

SEMPACK® 2 Thyristor/ Diode Modules

SKKT 132 **SKKH 132**
SKMT 132¹⁾ **SKNH 132**¹⁾
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 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 A A
I _{TSM}	T _{vj} = 25 °C; 10 ms T _{vj} = 125 °C; 10 ms	4 700 4 000	5 400 5 000	A A
i ² t	T _{vj} = 25 °C; 8,3 ... 10 ms T _{vj} = 125 °C; 8,3 ... 10 ms	110 000 80 000	145 000 125 000	A ² s A ² s
t _{gd}	T _{vj} = 25 °C; I _G = 1 A; dic/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. } 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} T _{vj} , T _{stg}			0,10/0,05 – 40 . . . +125	°C/W °C
V _{isol} M ₁ M ₂ a w	a. c. 50 Hz; r.m.s.; 1 s/1 min to heatsink } SI (US) units to terminals }		3600/3000 5 (44 lb. in.) ±15 % ²⁾ 5 (44 lb. in.) ±15 % 5 · 9,81 250	V– Nm Nm m/s ² 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

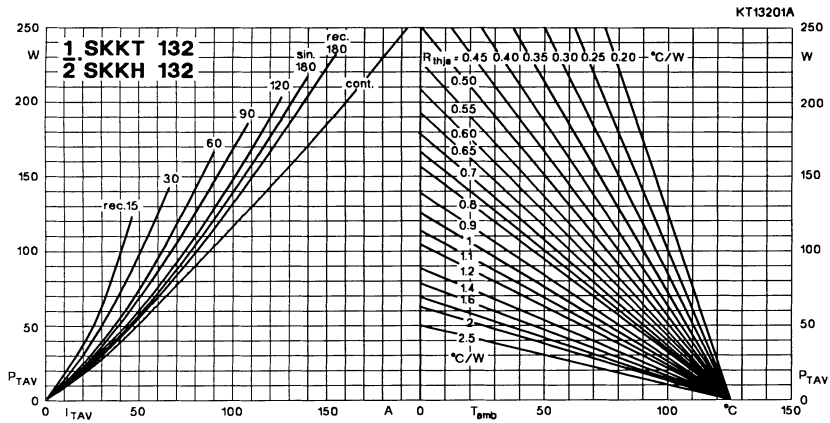


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

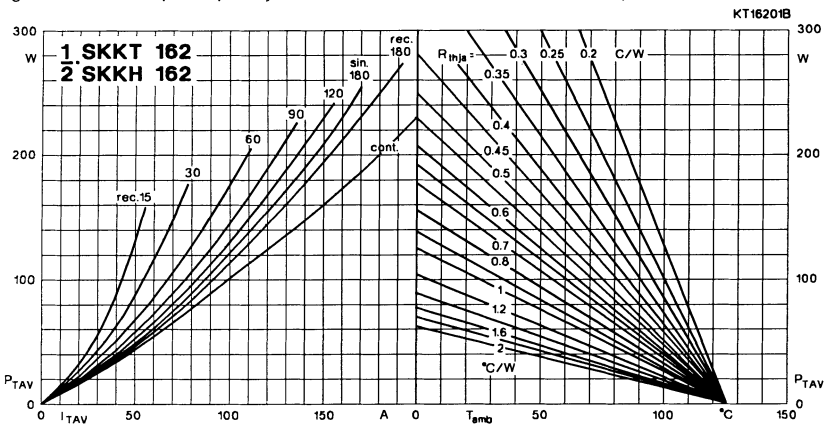


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

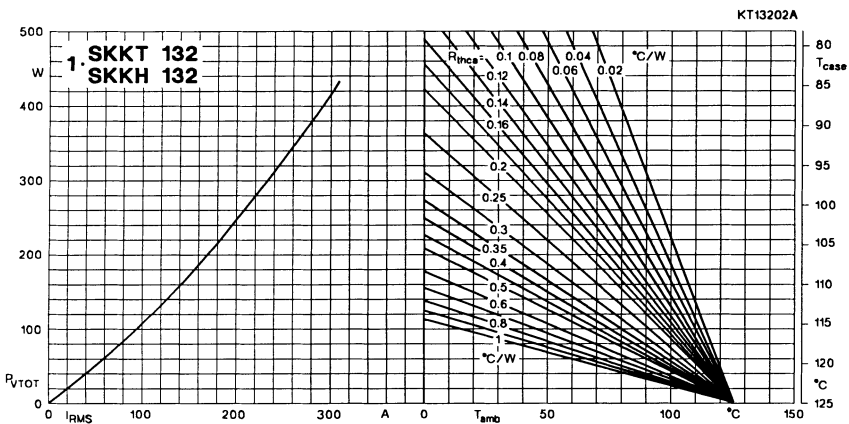


Fig. 2 a Power dissipation per module vs. rms current and case temperature

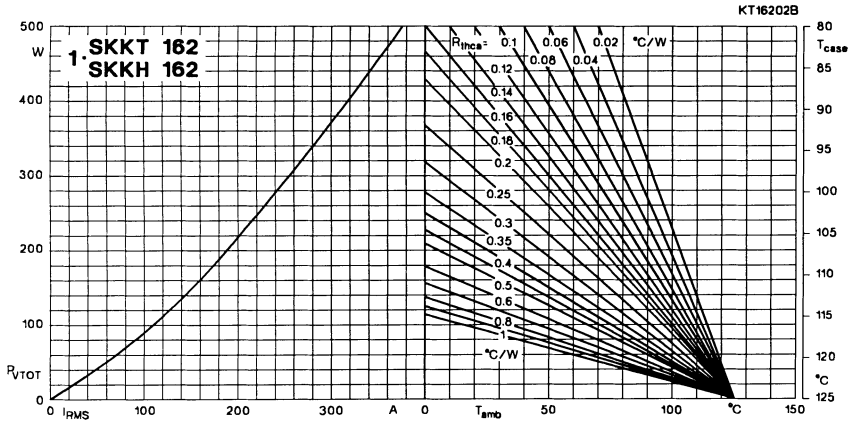


Fig. 2 b Power dissipation per module vs. rms current and case temperature

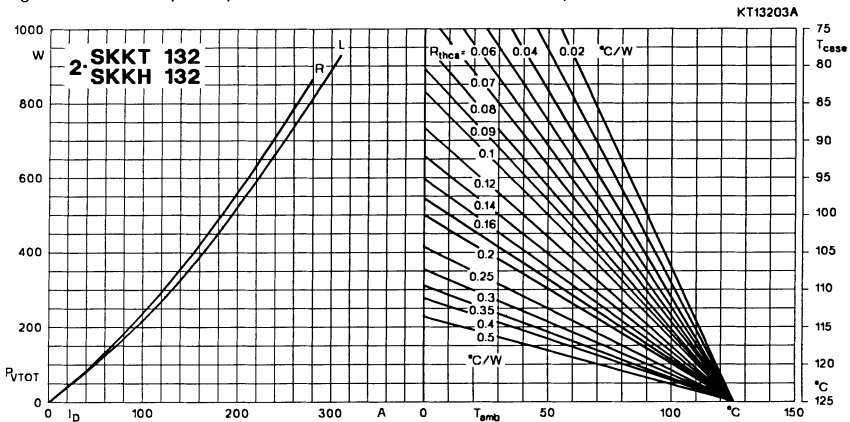


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

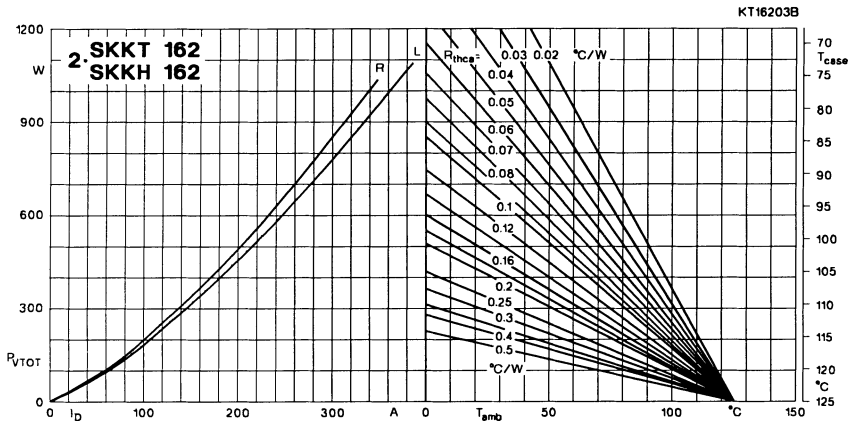


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

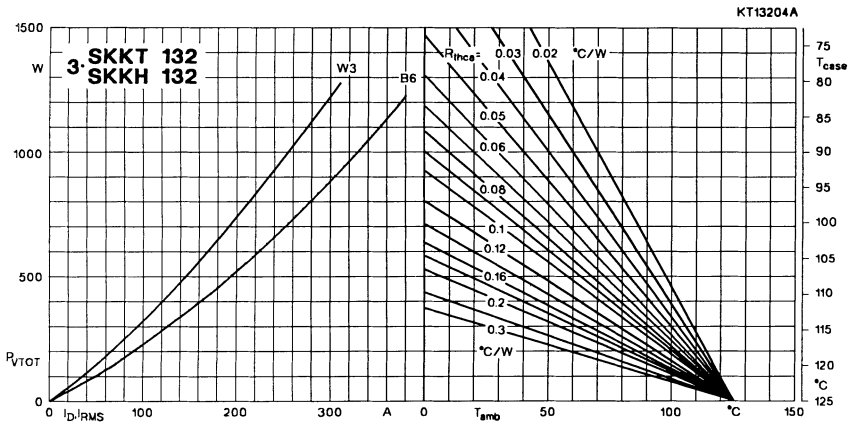


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

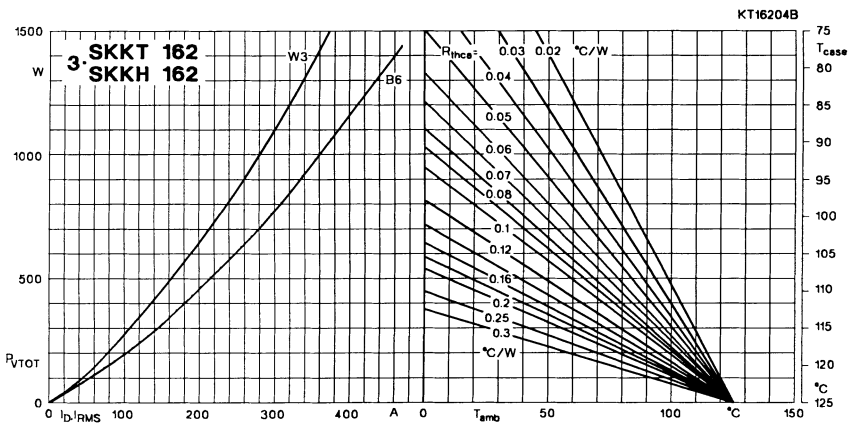


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

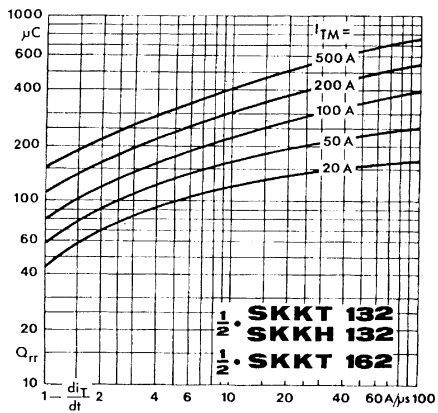


Fig. 5 Recovered charge vs. current decrease

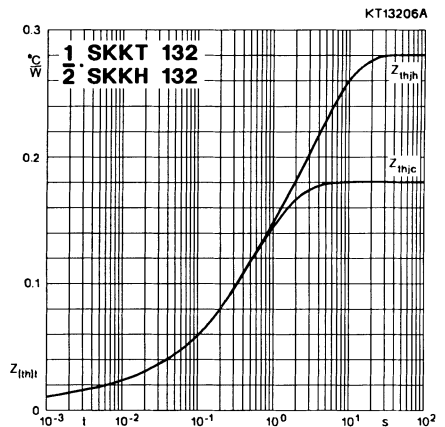


Fig. 6 a Transient thermal impedance vs. time

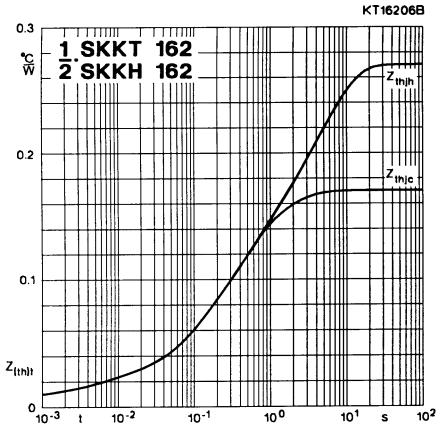


Fig. 6 b Transient thermal impedance vs. time

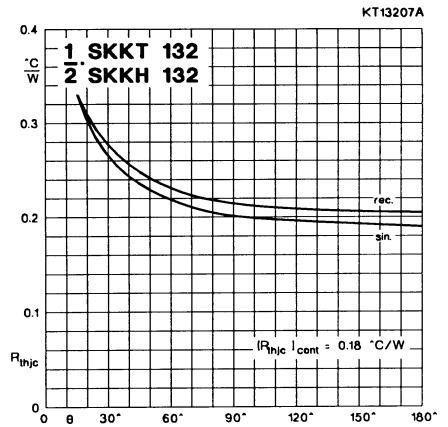


Fig. 7 a Thermal resistance vs. conduction angle

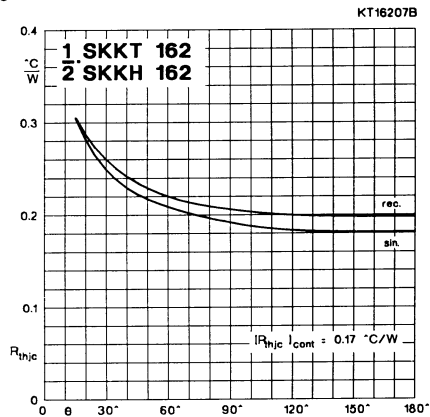


Fig. 7 b Thermal resistance vs. conduction angle

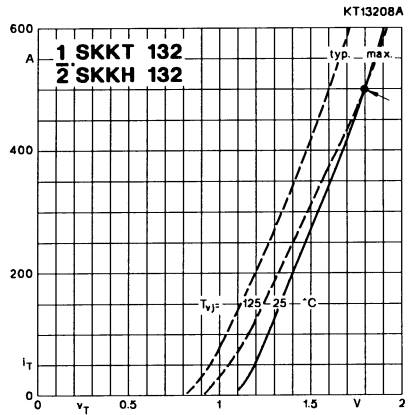


Fig. 8 a On-state characteristics

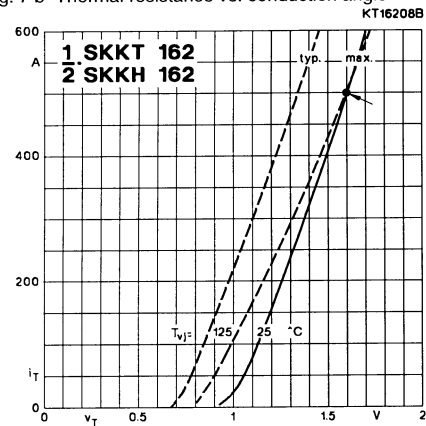


Fig. 8 b On-state characteristics

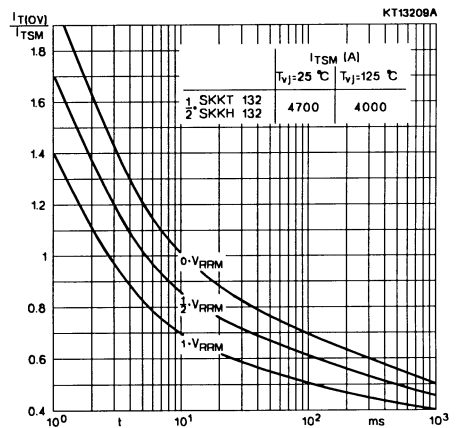


Fig. 9 a Surge overload current vs. time

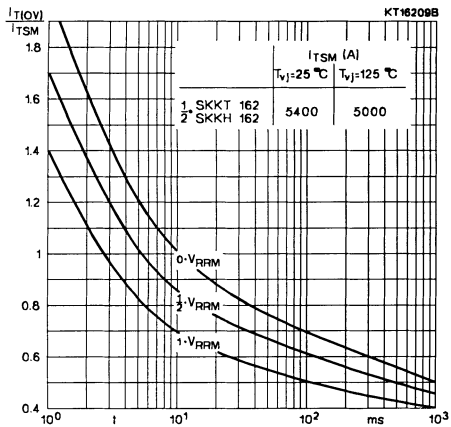


Fig. 9 b Surge overload current vs. time

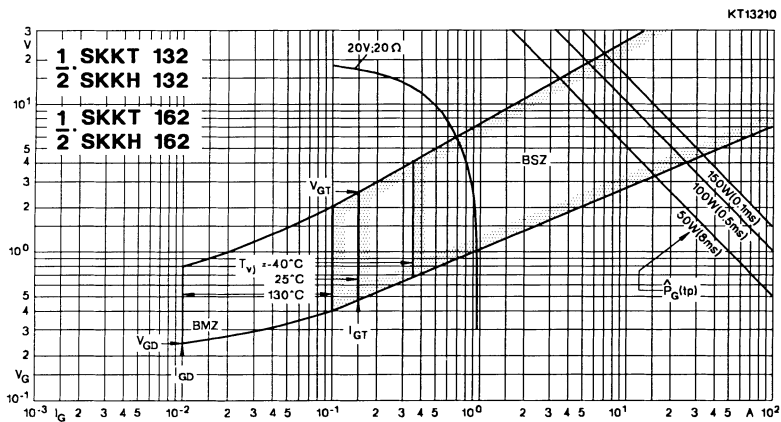


Fig. 10 Gate trigger characteristics