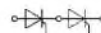
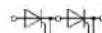


SEMPACK® 1 Thyristor/ Diode Modules

SKKT 19
SKKT 20
SKKT 20B



SKKT 19



SKKT 20

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)
- AC motor soft starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

V _{RSM}	V _{RRM} V _{DRM}	(dv/dt) _{cr} V/μs	I _{TRMS} (maximum value for continuous operation) 40 A		
			I _{TAV} (sin. 180; T _{case} = 60 °C) 25 A		
700	600	500	SKKT 19/06 D	SKKT 20/06 D	–
900	800	500	SKKT 19/08 D	SKKT 20/08 D	SKKT 20B08 D
1300	1200	500	SKKT 19/12 D	–	–
1300	1200	1000	SKKT 19/12 E	SKKT 20/12 E	SKKT 20B12 E
1500	1400	1000	SKKT 19/14 E	SKKT 20/14 E	SKKT 20B14 E
1700	1600	1000	SKKT 19/16 E	SKKT 20/16 E	SKKT 20B16 E

Symbol	Conditions	SKKT 19	SKKT 20 SKKT 20B
I _{TAV}	sin. 180; T _{case} = 60 °C T _{case} = 85 °C	25 A 18 A	
I _D	B2/B6 T _{amb} = 45 °C; P 3/180 T _{amb} = 35 °C; P 3/180 F	31 A/38 A 46 A/60 A	
I _{RMS}	W1/W3 T _{amb} = 45 °C; P 3/180	42 A/3 x 30 A	
I _{TSM}	T _{vj} = 25 °C; 10 ms	320 A	
i ² t	T _{vj} = 125 °C; 10 ms	280 A	
	T _{vj} = 25 °C; 8,3 ... 10 ms	510 A ² s	
	T _{vj} = 125 °C; 8,3 ... 10 ms	390 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}	1 μs	
(di/dt) _{cr}	T _{vj} = 125 °C	150 A/μs	
t _q	T _{vj} = 125 °C	typ. 80 μs	
I _H	T _{vj} = 25 °C; typ./max.	100/200 mA	
I _L	T _{vj} = 25 °C; R _G = 33 Ω; typ./max.	250/400 mA	
V _T	T _{vj} = 25 °C; I _T = 75 A	max. 2,3 V	
V _{T(TO)}	T _{vj} = 125 °C	1,0 V	
r _T	T _{vj} = 125 °C	16 mΩ	
I _{DD} ; I _{RD}	T _{vj} = 125 °C; V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}	max. 10 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} = 125 °C; d. c.	0,25 V	
I _{GD}	T _{vj} = 125 °C; d. c.	5 mA	
R _{thjc}	cont. } sin. 180 } rec. 120 } per thyristor/per module	1,2 °C/W / 0,6 °C/W 1,3 °C/W / 0,65 °C/W 1,35 °C/W / 0,68 °C/W	
R _{thch}		0,2 °C/W / 0,1 °C/W	
T _{vj}		– 40 ... +125 °C	
T _{slg}		– 40 ... +125 °C	
V _{isol}	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 V~ / 3000 V~	
M ₁	to heatsink } SI units / US units	5 Nm/44 lb. in. ± 15 % ¹⁾	
M ₂	to terminals }	3 Nm/26 lb. in. ± 15 %	
a		5 · 9,81 m/s ²	
w	approx.	120 g	
Case	→ page B 1 – 93	SKKT 19: A 5 SKKT 20: A 46 SKKT 20B: A 48	

¹⁾ See the assembly instructions

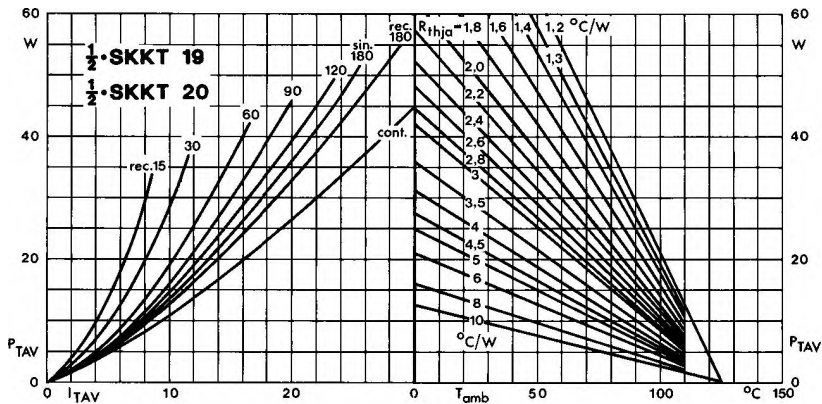


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

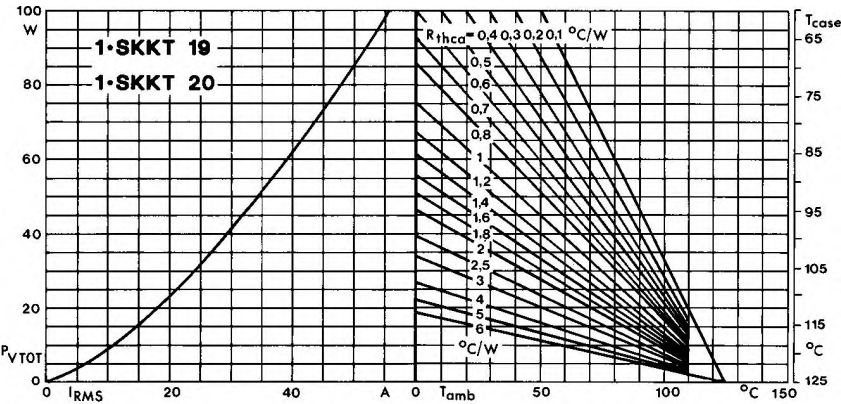


Fig. 2 Power dissipation per module vs. rms current and case temperature

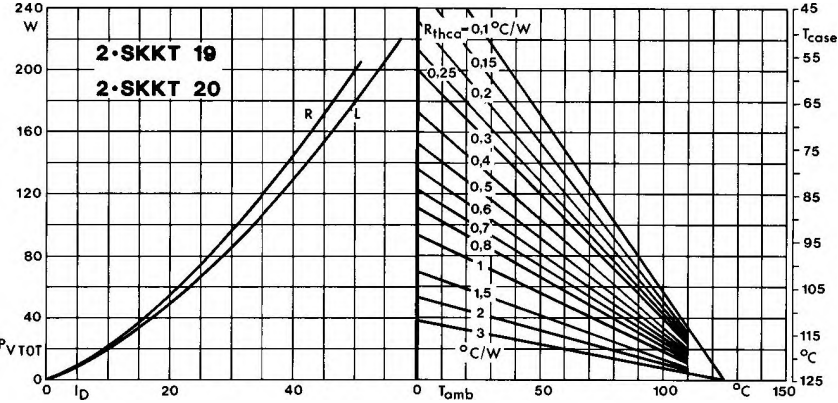


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

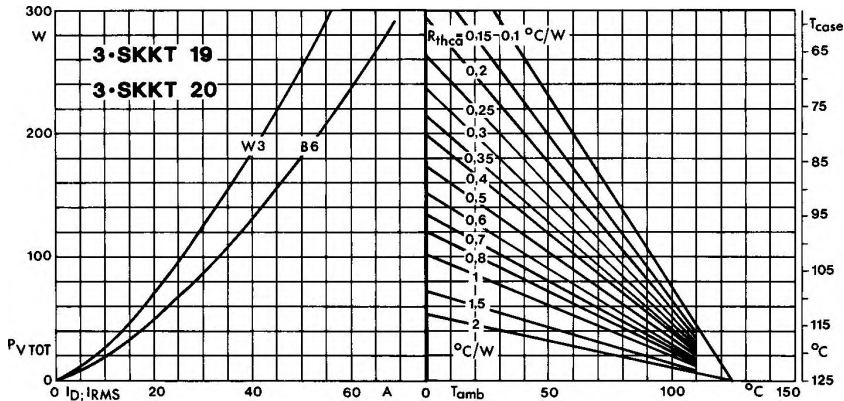


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

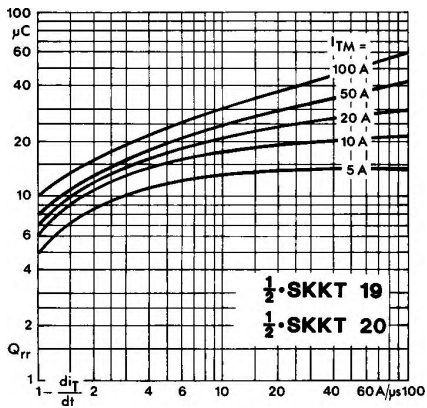


Fig. 5 Recovered charge vs. current decrease

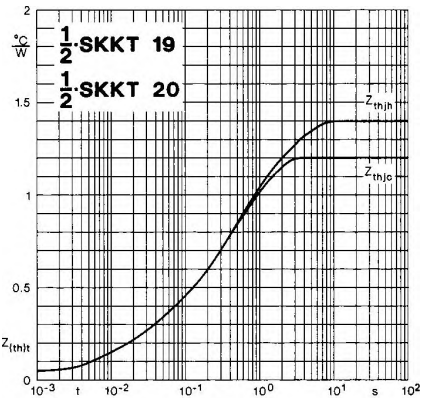


Fig. 6 Transient thermal impedance vs. time

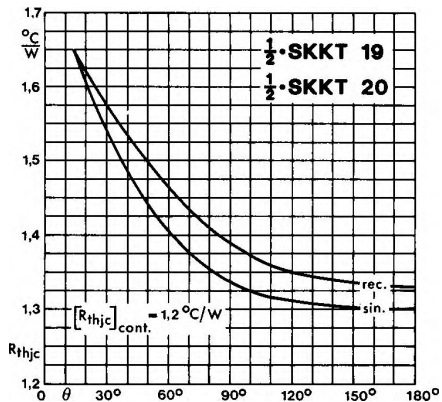


Fig. 7 Thermal resistance vs. conduction angle

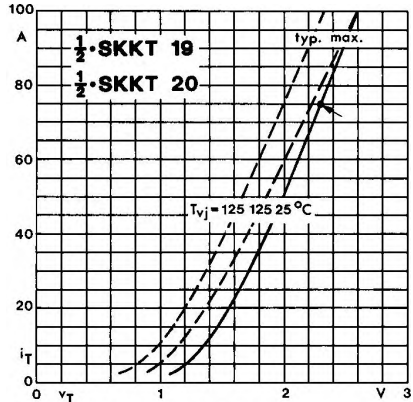


Fig. 8 On-state characteristics

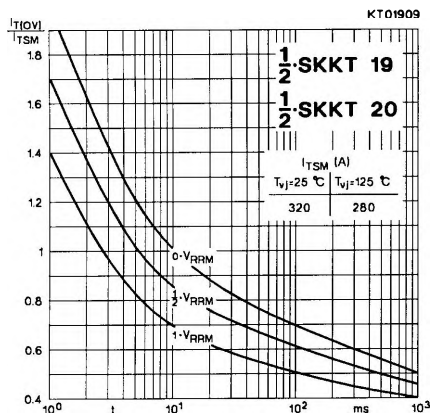


Fig. 9 Surge overload current vs. time

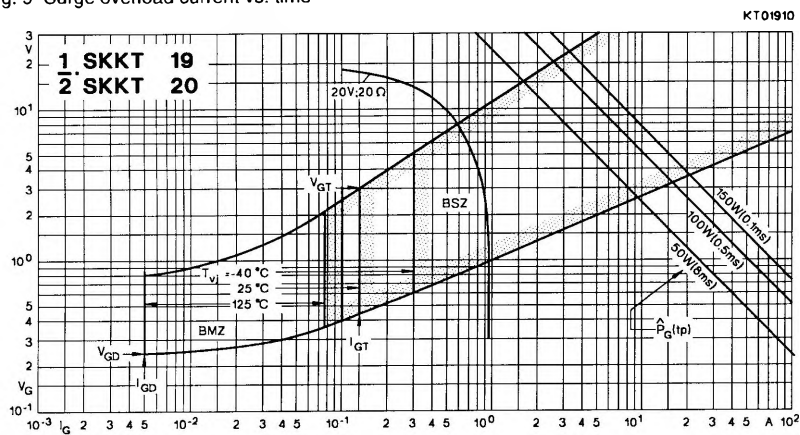


Fig. 10 Gate trigger characteristics