

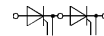
SEMPACK® 3 Thyristor/ Diode Modules

SKKT 131 SKKH 131
SKKT 161 SKKH 161

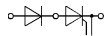


V _{RSM}	V _{RRM}	(dv/dt) _{cr}	I _{T(RMS)} (maximum values for continuous operation)			
			240 A	270 A	240 A	270 A
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = . . .)			
			150 A (85 °C)	172 A (81 °C)	150 A (85 °C)	172 A (81 °C)
900	800	500	SKKT	SKKT	SKKH	SKKH
1300	1200	500	131/08 D	161/08 D	131/08 D	161/08 D
1300	1200	1000	131/12 D	161/12 D	–	161/12 D
1300	1200	1000	131/12 E	161/12 E	131/12 E	161/12 E
1500	1400	1000	131/14 E	161/14 E	131/14 E	161/14 E
1700	1600	1000	131/16 E	161/16 E	131/16 E	161/16 E
1900	1800	1000	131/18 E	161/18 E	131/18 E	161/18 E
2100	2000	1000	131/20 E	–	131/20 E	–
2300	2200	1000	131/22 E	–	131/22 E	–

Symbol	Conditions	SKKT 131 SKKH 131	SKKT 161 SKKH 161	Units	
I _{TAV}	sin. 180; T _{case} = 81 °C 85 °C 92 °C	– 150 130	172 160 –	A A A	
I _D	B2/B6 T _{amb} =	P 16/170 F P 16/200 F P 16/300 F	295/375 300/380 – /390	325/410 330/415 – /425	A A A A A A
I _{RMS}	W1/W3 35 °C; P 16/170 F P 16/200 F P 16/300 F	340/3x290 385/3x312 – /3x318	380/3x310 385/3x337 – /3x344	A A A A	
I _{TSM}	T _{vj} = 25 °C; 10 ms T _{vj} = 130 °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} = 130 °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; di _G /dt = 1 A/μs		1	μs	
t _{gr}	V _D = 0,67 · V _{DRM}		2	μs	
(di/dt) _{cr}	T _{vj} = 130 °C		200	A/μs	
t _q	T _{vj} = 130 °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. 1,7	max. 1,55	V	
V _(TO)	T _{vj} = 130 °C	1	1	V	
r _T	T _{vj} = 130 °C	1,4	1,0	mΩ	
I _{DD} ; I _{RD}	T _{vj} = 130 °C; V _{DD} = V _{DRM} V _{RD} = V _{RRM}	max. 50	max. 50	mA	
V _{GT}	T _{vj} = 25 °C; d. c.		3	V	
I _{GT}	T _{vj} = 25 °C; d. c.		150	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. } sin. 180 } rec. 120 } per thyristor/ per module		0,19/0,09 0,20/0,10 0,22/0,11 0,06/0,03 – 40 ... +130	°C/W °C/W °C/W °C/W °C	
R _{thch} T _{vj} ; T _{stg}					
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 % ¹⁾	Nm	
M ₂	to terminals	SI (US) units	9 (80 lb. in.) ± 15 % ²⁾	Nm	
a			5 · 9,81	m/s ²	
w	approx.		820	g	
Case	→ page B 1 – 76	SKKT: A 13	SKKH: A 14		



SKKT



SKKH

Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- UL recognized, file no. 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) See the assembly instructions
2) The screws must be lubricated

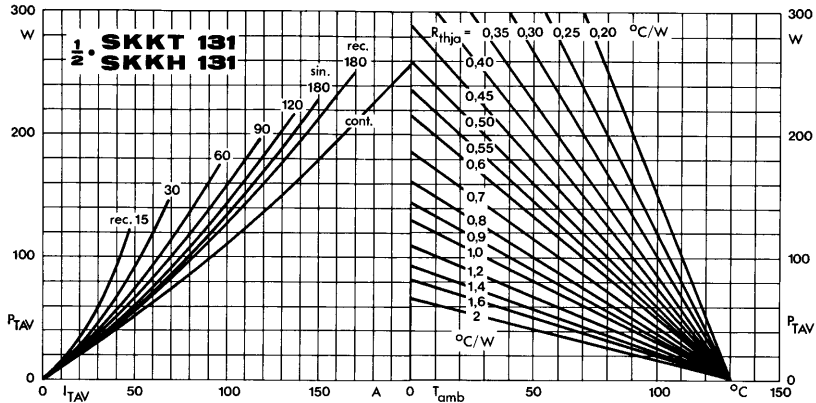


Fig. 1 a Power dissipation per thyristor vs. on-state current and ambient temperature

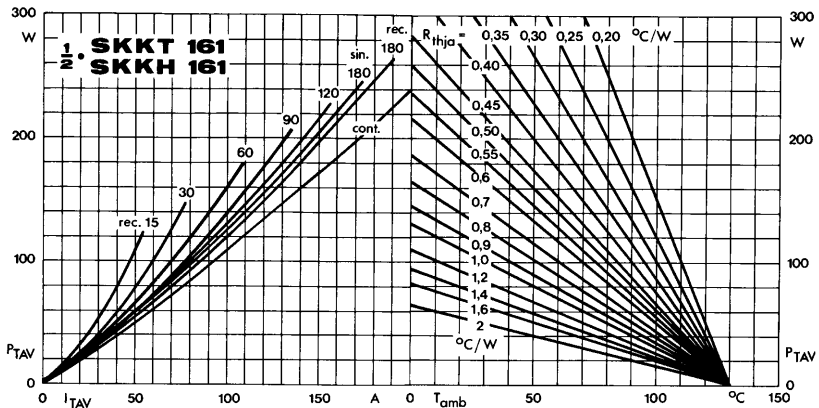


Fig. 1 b Power dissipation per thyristor vs. on-state current and ambient temperature

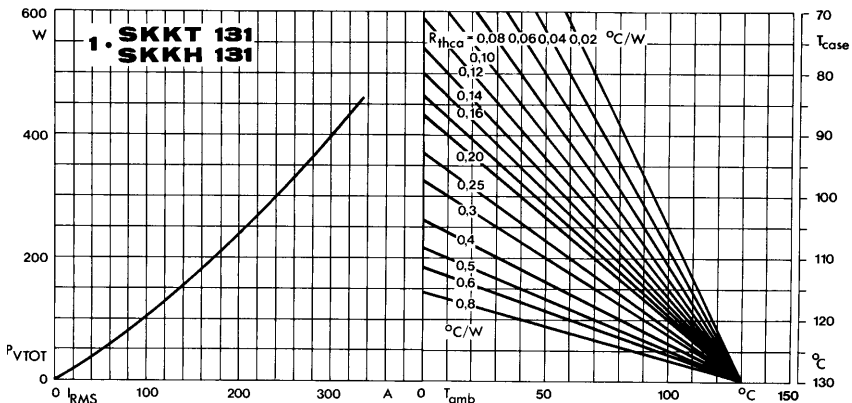


Fig. 2 a Power dissipation per module vs. rms current and case temperature

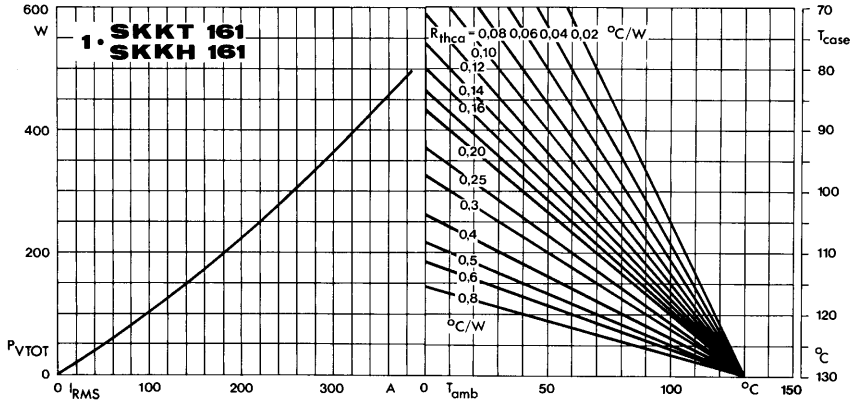


Fig. 2 b Power dissipation per module vs. rms current and case temperature

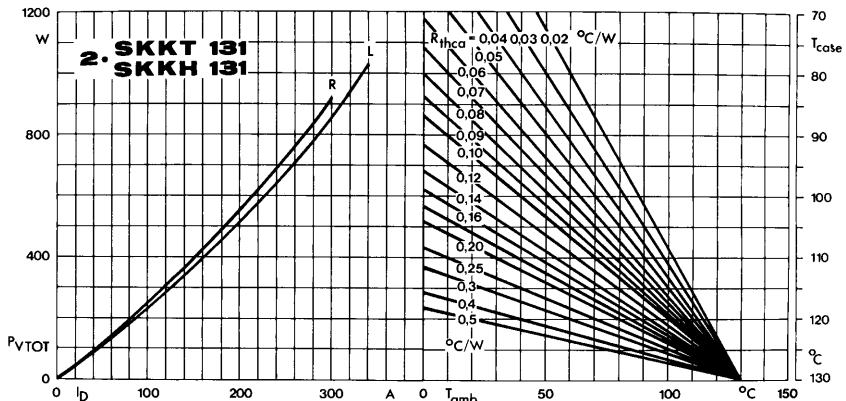


Fig. 3 a Power dissipation of two modules vs. direct current and case temperature

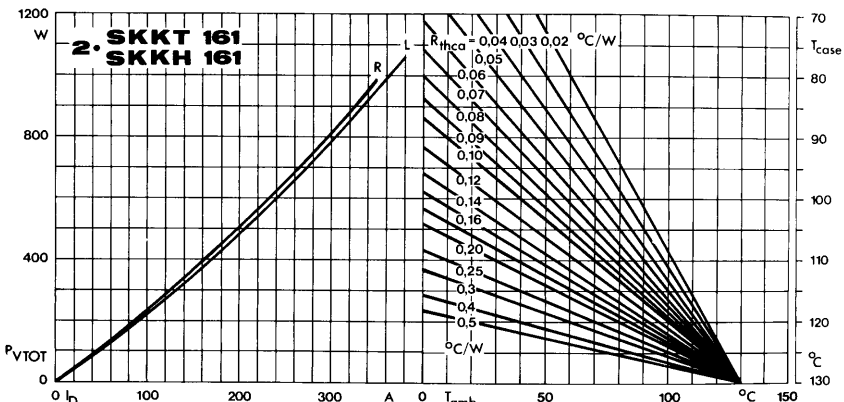


Fig. 3 b Power dissipation of two modules vs. direct current and case temperature

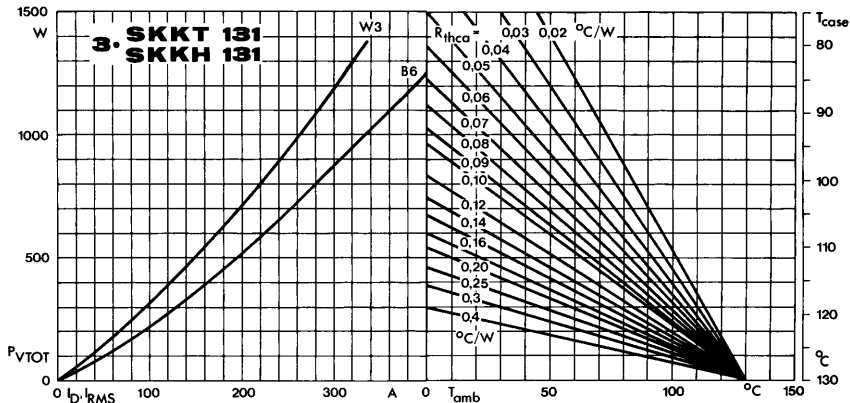


Fig. 4 a Power dissipation of three modules vs. direct and rms current and case temperature

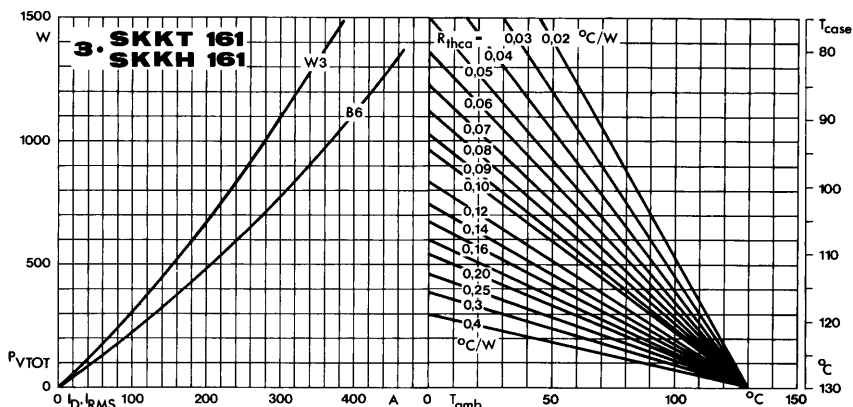


Fig. 4 b Power dissipation of three modules vs. direct and rms current and case temperature

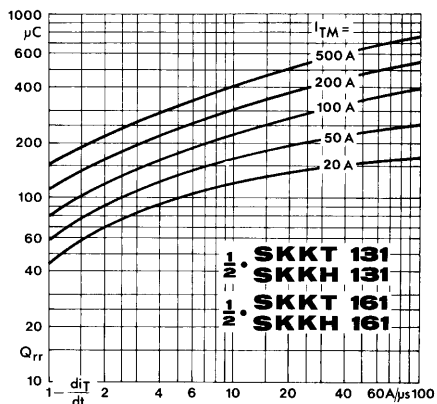


Fig. 5 Recovered charge vs. current decrease

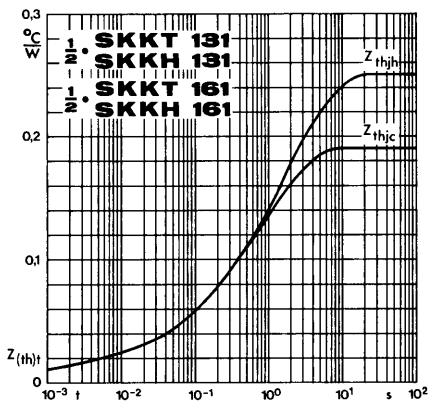


Fig. 6 Transient thermal impedance vs. time

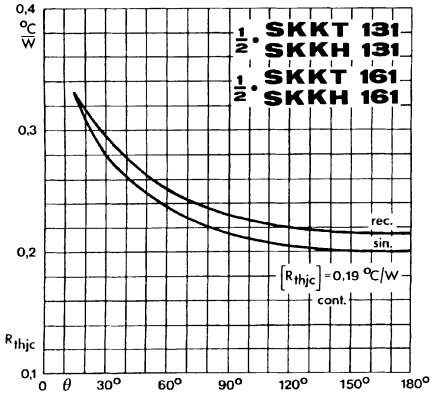


Fig. 7 Thermal resistance vs. conduction angle

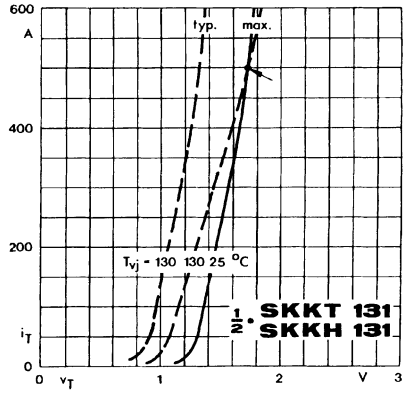


Fig. 8 a On-state characteristic

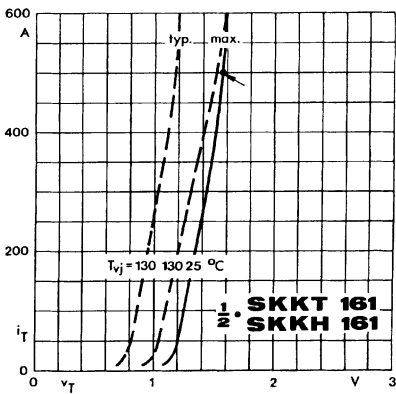


Fig. 8 b On-state characteristics

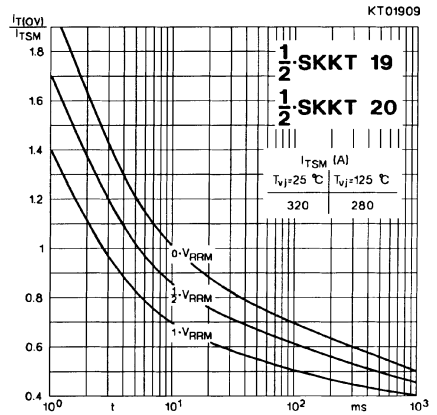


Fig. 9 Surge overload current vs. time

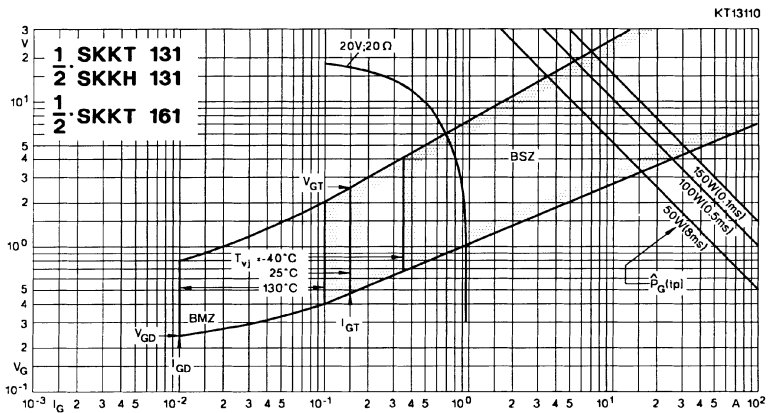
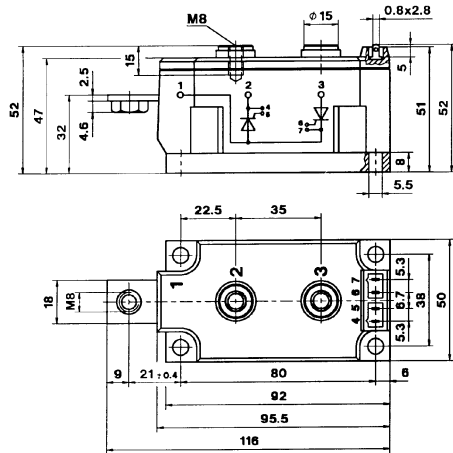


Fig. 10 Gate trigger characteristics

SKKT 131, SKKT 161

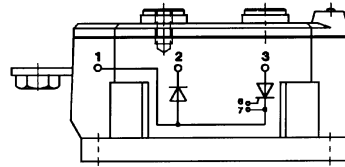
Case A 13

SEMPACK 3 UL recognized, file no. E 63 532



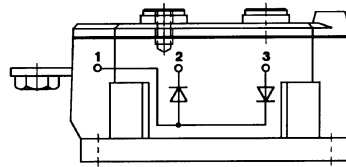
SKKL 131, SKKL 161

Case A 15



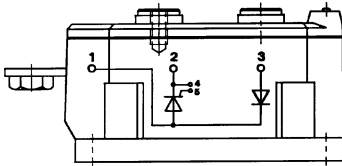
SKKD 201

Case A 16



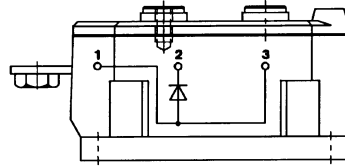
SKKH 131, SKKH 161

Case A 14



SKKE 201

Case A 17



Dimensions in mm