

SEMPACK® 1 Thyristor/ Diode Modules

SKKT 71 **SKKH 71**
SKKT 72 **SKKH 72**
SKKT 72B



SKKT 71 **SKKH 71**



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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 72 B configuration (case A 48)

2) See the assembly instructions

3) /20 E, /22 E max. 30 mA

V _{RSM}	V _{RRM}	(dv/dt) _{cr}	I _{TRMS} (maximum value for continuous operation)			
			125 A			
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = 78 °C)			
			80 A			
700	600	500	SKKT 71/06 D	–	–	SKKH 72/06 D
900	800	500	SKKT 71/08 D	SKKT 72/08 D ¹⁾	SKKH 71/08 D	SKKH 72/08 D
1300	1200	500	SKKT 71/12 D	–	SKKH 71/12 D	–
1300	1200	1000	SKKT 71/12 E	SKKT 72/12 E ¹⁾	–	SKKH 72/12 E
1500	1400	1000	SKKT 71/14 E	SKKT 72/14 E ¹⁾	SKKH 71/14 E	SKKH 72/14 E
1700	1600	1000	SKKT 71/16 E	SKKT 72/16 E ¹⁾	SKKH 71/16 E	SKKH 72/16 E
1900	1800	1000	SKKT 71/18 E	SKKT 72/18 E ¹⁾	SKKH 71/18 E	SKKH 72/18 E
2100	2000	1000	SKKT 71/20 E	SKKT 72/20 E ¹⁾	–	SKKH 72/20 E
2300	2200	1000	SKKT 71/22 E	SKKT 72/22 E ¹⁾	–	SKKH 72/22 E

Symbol	Conditions	SKKT 71 SKKH 71	SKKT 72 SKKH 72B SKKH 72
I _{TAV}	sin. 180; T _{case} = 78 °C T _{case} = 85 °C	80 A 70 A	
I _D	B2/B6 T _{amb} = 45 °C; P 3/180 T _{amb} = 35 °C; P 3/180 F	62 A/75 A 115 A/145 A	
I _{RMS}	W1/W3 T _{amb} = 35 °C; P 3/180 F	155 A/3 x 115 A	
I _{TSM}	T _{vi} = 25 °C; 10 ms T _{vi} = 125 °C; 10 ms	1 600 A 1 450 A	
i ² t	T _{vi} = 25 °C; 8,3 ... 10 ms T _{vi} = 125 °C; 8,3 ... 10 ms	13 000 A ² s 10 500 A ² s	
t _{gd}	T _{vi} = 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 _{vi} = 125 °C	150 A/μs	
t _q	T _{vi} = 125 °C	typ. 80 μs	
I _H	T _{vi} = 25 °C;	typ. 150 mA; max. 250 mA	
I _L	T _{vi} = 25 °C; R _G = 33 Ω	typ. 300 mA; max. 600 mA	
V _T	T _{vi} = 25 °C; I _T = 300 A	max. 1,9 V	
V _{T(TO)}	T _{vi} = 125 °C	0,9 V	
r _T	T _{vi} = 125 °C	3,5 mΩ	
I _{DD} ; I _{RD}	T _{vi} = 125 °C; V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}	max. 20 mA ³⁾	
V _{GT}	T _{vi} = 25 °C; d. c.	3 V	
I _{GT}	T _{vi} = 25 °C; d. c.	150 mA	
V _{GD}	T _{vi} = 125 °C; d. c.	0,25 V	
I _{GD}	T _{vi} = 125 °C; d. c.	6 mA	
R _{thjc}	cont.	} per thyristor/per module	
R _{thch}	sin. 180		
T _{vi} ; T _{Stg}	rec. 120		
V _{isol}	a. c. 50 Hz; r. m. s.; 1 s/1 min	3600 V~ / 3000 V~	
M ₁	to heatsink	5 Nm/44 lb. in. ± 15 % ²⁾	
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 71: A 5 SKKH 71: A 6	SKKT 72: A 46 SKKT 72B: A 48 SKKH 72: A 47

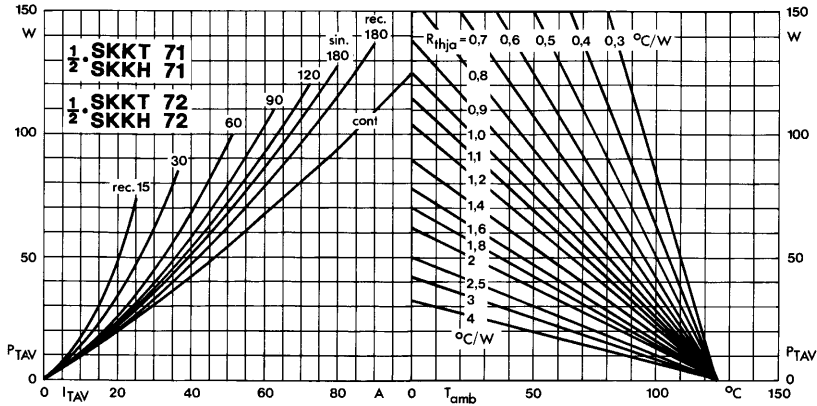


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

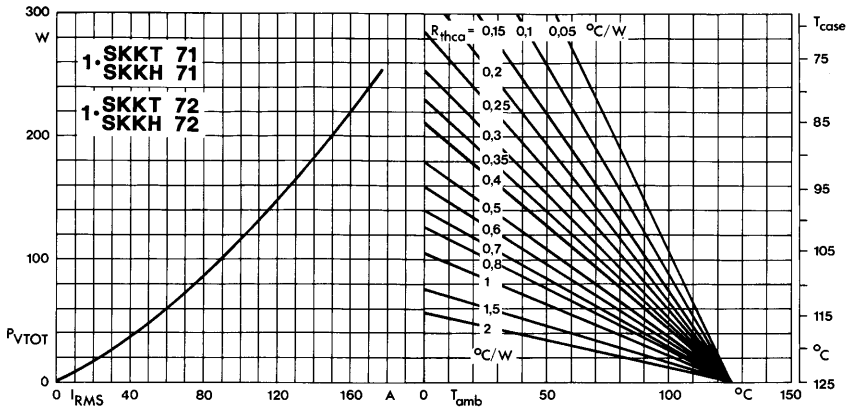


Fig. 2 Power dissipation per module vs. rms current and case temperature

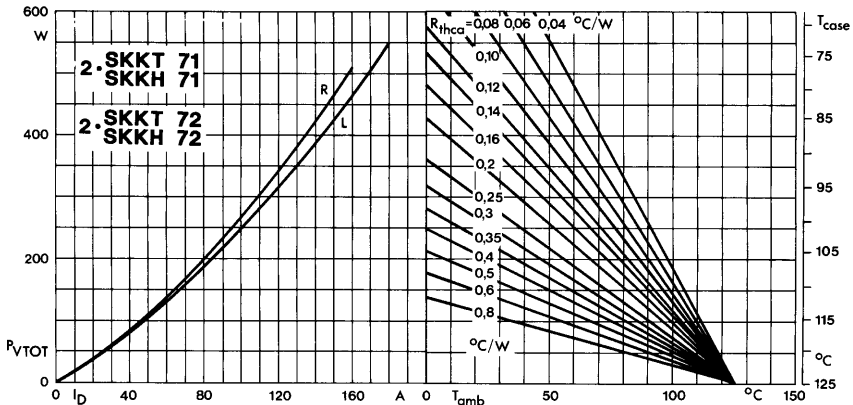


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

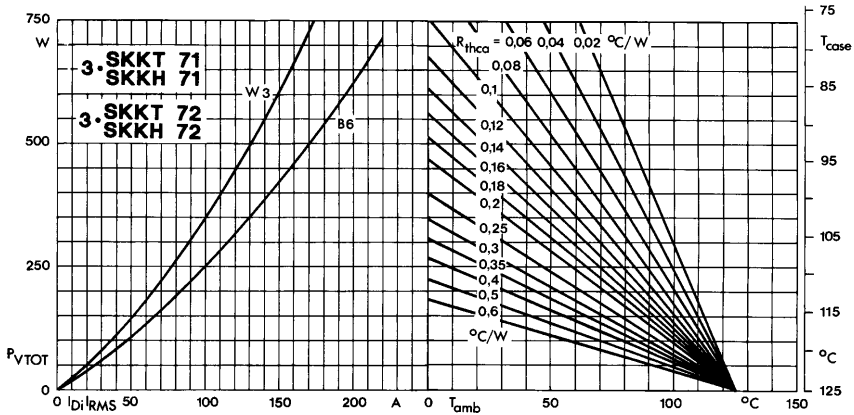


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

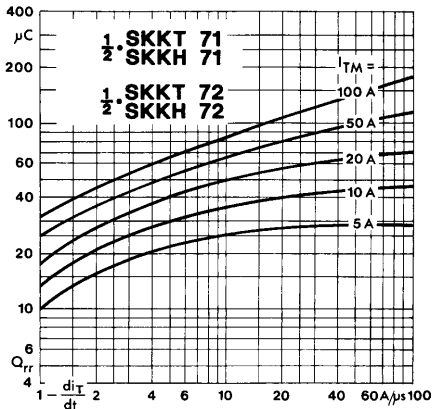


Fig. 5 Recovered charge vs. current decrease

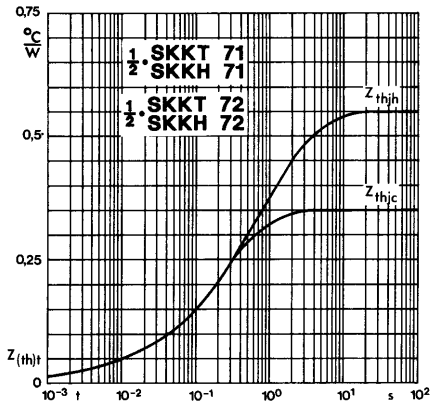


Fig. 6 Transient thermal impedance vs. time

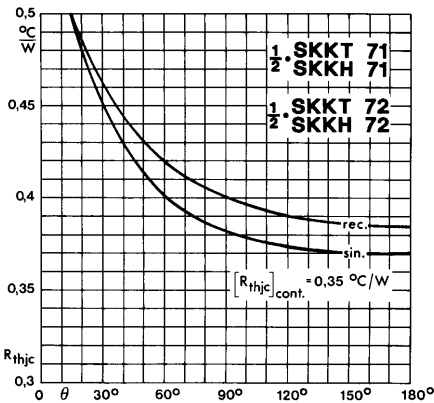


Fig. 7 Thermal resistance vs. conduction angle

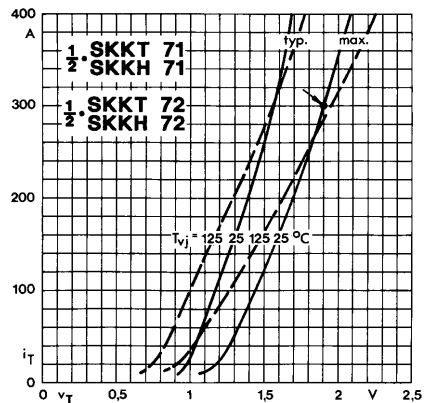


Fig. 8 On-state characteristics

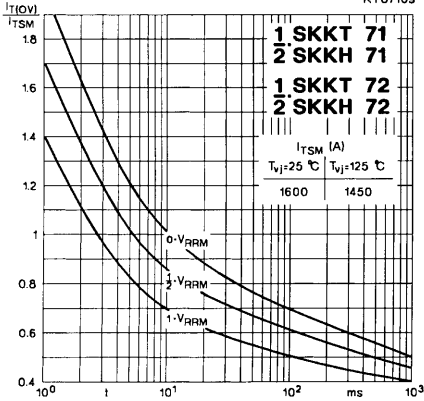


Fig. 9 Surge overload current vs. time

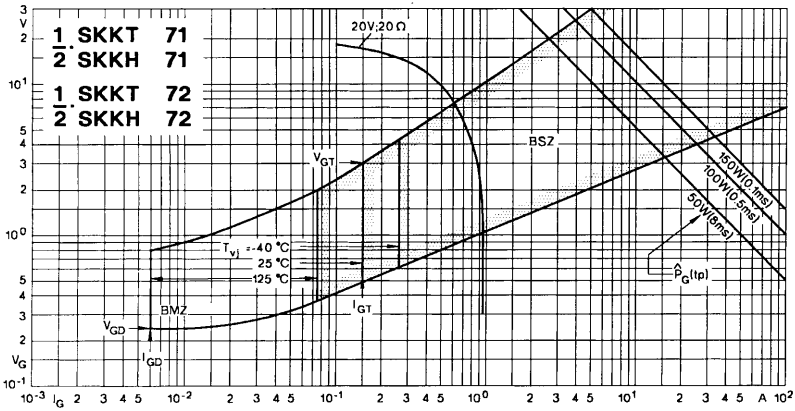


Fig. 10 Gate trigger characteristics