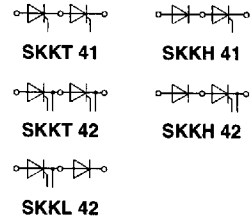
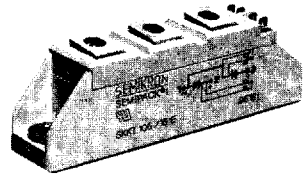


SEMPACK® 1 Thyristor/ Diode Modules

SKKT 41 SKKH 41
SKKT 42 SKKH 42
SKKT 42B SKKL 42²⁾



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 42 B configuration (case A 48).
2) SKKL 42 available on request
3) /20 E, /22 E max. 30 mA
4) See the assembly instructions

V _{RSM}	V _{RRM}	(dv/dt) _{cr}	I _{TSM} (maximum value for continuous operation)			
			75 A			
V	V	V/μs	I _{TAV} (sin. 180; T _{case} = 68 °C)			
			48 A			
500	400	500	-	-	SKKH 41/04 D	-
700	600	500	SKKT 41/06 D	SKKT 42/06 D	SKKH 41/06 D	SKKH 42/06 D
900	800	500	SKKT 41/08 D	SKKT 42/08 D ¹⁾	SKKH 41/08 D	SKKH 42/08 D
1300	1200	500	SKKT 41/12 D	-	SKKH 41/12 D	-
1300	1200	1000	SKKT 41/12 E	SKKT 42/12 E ¹⁾	SKKH 41/12 E	SKKH 42/12 E
1500	1400	1000	SKKT 41/14 E	SKKT 42/14 E ¹⁾	SKKH 41/14 E	SKKH 42/14 E
1700	1600	1000	SKKT 41/16 E	SKKT 42/16 E ¹⁾	SKKH 41/16 E	SKKH 42/16 E
1900	1800	1000	SKKT 41/18 E	SKKT 42/18 E ¹⁾	SKKH 41/18 E	SKKH 42/18 E
2100	2000	1000	SKKT 41/20 E	SKKT 42/20 E ¹⁾	-	-
2300	2200	1000	SKKT 41/22 E	SKKT 42/22 E ¹⁾	-	-

Symbol	Conditions	SKKT 41 SKKH 41	SKKT 42 SKKT 42B SKKH 42
I _{TAV}	sin. 180; T _{case} = 74 °C T _{case} = 85 °C	48 A 40 A	48 A 40 A
I _D	B2/B6 T _{amb} = 45 °C; P 3/180 T _{amb} = 35 °C; P 3/180 F	50 A/60 A 85 A/110 A	50 A/60 A 85 A/110 A
I _{RMS}	W1/W3 T _{amb} = 35 °C; P 3/180 F	110 A/3 x 85 A	110 A/3 x 85 A
I _{TSM}	T _{vj} = 25 °C; 10 ms T _{vj} = 125 °C; 10 ms	1 000 A 850 A	1 000 A 850 A
i ² t	T _{vj} = 25 °C; 8,3 ... 10 ms T _{vj} = 125 °C; 8,3 ... 10 ms	5 000 A ² s 3 600 A ² s	5 000 A ² s 3 600 A ² s
t _{gd}	T _{vj} = 25 °C; I _G = 1 A; dia/dt = 1 A/μs	1 μs	1 μs
t _{gr}	V _D = 0,67 · V _{DRM}	2 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. 1,95 V	max. 1,95 V
V _{T(70)}	T _{vj} = 125 °C	1 V	1 V
r _T	T _{vj} = 125 °C	4,5 mΩ	4,5 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	0,65 °C/W / 0,33 °C/W	0,65 °C/W / 0,33 °C/W
R _{thch}	rec.120 } cont. } per thyristor/per module	0,69 °C/W / 0,35 °C/W	0,69 °C/W / 0,35 °C/W
T _{vj} ; T _{stg}		0,73 °C/W / 0,37 °C/W	0,73 °C/W / 0,37 °C/W
		0,2 °C/W / 0,1 °C/W	0,2 °C/W / 0,1 °C/W
		- 40 ... +125 °C	- 40 ... +125 °C
V _{isol}	a. c. 50 Hz; r. m. s.; 1 s/1 min	3600 V ~ / 3000 V ~	3600 V ~ / 3000 V ~
M ₁	to heatsink } SI units / US units	5 Nm/44 lb. in. ± 15 % ⁴⁾	5 Nm/44 lb. in. ± 15 % ⁴⁾
M ₂		3 Nm/26 lb. in. ± 15 %	3 Nm/26 lb. in. ± 15 %
a		5 · 9,81 m/s ²	5 · 9,81 m/s ²
w	approx.	120 g	120 g
Case	→ page B 1 - 93	SKKT 41: A 5 SKKH 41: A 6 SKKH 42: A 47	SKKL 42: A 59 SKKT 42: A 46 SKKT 42B: A 48

8136671 0005861 305

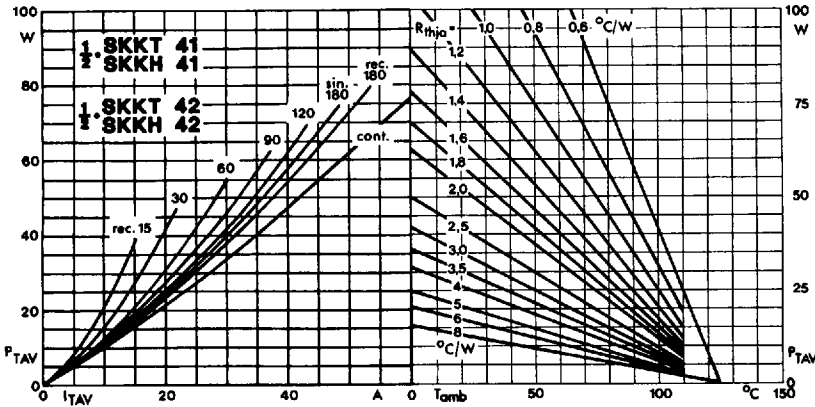


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

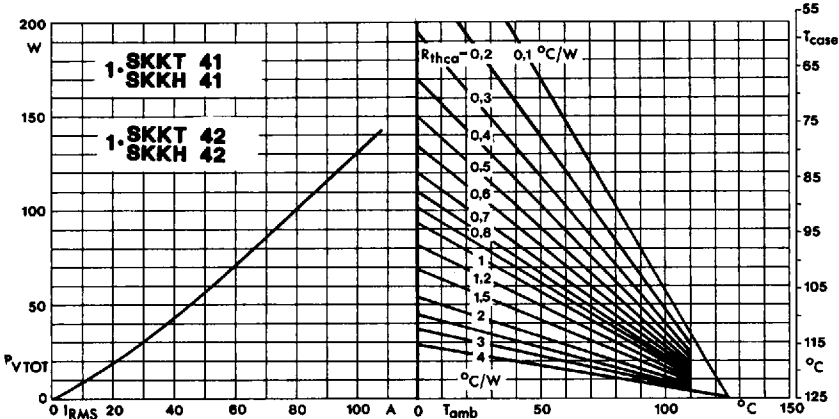


Fig. 2 Power dissipation per module vs. rms current and case temperature

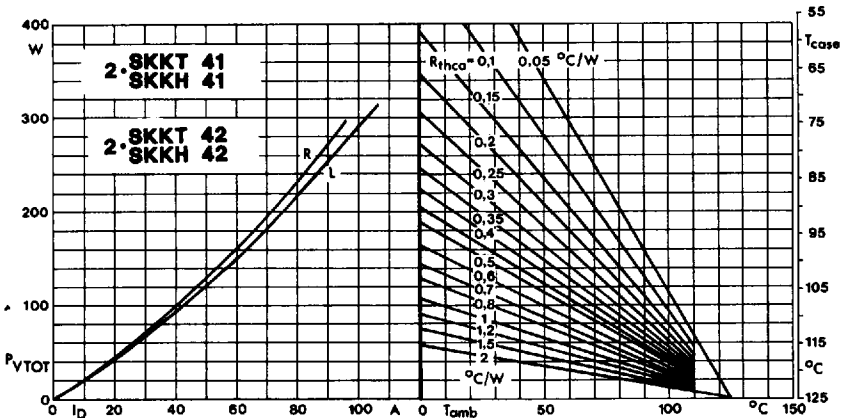


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

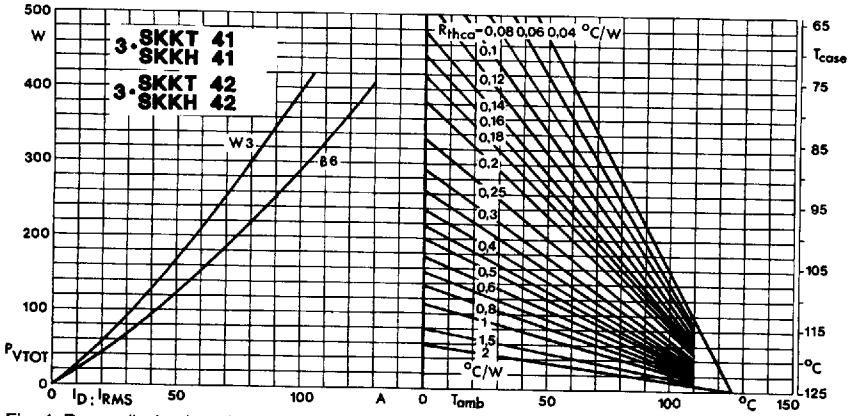


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

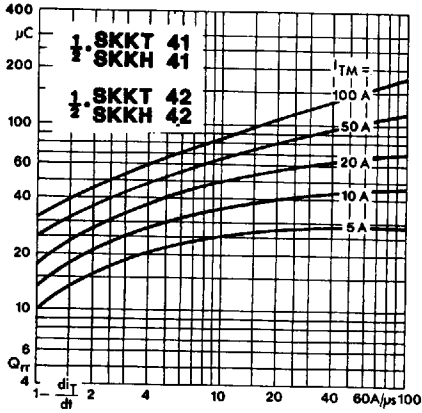


Fig. 5 Recovered charge vs. current decrease

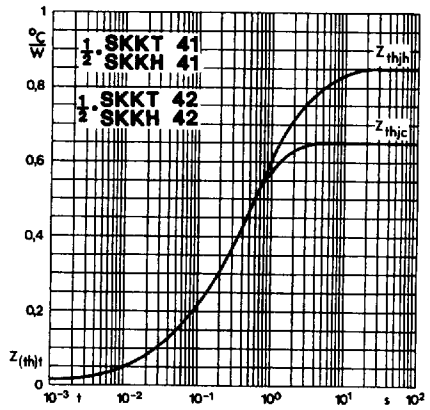


Fig. 6 Transient thermal impedance vs. time

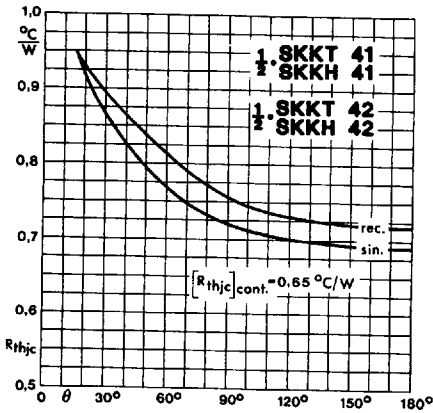


Fig. 7 Thermal resistance vs. conduction angle

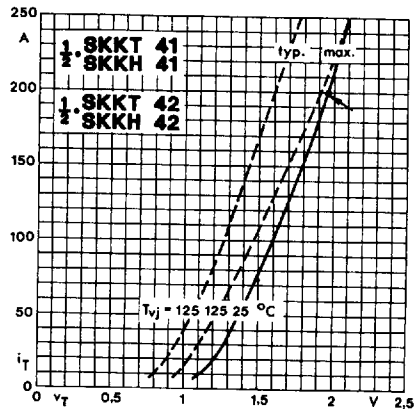


Fig. 8 On-state characteristics

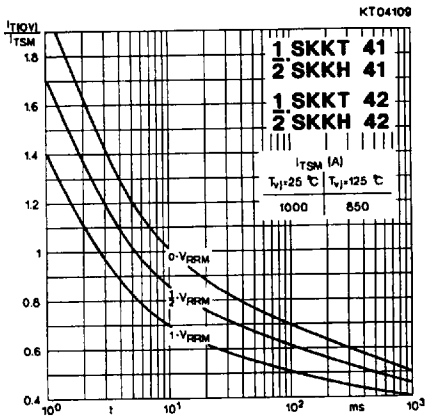


Fig. 9 Surge overload current vs. time

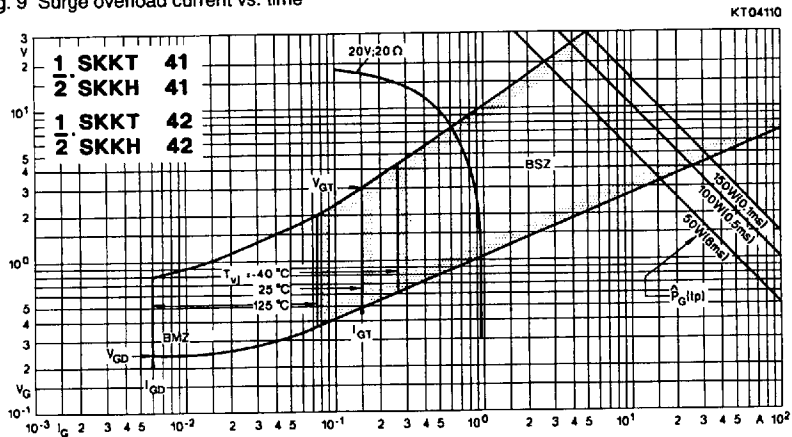


Fig. 10 Gate trigger characteristics