

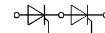
## SEMPACK® 1 Thyristor/ Diode Modules

**SKKT 56**      **SKKH 56**  
**SKKT 57**      **SKKH 57**  
**SKKT 57B**

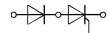


V <sub>RSM</sub>	V <sub>RDM</sub>	(dv/dt) <sub>cr</sub>	I <sub>TRMS</sub> (maximum value for continuous operation)			
			95 A			
V	V	V/μs	I <sub>TAV</sub> (sin. 180; T <sub>case</sub> = 74 °C)			
			60 A			
500	400	500	–	–	SKKH 56/04 D	–
700	600	500	SKKT 56/06 D	SKKT 57/06 D	SKKH 56/06 D	SKKH 57/06 D
900	800	500	SKKT 56/08 D	SKKT 57/08 D <sup>1)</sup>	SKKH 56/08 D	SKKH 57/08 D
1300	1200	500	SKKT 56/12 D	–	SKKH 56/12 D	–
1300	1200	1000	SKKT 56/12 E	SKKT 57/12 E <sup>1)</sup>	–	SKKH 57/12 E
1500	1400	1000	SKKT 56/14 E	SKKT 57/14 E <sup>1)</sup>	SKKH 56/14 E	SKKH 57/14 E
1700	1600	1000	SKKT 56/16 E	SKKT 57/16 E <sup>1)</sup>	SKKH 56/16 E	SKKH 57/16 E
1900	1800	1000	SKKT 56/18 E	SKKT 57/18 E <sup>1)</sup>	SKKH 56/18 E	SKKH 57/18 E
2100	2000	1000	SKKT 56/20 E	SKKT 57/20 E <sup>1)</sup>	–	SKKH 57/20 E
2300	2200	1000	SKKT 56/22 E	SKKT 57/22 E <sup>1)</sup>	–	SKKH 57/22 E

Symbol	Conditions	SKKT 56 SKKH 56	SKKT 57 SKKH 57B SKKH 57
I <sub>TAV</sub>	sin. 180; T <sub>case</sub> = 74 °C T <sub>case</sub> = 80 °C	60 A 55 A	60 A 55 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	57 A/68 A 100 A/130 A	57 A/68 A 100 A/130 A
I <sub>RMS</sub>	W1/W3 T <sub>amb</sub> = 35 °C; P 3/180 F	130 A/3 x 100 A	130 A/3 x 100 A
I <sub>TSM</sub>	T <sub>vj</sub> = 25 °C; 10 ms T <sub>vj</sub> = 125 °C; 10 ms	1 500 A 1 250 A	1 500 A 1 250 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	11 000 A <sup>2</sup> s 8 000 A <sup>2</sup> s	11 000 A <sup>2</sup> s 8 000 A <sup>2</sup> s
t <sub>gd</sub> t <sub>gr</sub>	T <sub>vj</sub> = 25 °C; I <sub>G</sub> = 1 A; di <sub>G</sub> /dt = 1 A/μs V <sub>D</sub> = 0,67 · V <sub>DRM</sub>	1 μs 2 μs	1 μs 2 μs
(di/dt) <sub>cr</sub>	T <sub>vj</sub> = 125 °C	150 A/μs	150 A/μs
t <sub>q</sub>	T <sub>vj</sub> = 125 °C	typ. 80 μs	typ. 80 μs
I <sub>H</sub>	T <sub>vj</sub> = 25 °C;	typ. 150 mA; max. 250 mA	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	typ. 300 mA; max. 600 mA
V <sub>T</sub>	T <sub>vj</sub> = 25 °C; I <sub>T</sub> = 200 A	max. 1,65 V	max. 1,65 V
V <sub>T(TO)</sub>	T <sub>vj</sub> = 125 °C	0,9 V	0,9 V
r <sub>T</sub>	T <sub>vj</sub> = 125 °C	3,5 mΩ	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>RDM</sub>	max. 15 mA <sup>3)</sup>	max. 15 mA <sup>3)</sup>
V <sub>GT</sub>	T <sub>vj</sub> = 25 °C; d. c.	3 V	3 V
I <sub>GT</sub>	T <sub>vj</sub> = 25 °C; d. c.	150 mA	150 mA
V <sub>GD</sub>	T <sub>vj</sub> = 125 °C; d. c.	0,25 V	0,25 V
I <sub>GD</sub>	T <sub>vj</sub> = 125 °C; d. c.	6 mA	6 mA
R <sub>thjc</sub> R <sub>thch</sub> T <sub>vj</sub> , T <sub>stg</sub>	cont. } sin. 180 } per thyristor/per module rec. 120 }	0,57 °C/W / 0,29 °C/W 0,60 °C/W / 0,30 °C/W 0,64 °C/W / 0,32 °C/W 0,2 °C/W / 0,1 °C/W – 40 ... +125 °C	0,57 °C/W / 0,29 °C/W 0,60 °C/W / 0,30 °C/W 0,64 °C/W / 0,32 °C/W 0,2 °C/W / 0,1 °C/W – 40 ... +125 °C
V <sub>isol</sub> M <sub>1</sub> M <sub>2</sub> a w	a. c. 50 Hz; r.m.s.; 1 s/1 min to heatsink } SI units / US units to terminals }	3600 V ~ / 3000 V ~ 5 Nm/44 lb. in. ± 15 % <sup>2)</sup> 3 Nm/26 lb. in. ± 15 % 5 · 9,81 m/s <sup>2</sup> 120 g	3600 V ~ / 3000 V ~ 5 Nm/44 lb. in. ± 15 % <sup>2)</sup> 3 Nm/26 lb. in. ± 15 % 5 · 9,81 m/s <sup>2</sup> 120 g
Case	→ page B 1 – 93	SKKT 56: A 5 SKKH 56: A 6	SKKT 57: A 46 SKKT 57B: A 48 SKKH 57: A 47



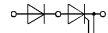
**SKKT 56**



**SKKH 56**



**SKKT 57**



**SKKH 57**

### 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 57 B configuration (case A 48)

2) See the assembly instructions

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

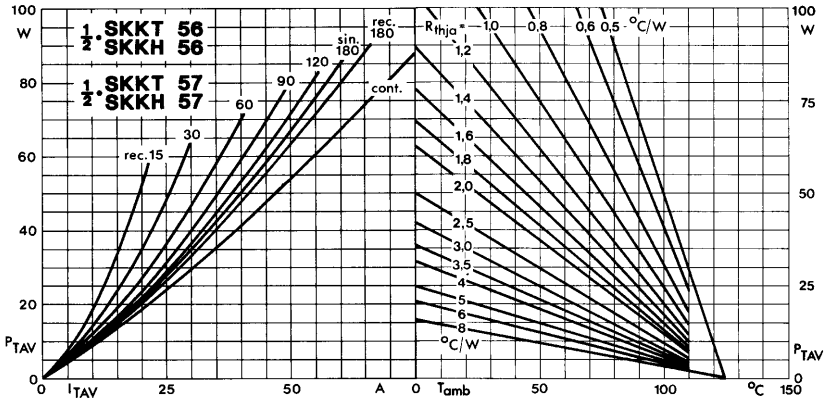


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

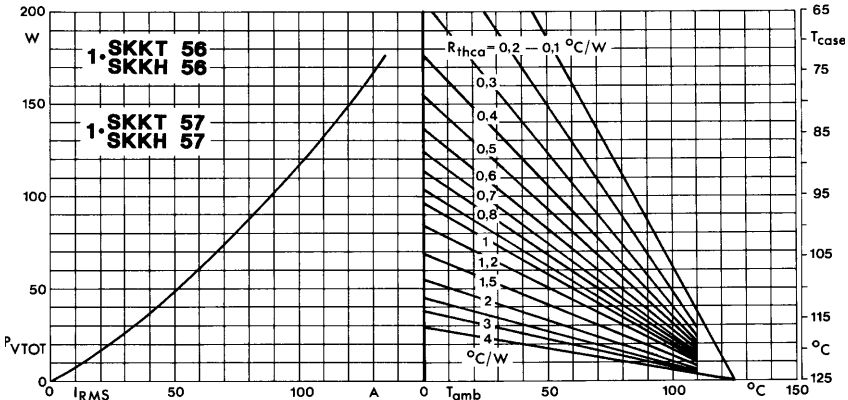


Fig. 2 Power dissipation per module vs. rms current and case temperature

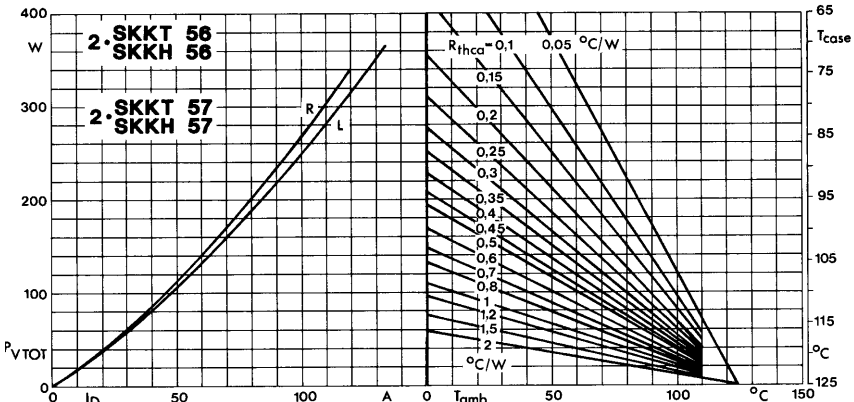


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

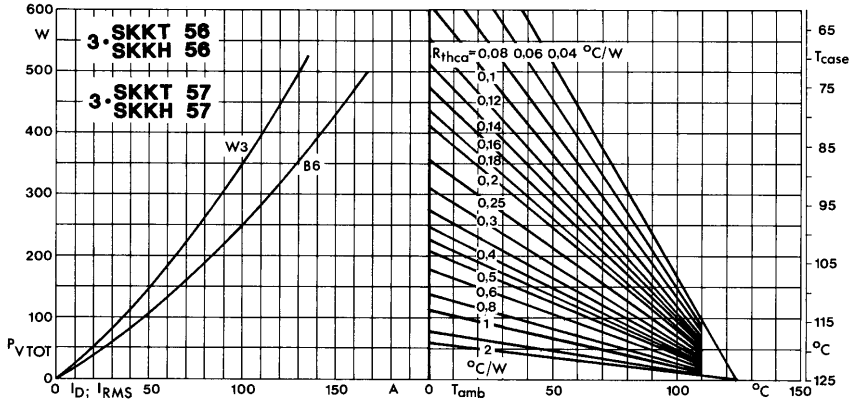


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

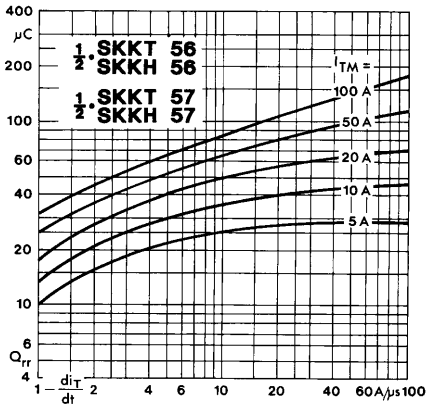


Fig. 5 Recovered charge vs. current decrease

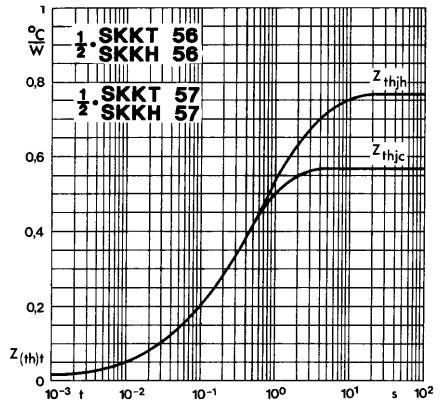


Fig. 6 Transient thermal impedance vs. time

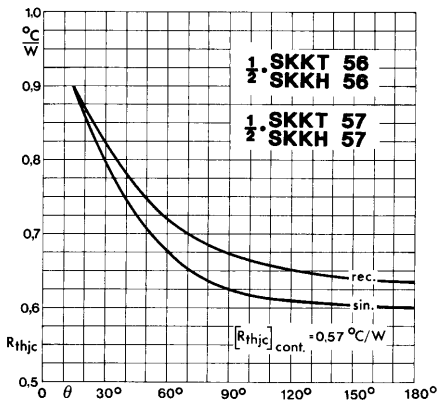


Fig. 7 Thermal resistance vs. conduction angle

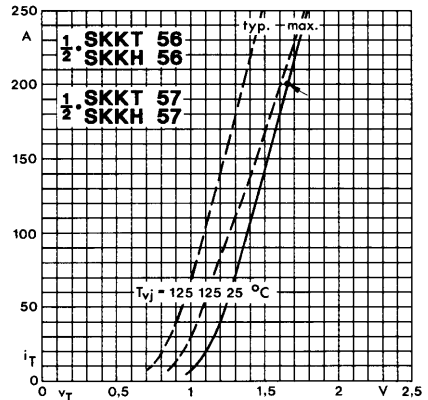


Fig. 8 On-state characteristics

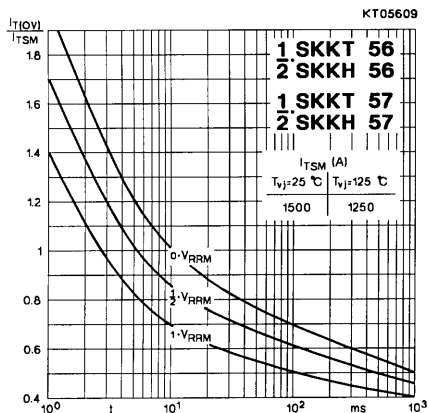


Fig. 9 Surge overload current vs. time

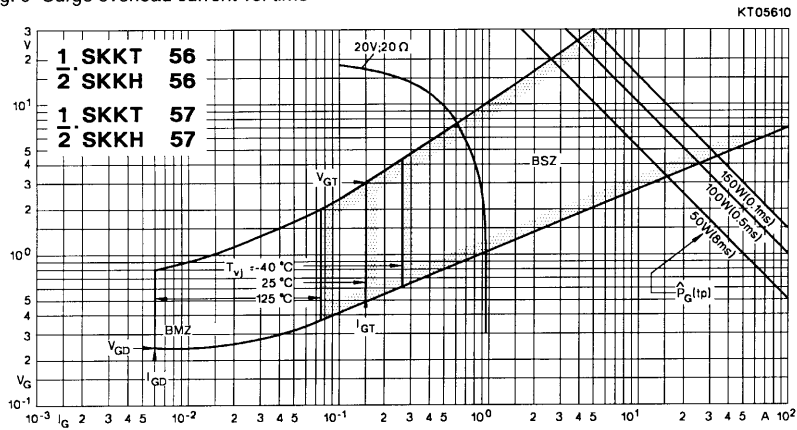


Fig. 10 Gate trigger characteristics