

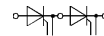
SEMIKRON® 2 Thyristor/ Diode Modules

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

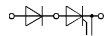


V _{RSM}	V _{RRM} V _{DRM}	(dv/dt) _{cr}	I _T RMS (maximum values for continuous operation)			
			220 A	250 A	220 A	250 A
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = 80 °C)			
			148 A	168 A	148 A	168 A
			SKKT	SKKT	SKKH	SKKH
900	800	500	132/08 D	162/08 D	132/08 D	162/08 D
1300	1200	1000	132/12 E	162/12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

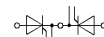
Symbol	Conditions	SKKT 132 SKKH 132	SKKT 162 SKKH 162	Units
I _{TAV}	sin. 180; (T _{case} = . . .)	130 (87 °C)	160 (83 °C)	A
I _D	B2/B6 T _{amb} = 45 °C, P3/180 T _{amb} = 35 °C, P3/180F	77/100 170/200	– 190/230	A
I _{RMS}	W1/W3 P 16/200F P 3/180F P 16/200F	250/320 240/3x163 305/3x250	290/360 265/3x185 333/3x312	A
I _{TSM}	T _{vj} = 25 °C; 10 ms	4 700	5 400	A
i ² t	T _{vj} = 125 °C; 10 ms	4 000	5 000	A
	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; diG/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. 150; max. 400		mA
I _L	T _{vj} = 25 °C; R _G = 33 Ω	typ. 0,3; max. 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.	200		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. sin. 180 } per thyristor	0,18/0,09	0,17/0,085	°C/W
	rec.120 } per module	0,19/0,095	0,18/0,09	°C/W
R _{thch}		0,21/0,105	0,20/0,10	°C/W
T _{vj} , T _{stg}		0,10/0,05		°C/W
		– 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		5 (44 lb. in.) ±15 %		Nm
a		5 · 9,81		m/s ²
w	approx.	250		g
Case	→ page B 1 – 94	SKKT: A 21 SKKH: A 22	SKMT: A 50 SKNH: A 61	



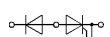
SKKT



SKKH



SKMT



SKNH

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)

- 1) SKMT 132, SKNH 132 available on request
- 2) See the assembly instructions

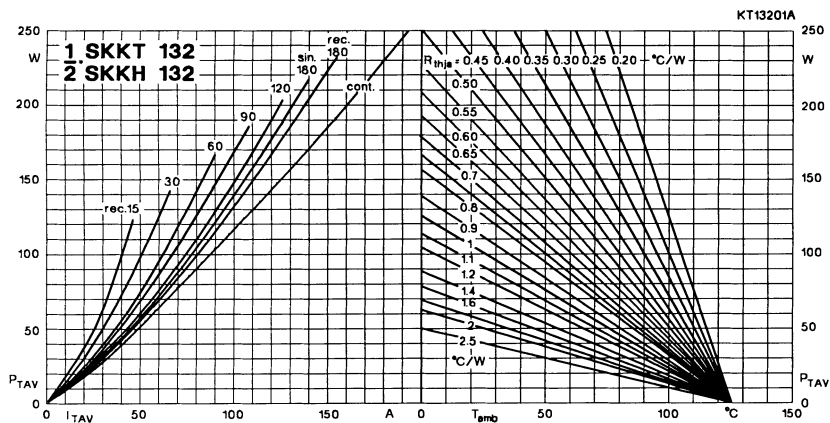


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

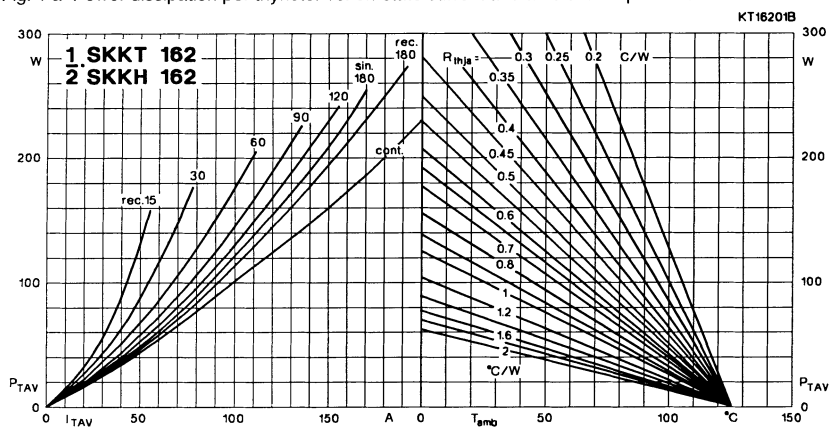


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

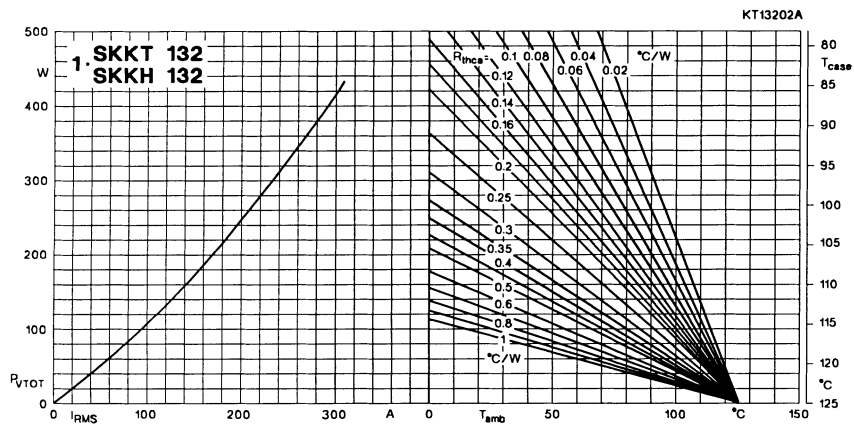


Fig. 2 a Power dissipation per module vs. rms current and case temperature

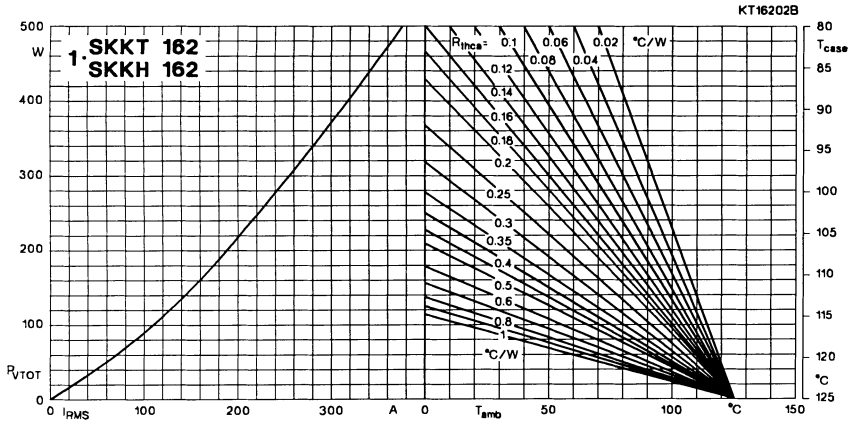


Fig. 2 b Power dissipation per module vs. rms current and case temperature

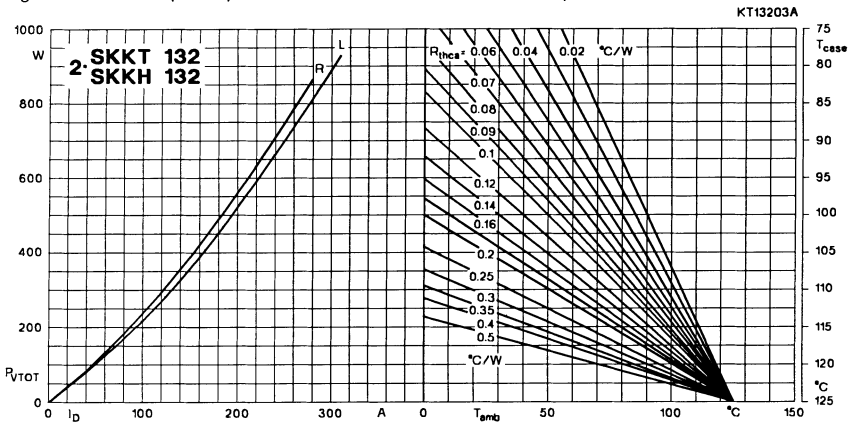


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

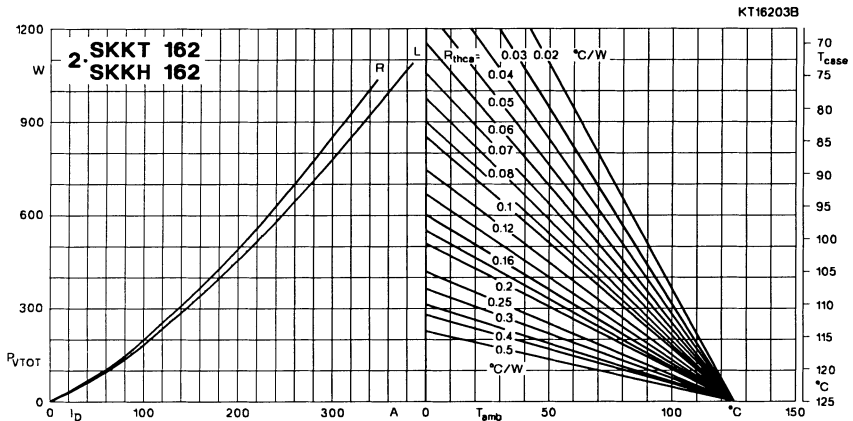


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

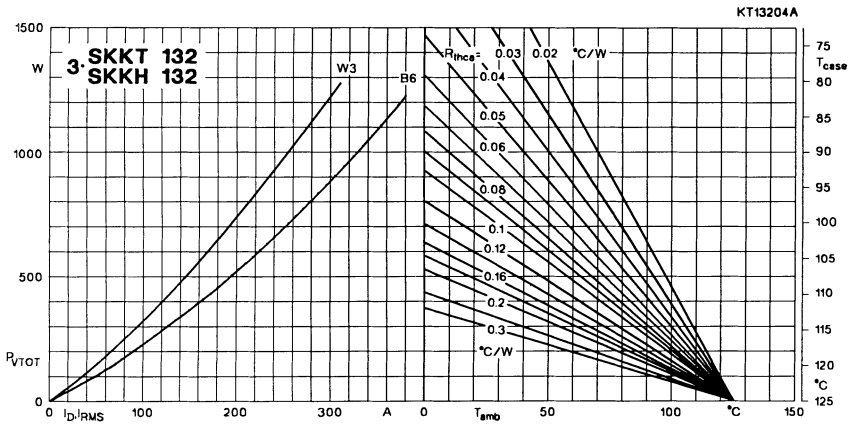


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

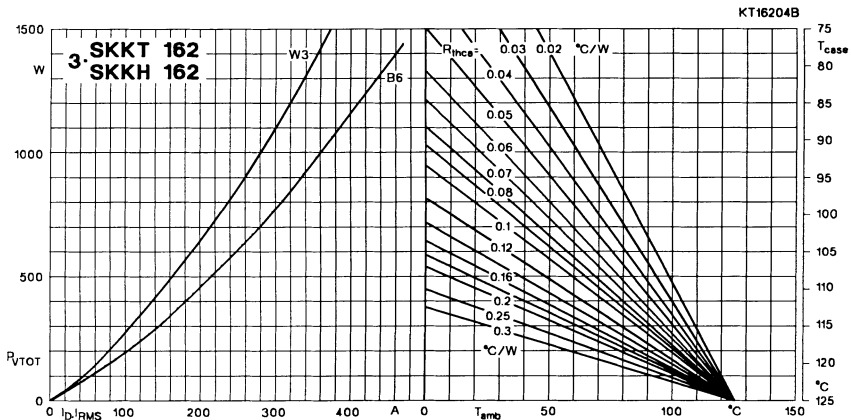


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

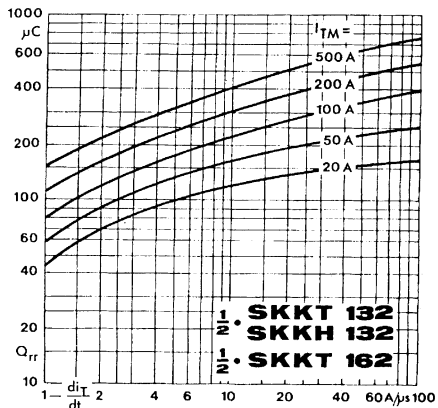


Fig. 5 Recovered charge vs. current decrease

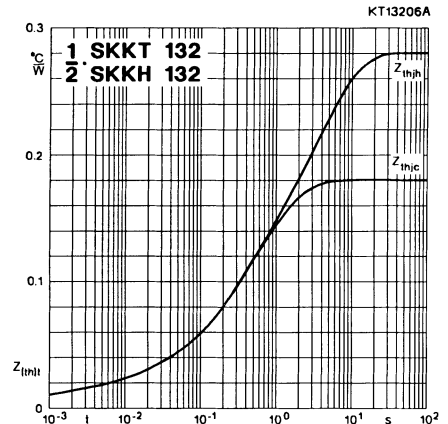


Fig. 6 a Transient thermal impedance vs. time

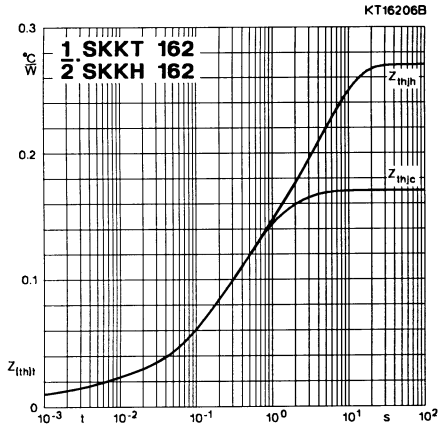


Fig. 6 b Transient thermal impedance vs. time

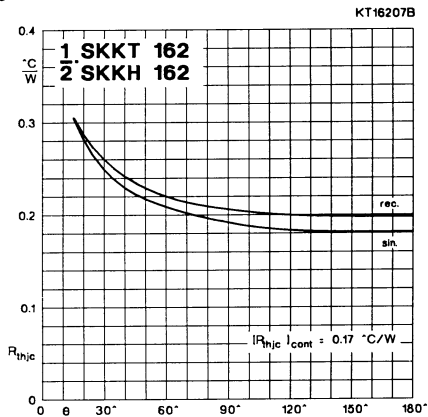


Fig. 7 b Thermal resistance vs. conduction angle

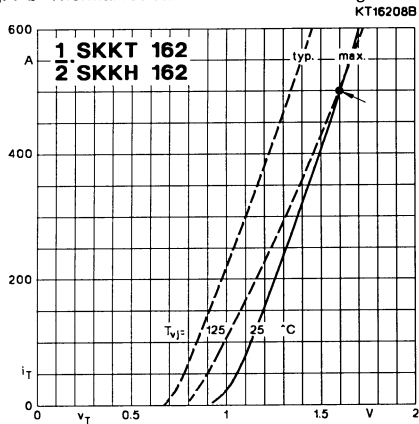


Fig. 8 b On-state characteristics

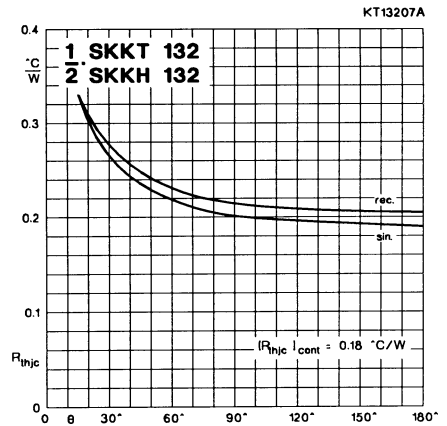


Fig. 7 a Thermal resistance vs. conduction angle

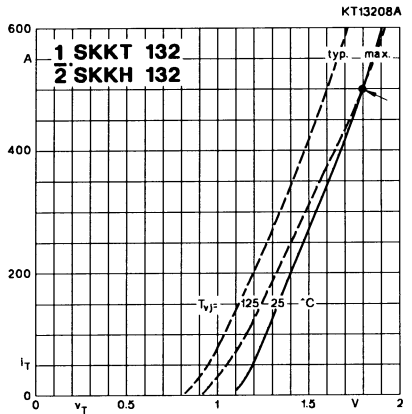


Fig. 8 a On-state characteristics

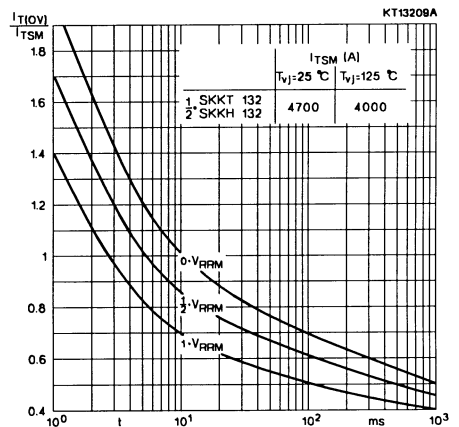


Fig. 9 a Surge overload current vs. time

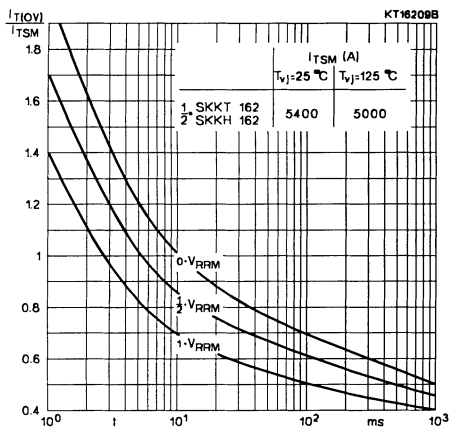


Fig. 9 b Surge overload current vs. time

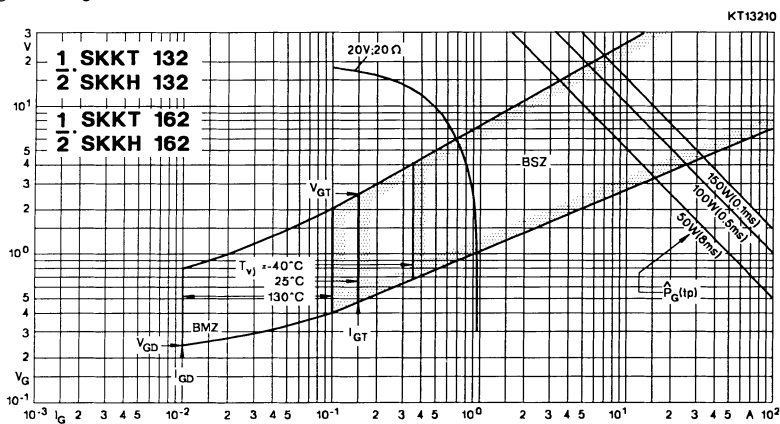


Fig. 10 Gate trigger characteristics