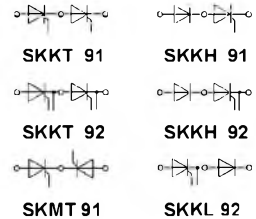


SEMPACK® 1 Thyristor/ Diode Modules

SKKT 91 SKKH 91
SKKT 92 SKKH 92
SKKT 92B SKMT 91²⁾
SKKL 92²⁾



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)

¹⁾ Also available in SKKT 92 B configuration (case A 48)

²⁾ SKKL 92, SKMT 91 available on request

³⁾ See the assembly instructions

V _{RSM}	V _{RRM}	(dv/dt) _{cr}	I _T RMS (maximum value for continuous operation)			
V	V	V/μs	150 A			
			I _T AV (sin. 180; T _{case} = 85 °C)			
			95 A			
500	400	500	–	–	SKKH 91/04 D	–
700	600	500	SKKT 91/06 D	SKKT 92/06 D	SKKH 91/06 D	SKKH 92/06 D
900	800	500	SKKT 91/08 D	SKKT 92/08 D ¹⁾	SKKH 91/08 D	SKKH 92/08 D
1300	1200	500	SKKT 91/12 D	–	SKKH 91/12 D	–
1300	1200	1000	SKKT 91/12 E	SKKT 92/12 E ¹⁾	–	SKKH 92/12 E
1500	1400	1000	SKKT 91/14 E	SKKT 92/14 E ¹⁾	SKKH 91/14 E	SKKH 92/14 E
1700	1600	1000	SKKT 91/16 E	SKKT 92/16 E ¹⁾	SKKH 91/16 E	SKKH 92/16 E
1900	1800	1000	SKKT 91/18 E	SKKT 92/18 E ¹⁾	SKKH 91/18 E	SKKH 92/18 E

Symbol	Conditions	SKKT 91 SKKH 91	SKKT 92 SKKT 92B SKKH 92
I _T AV	sin. 180; T _{case} = 85 °C	95 A	
I _D	B2/B6 T _{amb} = 45 °C; P 3/180 T _{amb} = 35 °C; P 3/180 F	70 A/85 A 140 A/175 A	
I _{RMS}	W1/W3 T _{amb} = 35 °C; P 3/180 F	190 A/3 x 135 A	
I _T SM	T _{vj} = 25 °C; 10 ms T _{vj} = 125 °C; 10 ms	2 000 A 1 750 A	
i ² t	T _{vj} = 25 °C; 8,3 ... 10 ms T _{vj} = 125 °C; 8,3 ... 10 ms	20 000 A ² s 15 000 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	150 A/μs	
t _q	T _{vj} = 125 °C	typ. 100 μs	
I _H	T _{vj} = 25 °C;	max. 250 mA	
I _L	T _{vj} = 25 °C; R _G = 33 Ω	max. 600 mA	
V _T	T _{vj} = 25 °C; I _T = 300 A	max. 1,65 V	
V _{T(TO)}	T _{vj} = 125 °C	0,9 V	
r _T	T _{vj} = 125 °C	2 mΩ	
I _{DD} ; I _{RD}	T _{vj} = 125 °C; V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}	max. 20 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.	6 mA	
R _{thjc}	cont. sin. 180 rec. 120	per thyristor/per module	
R _{thch}			
T _{vj}			
T _{stq}			
V _{isol}	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 V~ / 3000 V~	
M ₁	to heatsink to terminals	5 Nm/44 lb. in. ± 15 % ³⁾	
M ₂		3 Nm/26 lb.in. ± 15 %	
a		5 · 9,81 m/s ²	
w	approx.	120 g	
Case	→ page B 1 – 93	SKKT 91: A 5 SKKH 91: A 6 SKMT 91: A 65	SKKL 92: A 59 SKKT 92: A 46 SKKT 92B: A 48

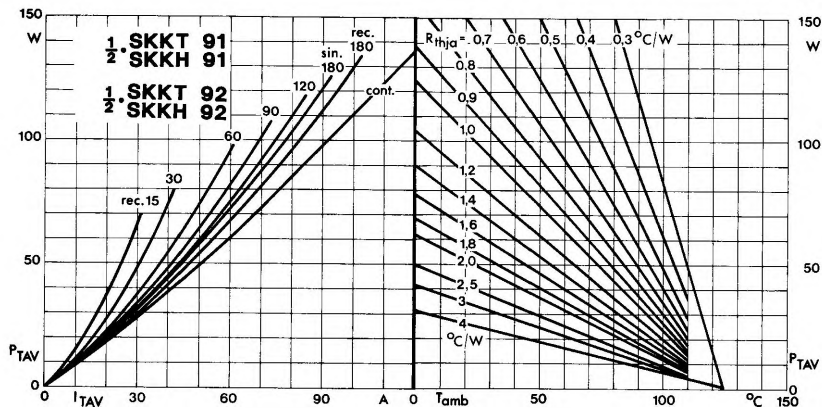


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

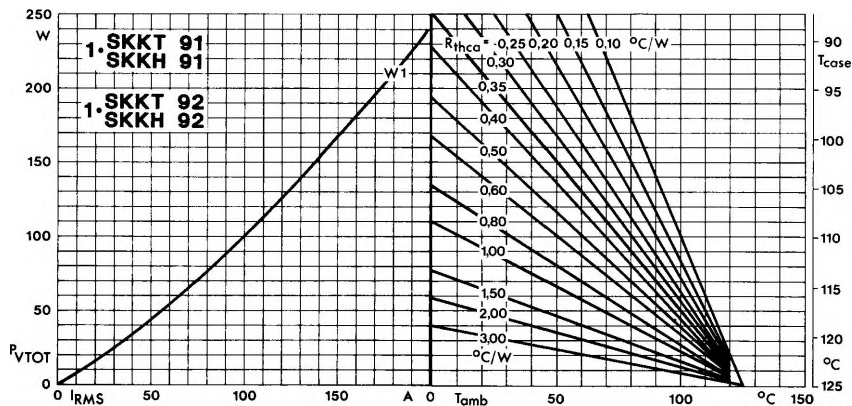


Fig. 2 Power dissipation per module vs. rms current and case temperature

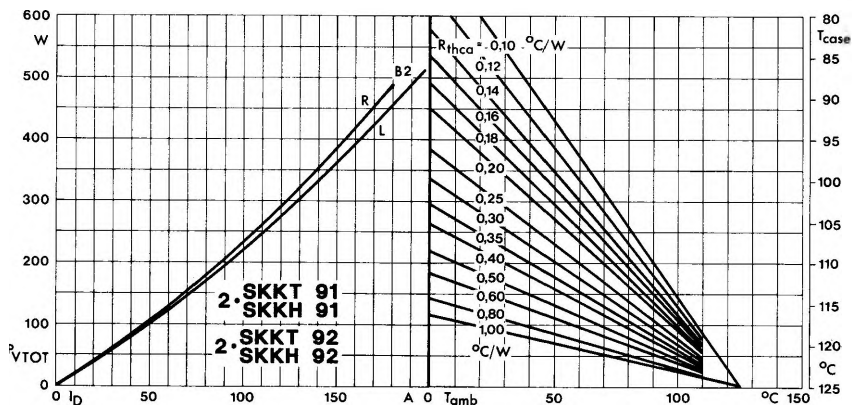


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

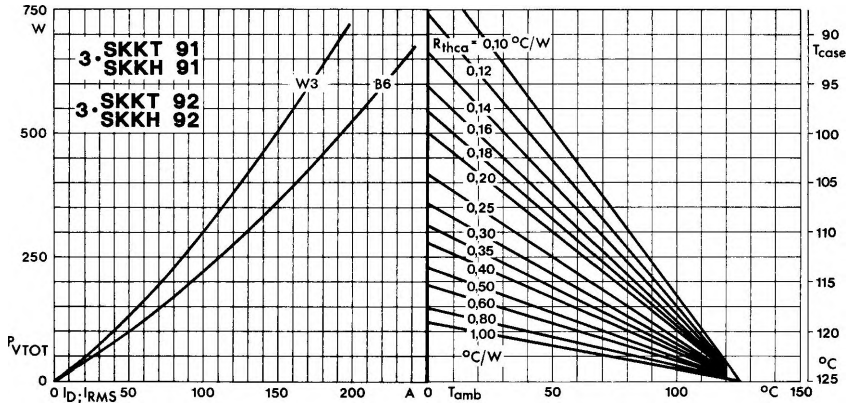


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

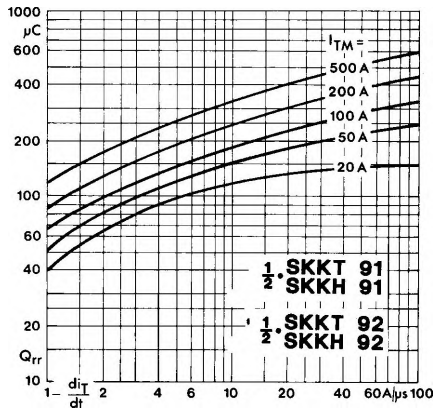


Fig. 5 Recovered charge vs. current decrease

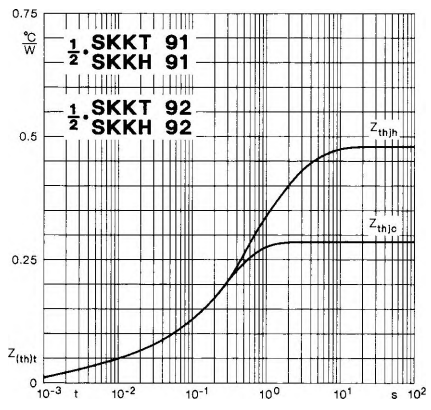


Fig. 6 Transient thermal impedance vs. time

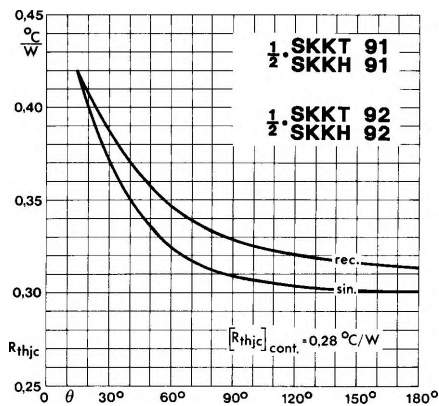


Fig. 7 Thermal resistance vs. conduction angle

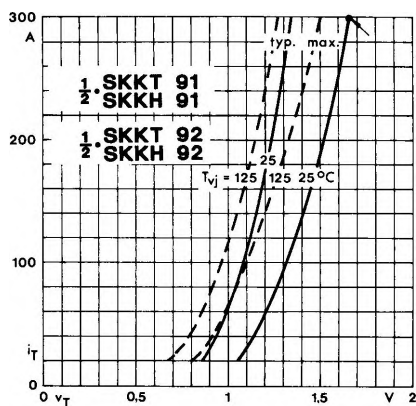


Fig. 8 On-state characteristics

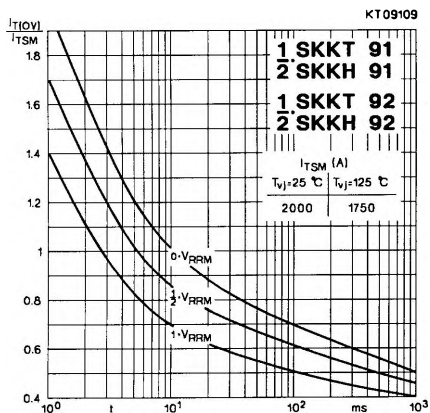


Fig. 9 Surge overcurrent vs. time

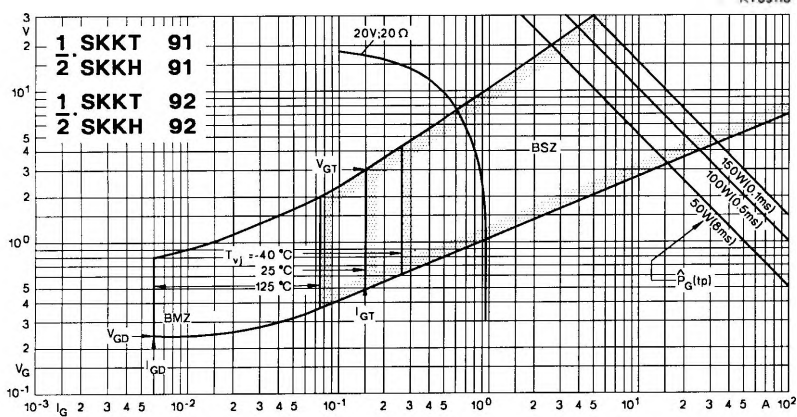


Fig. 10 Gate trigger characteristics