

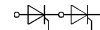
V _{RSM}	V _{RRM}	(dv/dt) _{cr}	I _T RMS (maximum value for continuous operation)			
			95 A			
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = 74 °C)			
			60 A			
500	400	500	–	–	SKKH 56/04 D	–
700	600	500	SKKT 56/06 D	SKKT 57/06 D	SKKH 56/06 D	SKKH 57/06 D
900	800	500	SKKT 56/08 D	SKKT 57/08 D ¹⁾	SKKH 56/08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

SEMIKRON® 1 Thyristor/ Diode Modules

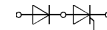
SKKT 56 SKKH 56
SKKT 57 SKKH 57
SKKT 57B



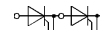
Symbol	Conditions	SKKT 56 SKKH 56	SKKT 57 SKKT 57B SKKH 57
I _{TAV}	sin. 180; T _{case} = 74 °C T _{case} = 80 °C	60 A 55 A	60 A 55 A
I _D	B2/B6 T _{amb} = 45 °C; P 3/180 T _{amb} = 35 °C; P 3/180 F	57 A/68 A 100 A/130 A	57 A/68 A 100 A/130 A
I _{RMS}	W1/W3 T _{amb} = 35 °C; P 3/180 F	130 A/3 x 100 A	130 A/3 x 100 A
I _{TSM}	T _{vj} = 25 °C; 10 ms T _{vj} = 125 °C; 10 ms	1 500 A 1 250 A	1 500 A 1 250 A
i ² t	T _{vj} = 25 °C; 8,3 ... 10 ms T _{vj} = 125 °C; 8,3 ... 10 ms	11 000 A ² s 8 000 A ² s	11 000 A ² s 8 000 A ² s
t _{gd} t _{gr}	T _{vj} = 25 °C; I _G = 1 A; di _G /dt = 1 A/μs V _D = 0,67 · V _{DRM}	1 μs 2 μs	1 μs 2 μs
(di/dt) _{cr}	T _{vj} = 125 °C	150 A/μs	150 A/μs
t _q	T _{vj} = 125 °C	typ. 80 μs	typ. 80 μs
I _H	T _{vj} = 25 °C;	typ. 150 mA; max. 250 mA	typ. 150 mA; max. 250 mA
I _L	T _{vj} = 25 °C; R _G = 33 Ω	typ. 300 mA; max. 600 mA	typ. 300 mA; max. 600 mA
V _T	T _{vj} = 25 °C; I _T = 200 A	max. 1,65 V	max. 1,65 V
V _{T(TO)}	T _{vj} = 125 °C	0,9 V	0,9 V
r _T	T _{vj} = 125 °C	3,5 mΩ	3,5 mΩ
I _{DD} ; I _{RD}	T _{vj} = 125 °C; V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}	max. 15 mA ³⁾	max. 15 mA ³⁾
V _{GT}	T _{vj} = 25 °C; d. c.	3 V	3 V
I _{GT}	T _{vj} = 25 °C; d. c.	150 mA	150 mA
V _{GD}	T _{vj} = 125 °C; d. c.	0,25 V	0,25 V
I _{GD}	T _{vj} = 125 °C; d. c.	6 mA	6 mA
R _{thjc}	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	0,57 °C/W / 0,29 °C/W 0,60 °C/W / 0,30 °C/W 0,64 °C/W / 0,32 °C/W
R _{thch} T _{vj} ; T _{stg}		0,2 °C/W / 0,1 °C/W – 40 ... +125 °C	0,2 °C/W / 0,1 °C/W – 40 ... +125 °C
V _{isol} M ₁ M ₂ a w	a. c. 50 Hz; r.m.s.; 1 s/1 min to heatsink } to terminals } SI units / US units approx.	3600 V~ / 3000 V~ 5 Nm/44 lb. in. ± 15 % ²⁾ 3 Nm/26 lb. in. ± 15 % 5 · 9,81 m/s ² 120 g	3600 V~ / 3000 V~ 5 Nm/44 lb. in. ± 15 % ²⁾ 3 Nm/26 lb. in. ± 15 % 5 · 9,81 m/s ² 120 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



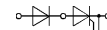
SKKT 56



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

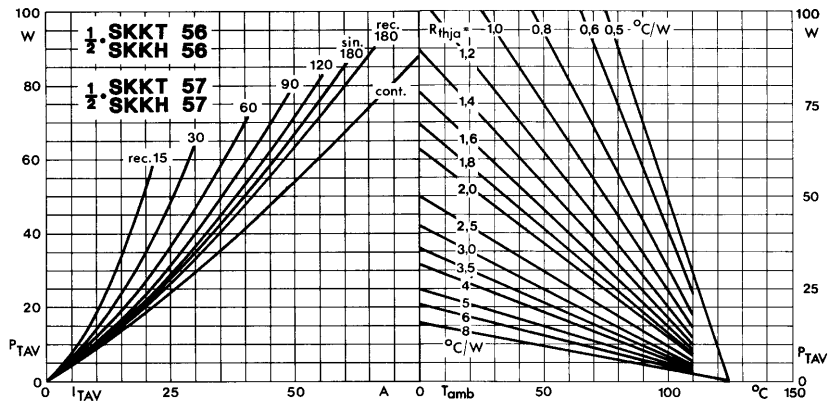


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

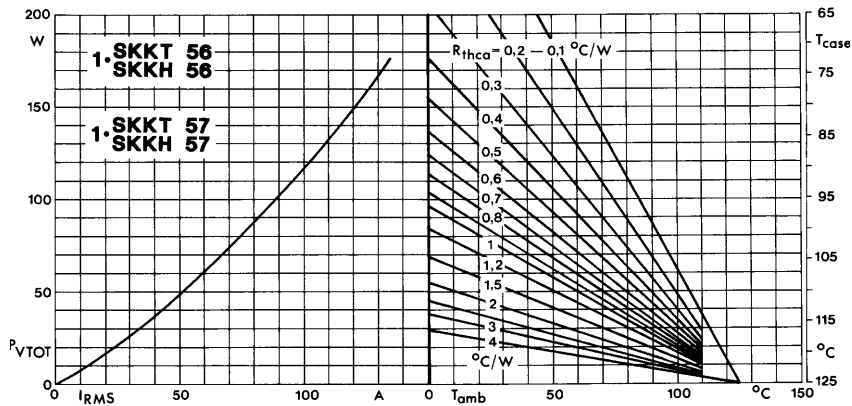


Fig. 2 Power dissipation per module vs. rms current and case temperature

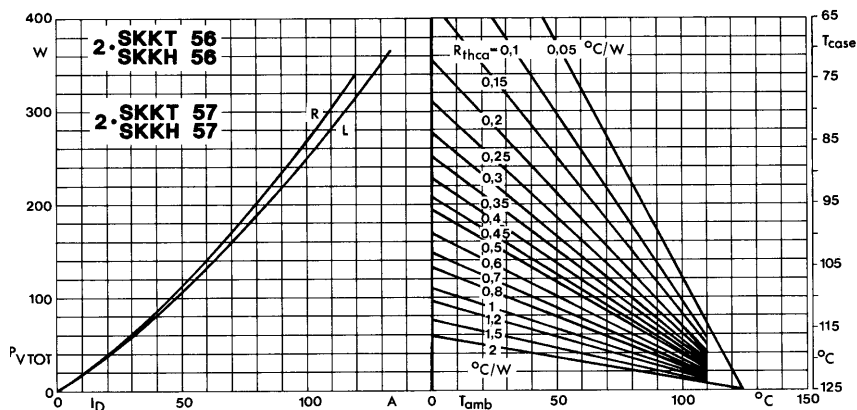


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

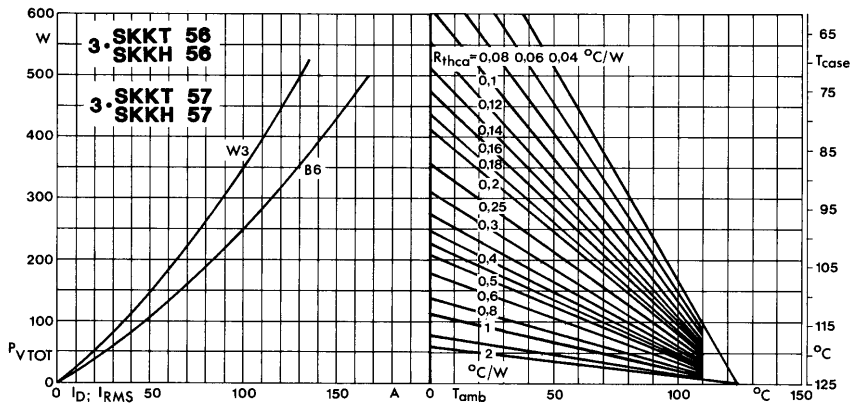


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

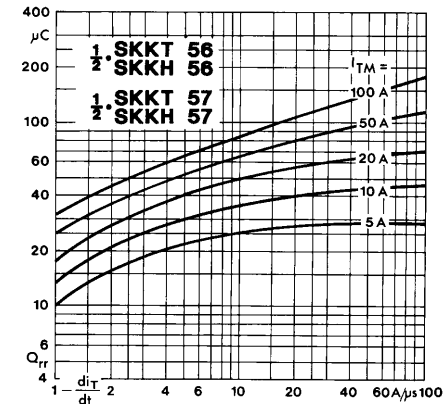


Fig. 5 Recovered charge vs. current decrease

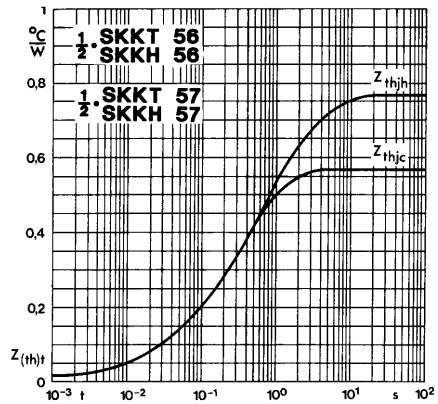


Fig. 6 Transient thermal impedance vs. time

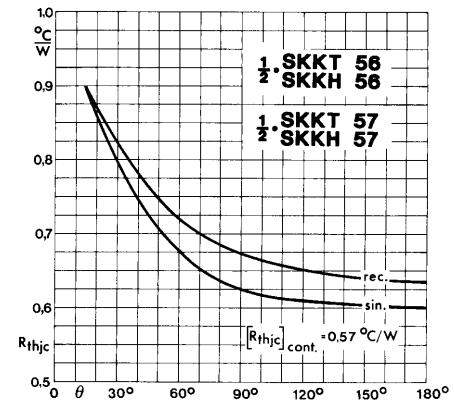


Fig. 7 Thermal resistance vs. conduction angle

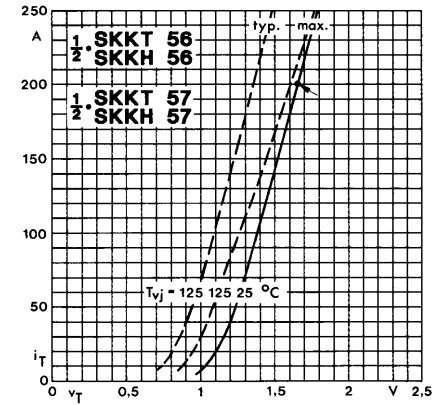


Fig. 8 On-state characteristics

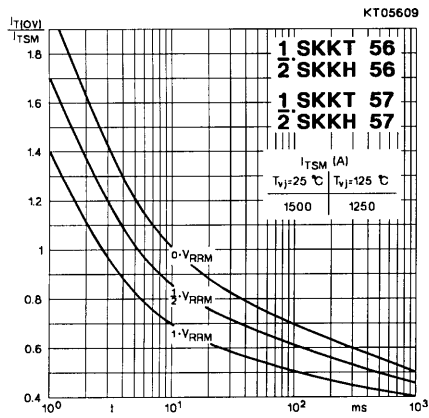


Fig. 9 Surge overload current vs. time

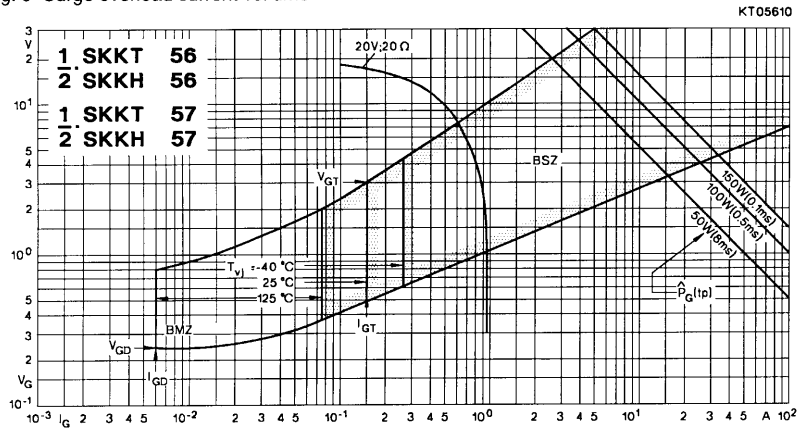


Fig. 10 Gate trigger characteristics