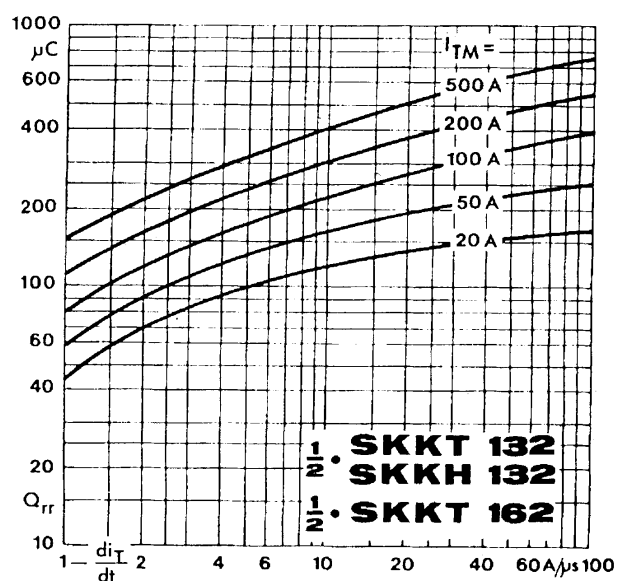


Fig. 5 Recovered charge vs. current decrease

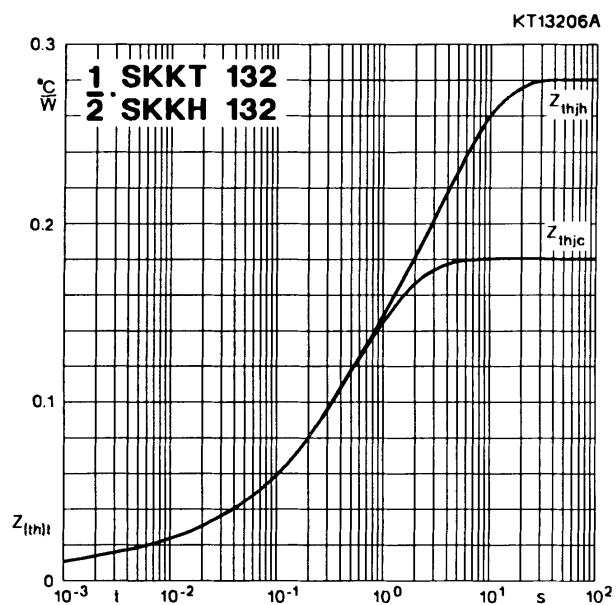


Fig. 6 a Transient thermal impedance vs. time

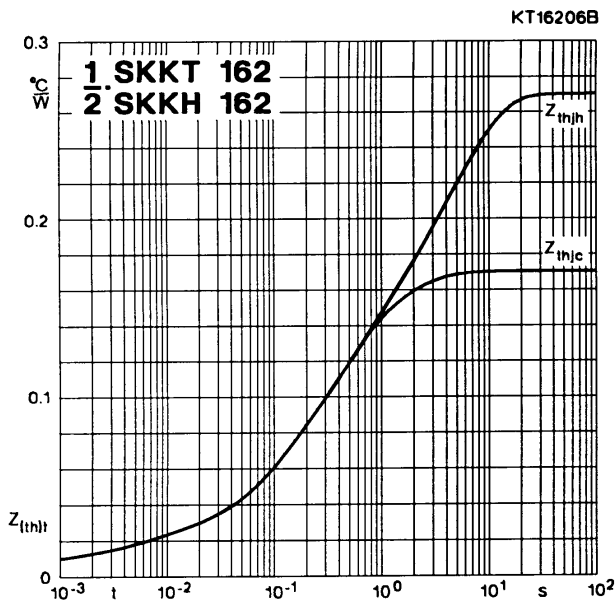


Fig. 6 b Transient thermal impedance vs. time

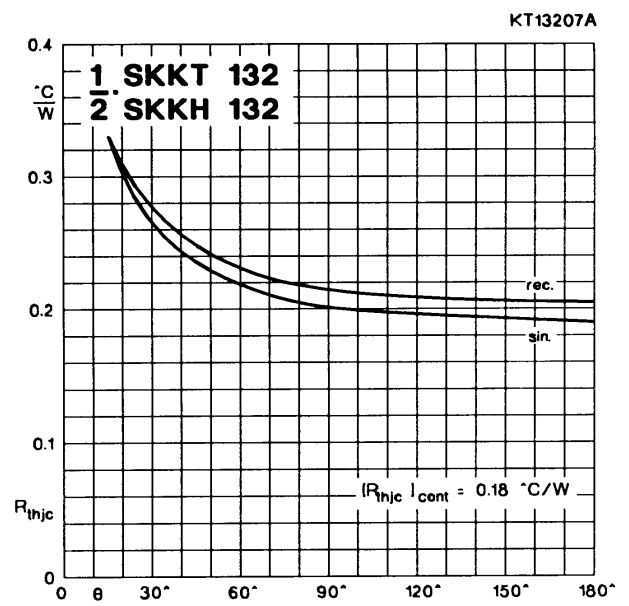


Fig. 7 a Thermal resistance vs. conduction angle

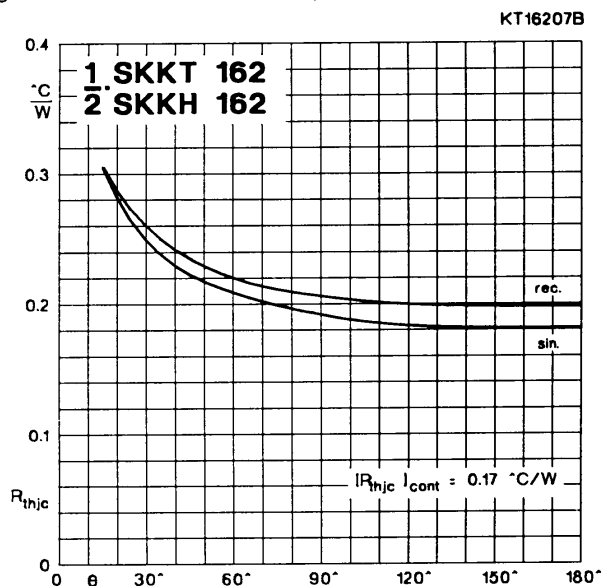


Fig. 7 b Thermal resistance vs. conduction angle

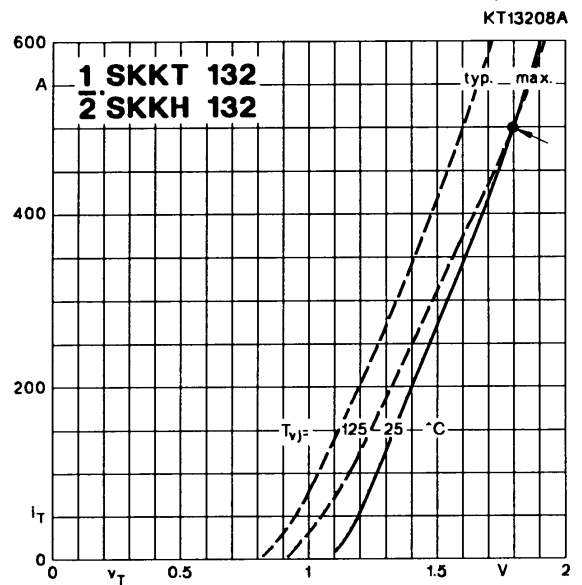


Fig. 8 a On-state characteristics

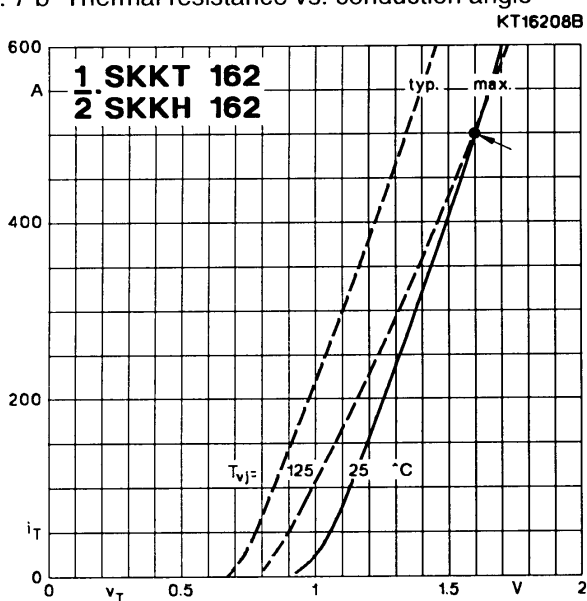


Fig. 8 b On-state characteristics

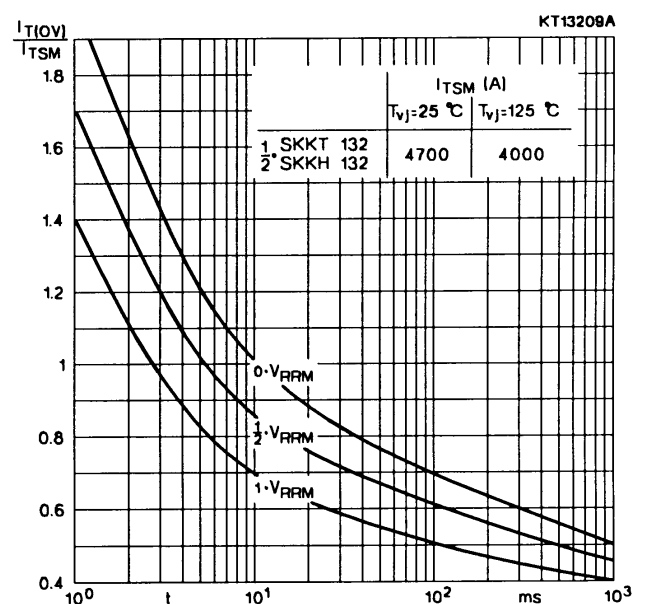


Fig. 9 a Surge overload current vs. time

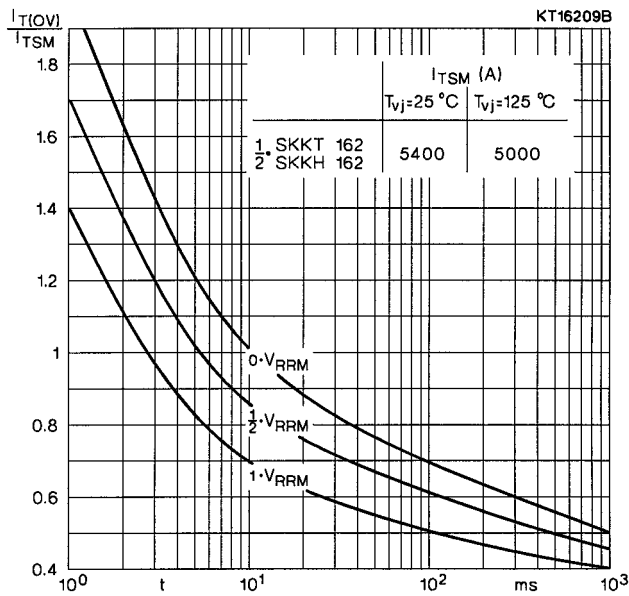


Fig. 9 b Surge overload current vs. time

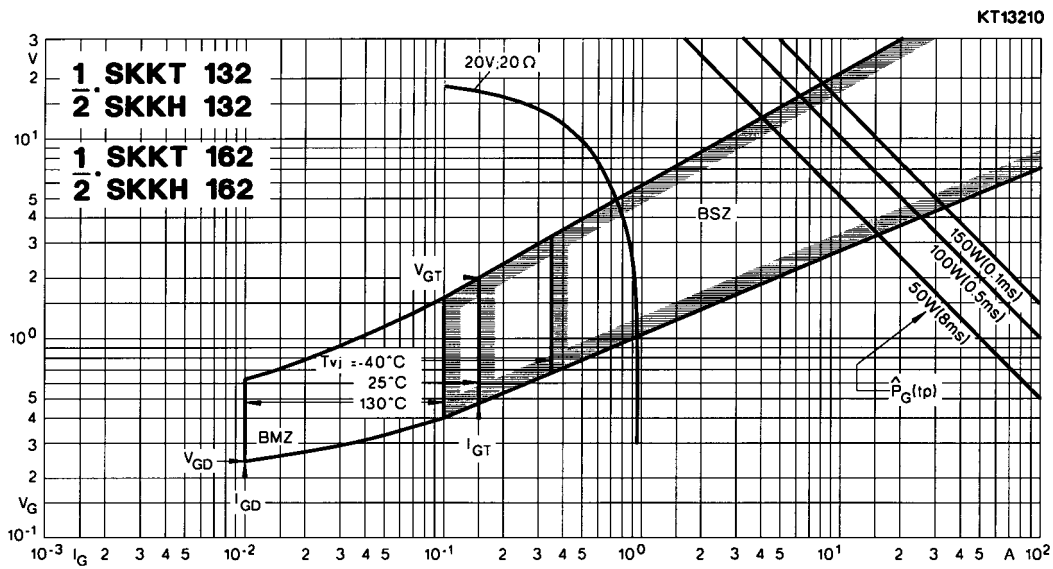
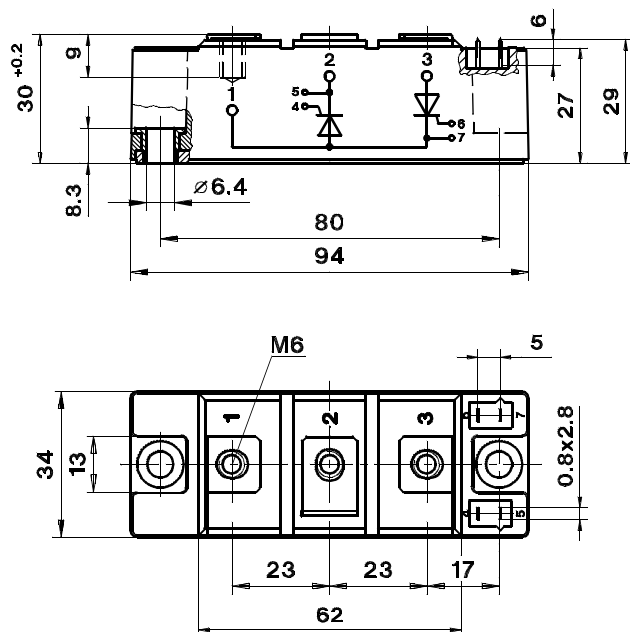


Fig. 10 Gate trigger characteristics

SKKT 122, 132, 162

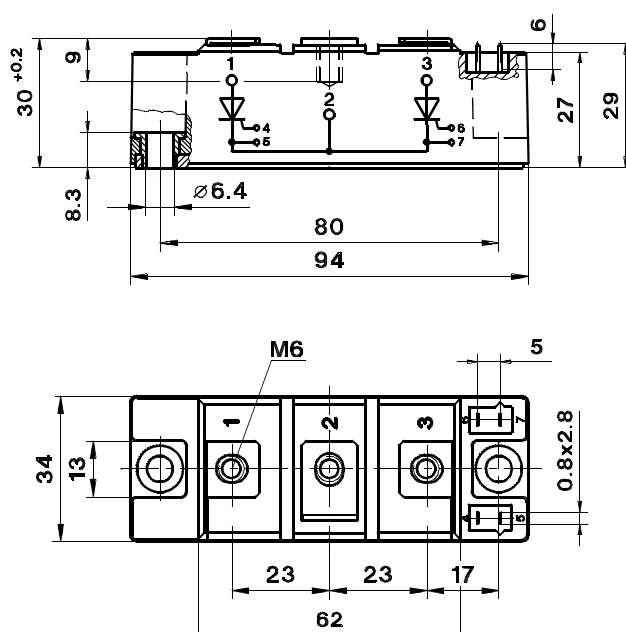
Case A 21

SEMIPACK® 2 UL recognized, file no. E 63 532

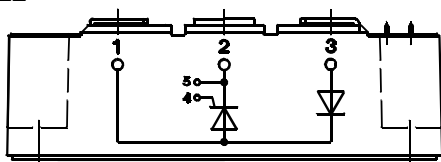
**SKMT 132**

Case A 50

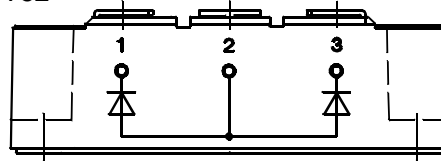
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**SKKH 122, 132, 162**

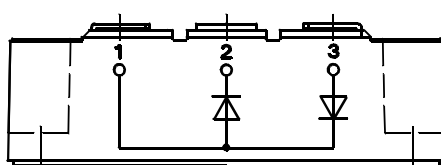
Case A 22

**SKND 165**

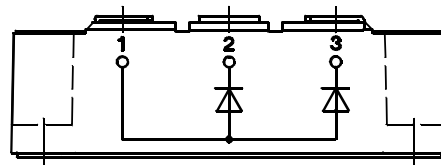
Case A 52

**SKKD 162**

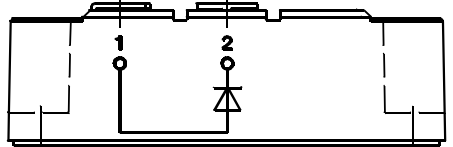
Case A 23

**SKND 162**

Case A 57

**SKKE 162**

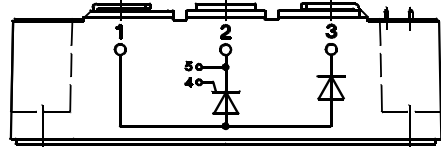
Case A 24



Dimensions in mm

SKNH 132

Case A 61



Dimensions in mm