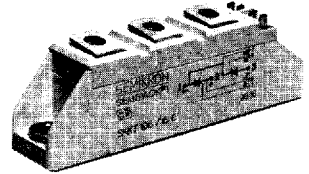


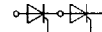
## SEMIPACK® 1 Thyristor/ Diode Modules

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

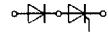


V <sub>RM</sub>	V <sub>DRM</sub>	(dv/dt) <sub>cr</sub>	I <sub>TSM</sub> (maximum value for continuous operation)			
			125 A			
V	V	V/μs	I <sub>TAV</sub> (sin. 180; T <sub>case</sub> = 78 °C)			
			80 A			
700	600	500	SKKT 71/06 D	–	–	SKKH 72/06 D
900	800	500	SKKT 71/08 D	SKKT 72/08 D <sup>1)</sup>	SKKH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

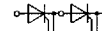
Symbol	Conditions	SKKT 71 SKKH 71	SKKT 72 SKKT 72B SKKH 72
I <sub>TAV</sub>	sin. 180; T <sub>case</sub> = 78 °C T <sub>case</sub> = 85 °C		80 A 70 A
I <sub>D</sub>	B2/B6 T <sub>amb</sub> = 45 °C; P 3/180 T <sub>amb</sub> = 35 °C; P 3/180 F		62 A/75 A 115 A/145 A
I <sub>RMS</sub>	W1/W3 T <sub>amb</sub> = 35 °C; P 3/180 F		155 A/3 x 115 A
I <sub>TSM</sub>	T <sub>vj</sub> = 25 °C; 10 ms T <sub>vj</sub> = 125 °C; 10 ms		1 600 A 1 450 A
i <sup>2</sup> t	T <sub>vj</sub> = 25 °C; 8,3 ... 10 ms T <sub>vj</sub> = 125 °C; 8,3 ... 10 ms		13 000 A <sup>2</sup> s 10 500 A <sup>2</sup> s
t <sub>gd</sub>	T <sub>vj</sub> = 25 °C; I <sub>G</sub> = 1 A; di <sub>c</sub> /dt = 1 A/μs		1 μs
t <sub>gr</sub>	V <sub>D</sub> = 0,67 · V <sub>DRM</sub>		2 μs
(di/dt) <sub>cr</sub>	T <sub>vj</sub> = 125 °C		150 A/μs
t <sub>q</sub>	T <sub>vj</sub> = 125 °C		typ. 80 μs
I <sub>H</sub>	T <sub>vj</sub> = 25 °C;		typ. 150 mA; max. 250 mA
I <sub>L</sub>	T <sub>vj</sub> = 25 °C; R <sub>G</sub> = 33 Ω		typ. 300 mA; max. 600 mA
V <sub>T</sub>	T <sub>vj</sub> = 25 °C; I <sub>T</sub> = 300 A		max. 1,9 V
V <sub>T(TO)</sub>	T <sub>vj</sub> = 125 °C		0,9 V
r <sub>T</sub>	T <sub>vj</sub> = 125 °C		3,5 mΩ
I <sub>DD</sub> ; I <sub>RD</sub>	T <sub>vj</sub> = 125 °C; V <sub>DD</sub> = V <sub>DRM</sub> ; V <sub>RD</sub> = V <sub>RRM</sub>		max. 20 mA <sup>3)</sup>
V <sub>GT</sub>	T <sub>vj</sub> = 25 °C; d. c.		3 V
I <sub>GT</sub>	T <sub>vj</sub> = 25 °C; d. c.		150 mA
V <sub>GD</sub>	T <sub>vj</sub> = 125 °C; d. c.		0,25 V
I <sub>GD</sub>	T <sub>vj</sub> = 125 °C; d. c.		6 mA
R <sub>thjc</sub>	cont. } sin. 180 } per thyristor/per module rec. 120 }		0,35 °C/W / 0,18 °C/W 0,37 °C/W / 0,19 °C/W 0,39 °C/W / 0,20 °C/W 0,2 °C/W / 0,1 °C/W – 40 ... +125 °C
R <sub>thch</sub>			
T <sub>vj</sub> ; T <sub>stg</sub>			
V <sub>isol</sub>	a. c. 50 Hz; r. m. s.; 1 s/1 min		3600 V~ / 3000 V~
M <sub>1</sub>	to heatsink	SI units/	5 Nm/44 lb. in. ± 15 % <sup>2)</sup>
M <sub>2</sub>	to terminals	US units	3 Nm/26 lb. in. ± 15 %
a			5 · 9,81 m/s <sup>2</sup>
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



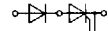
**SKKT 71**



**SKKH 71**



**SKKT 72**



**SKKH 72**

### 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)

<sup>1)</sup> Also available in SKKT 72 B configuration (case A 48)

<sup>2)</sup> See the assembly instructions

<sup>3)</sup> /20 E, /22 E max. 30 mA

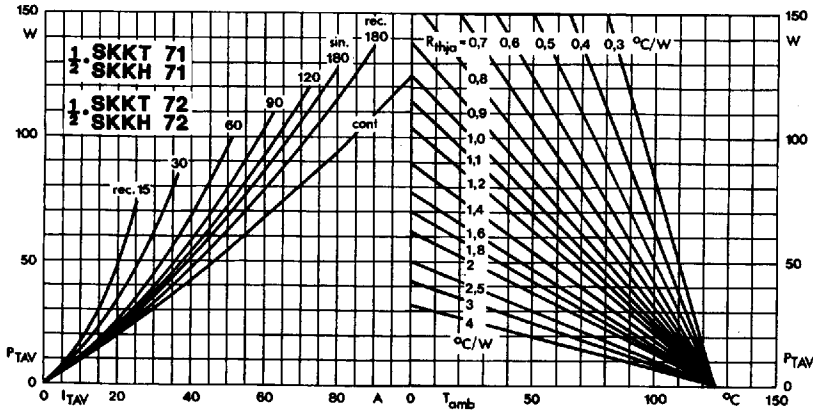


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

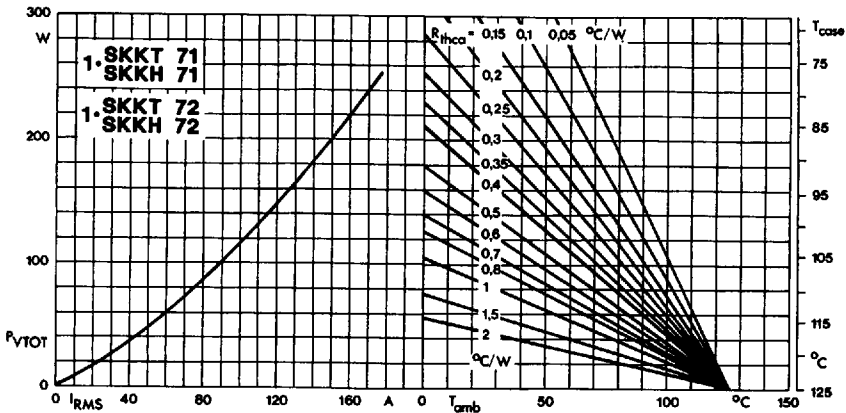


Fig. 2 Power dissipation per module vs. rms current and case temperature

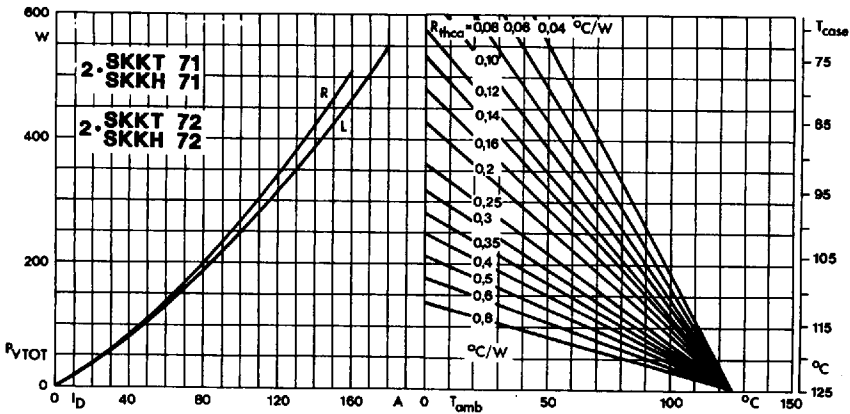


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

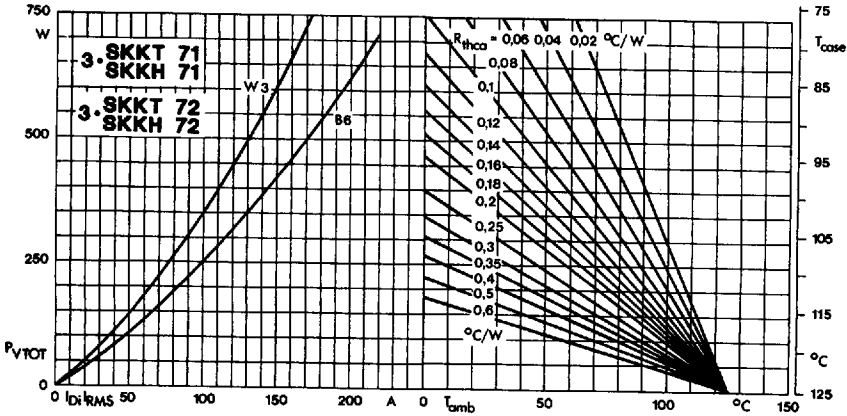


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

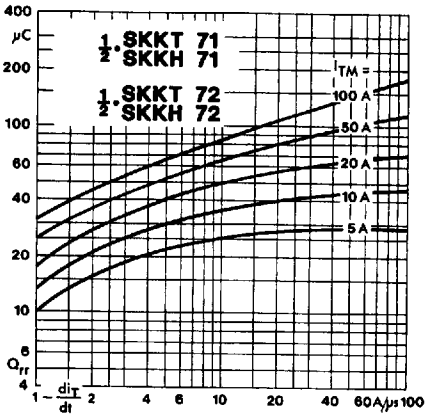


Fig. 5 Recovered charge vs. current decrease

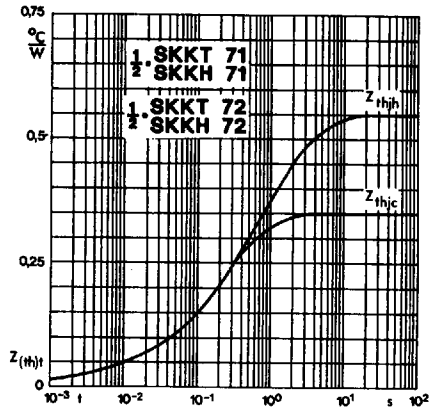


Fig. 6 Transient thermal impedance vs. time

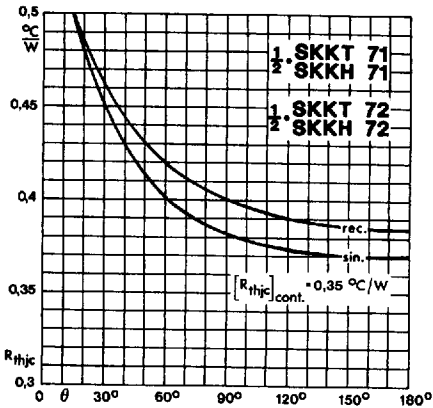


Fig. 7 Thermal resistance vs. conduction angle

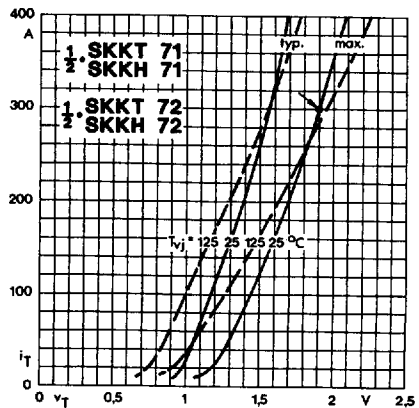


Fig. 8 On-state characteristics

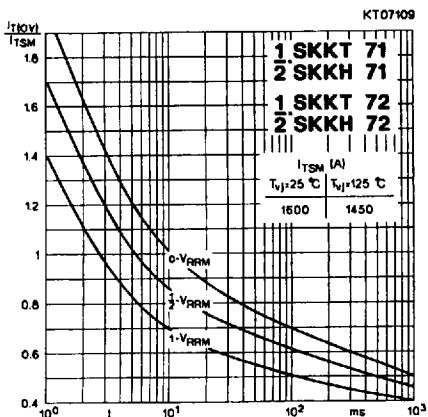


Fig. 9 Surge overload current vs. time

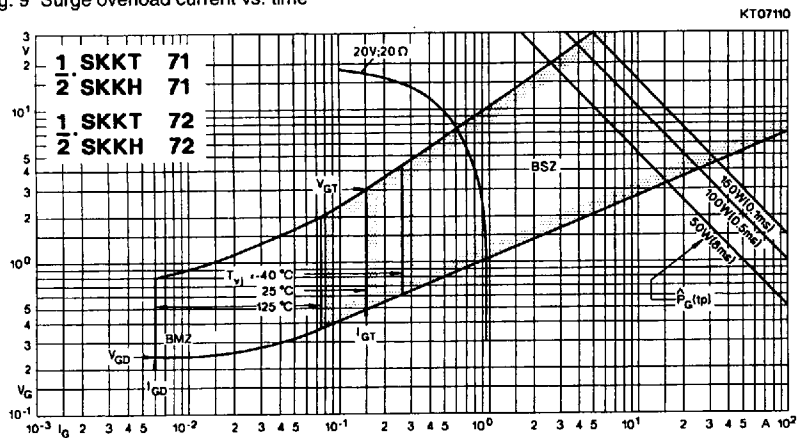


Fig. 10 Gate trigger characteristics