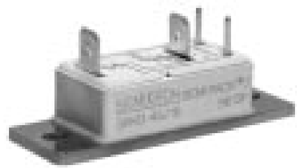
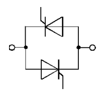
SEMIPACK® 0
Twin Thyristor Modules
for a.c. controllers

SKKQ 31
SKKQ 45

V_{RSM}	V_{RRM} V_{DRM}	$(dv/dt)_{cr}$	I_{RMS} (maximum values for continuous operation) (T_{case} = 85 °C)	
V	V	V/µs	24 A[1]; 30 A[2]	24 A[1]; 45 A[2]
700	600	500	–	**SKKQ 45/06**
900	800	500	**SKKQ 31/08**	**SKKQ 45/08**
1300	1200	500	**SKKQ 31/12**	**SKKQ 45/12**
1500	1400	500	**SKKQ 31/14**	**SKKQ 45/14**
1700	1600	500	**SKKQ 31/16**	**SKKQ 45/16**



Symbol	Conditions	SKKQ 31	SKKQ 45
I_{RMS} I_{TRMS}	W1C; sin. 180; T_{case} = 85 °C sin. 180; T_{case} = 85 °C	30 A[2] 21 A	45 A[2] 32 A
I_{TSM} i^2t	T_{vj} = 25 °C; 10 ms T_{vj} = 125 °C; 10 ms T_{vj} = 25 °C; 8,3 ... 10 ms T_{vj} = 125 °C; 8,3 ... 10 ms	320 A 280 A 510 A^2s 390 A^2s	470 A 400 A 1100 A^2s 800 A^2s
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 1 µs	
$(di/dt)_{cr}$ t_q I_H I_L	T_{vj} = 125 °C T_{vj} = 125 °C T_{vj} = 25 °C; typ./max. T_{vj} = 25 °C; R_G = 33 Ω; typ./max.	100 A/µs typ. 80 µs 100/200 mA 250/400 mA	
V_T $V_{T(TO)}$ r_T I_{DD}; I_{RD}	T_{vj} = 25 °C; I_T = 75 A T_{vj} = 125 °C T_{vj} = 125 °C T_{vj} = 125 °C; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}	max. 2,45 V 1,1 V 20 mΩ max. 10 mA	max. 1,8 V 0,9 V 12 mΩ max. 10 mA
V_{GT} I_{GT} V_{GD} I_{GD}	T_{vj} = 25 °C; d. c. T_{vj} = 25 °C; d. c. T_{vj} = 125 °C; d. c. T_{vj} = 125 °C; d. c.	3 V 150 mA 0,25 V 5 mA	
R_{thjc}	cont. } per thyristor/per module sin. 180 }	1,6/0,8 °C/W 1,7/0,9 °C/W	1,2/0,6 °C/W 1,3/0,6 °C/W
R_{thch} T_{vj} T_{stg}		0,2/0,1 °C/W – 40 ... +125 °C – 40 ... +125 °C	
V_{isol} M_1 a w	a. c. 50 Hz; r.m.s.; 1 s/1 min Case to heatsink; SI units/US units approx.	3600 V~ /3000 V~ 1,5 Nm/13 lb. in. ± 15 %[3] 5 · 9,81 m/s^2 50 g	
Case	→ page B 1 – 34	A 41	



SKKQ

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
- AC motor starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

[1] Using tin plated connectors with flexible leads of 6 mm^2 for the main terminals
[2] Flexible leads of 6 mm^2 soldered to the main terminals
[3] See the assembly instructions

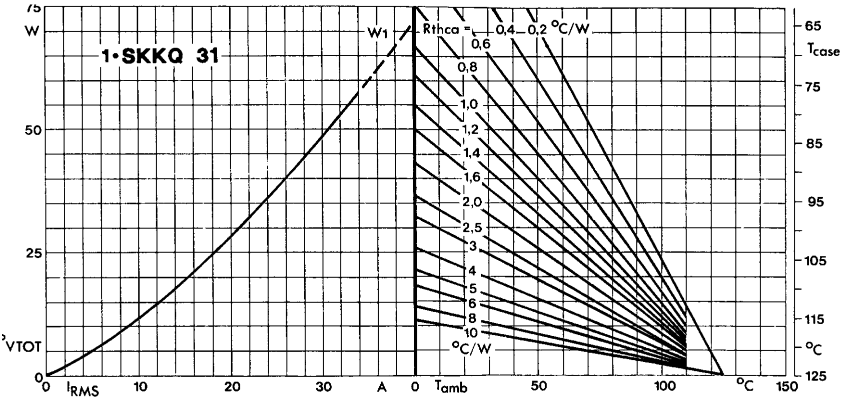


Fig. 2 a Power dissipation per module vs. rms current and case temperature

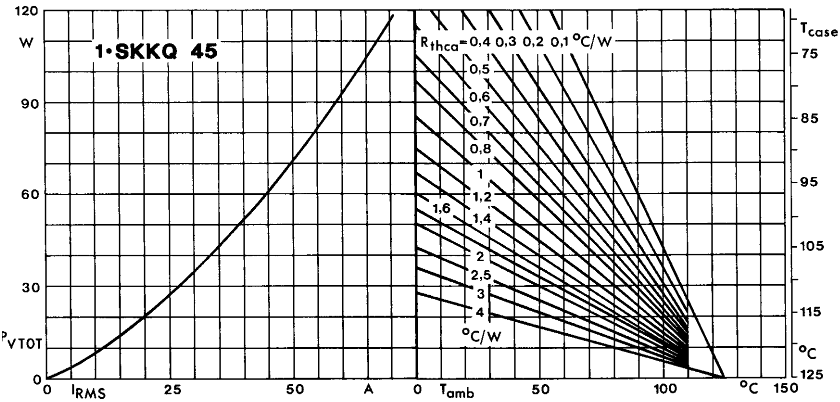


Fig. 2 b Power dissipation per module vs. rms current and case temperature

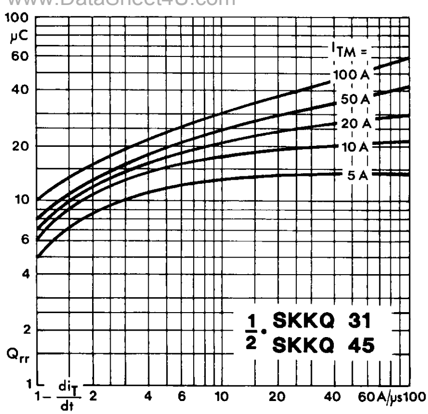


Fig. 5 Recovered charge vs. current decrease

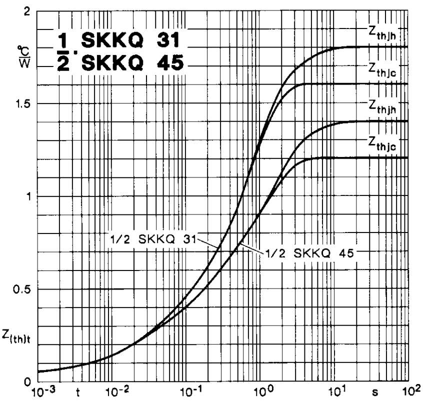


Fig. 6 Transient thermal impedance vs. time

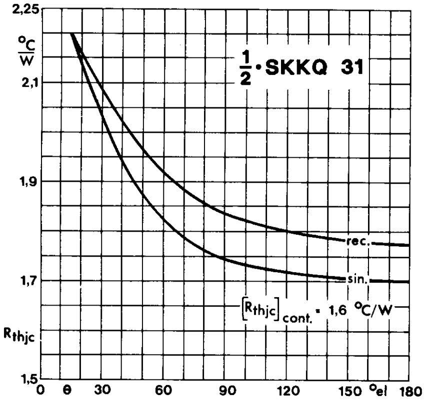


Fig. 7 a Thermal resistance vs. conduction angle

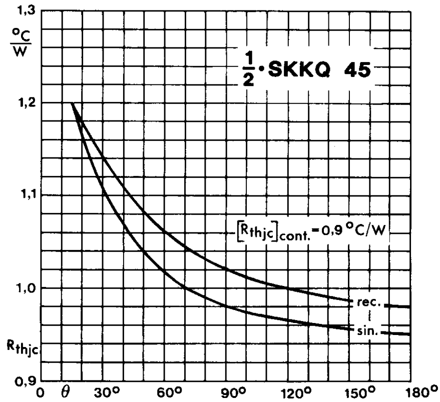


Fig. 7 b Thermal resistance vs. conduction angle

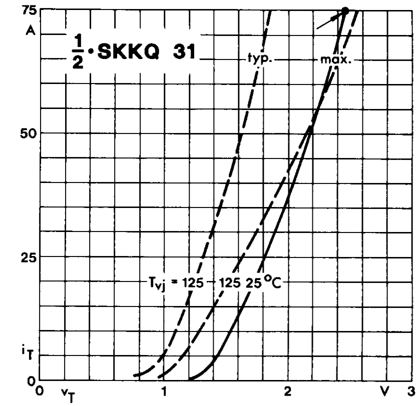


Fig. 8 a On-state characteristics

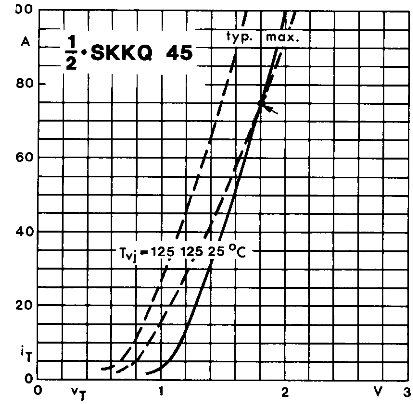


Fig. 8 b On-state characteristics

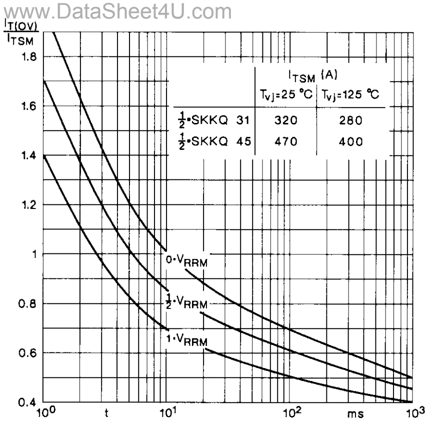


Fig. 9 Surge overload current vs. time

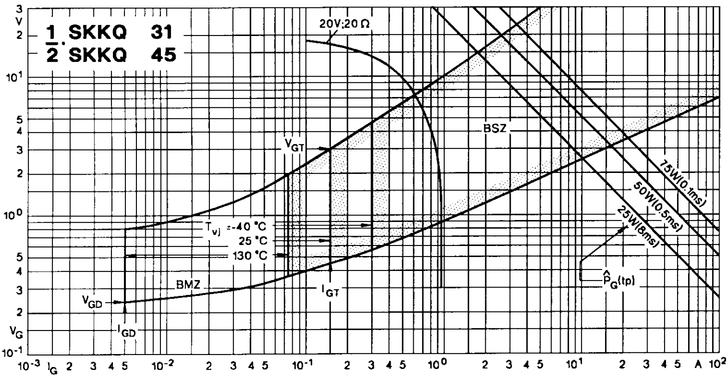


Fig. 10 Gate trigger characteristics

SKKQ 31
SKKQ 45

Case A 41

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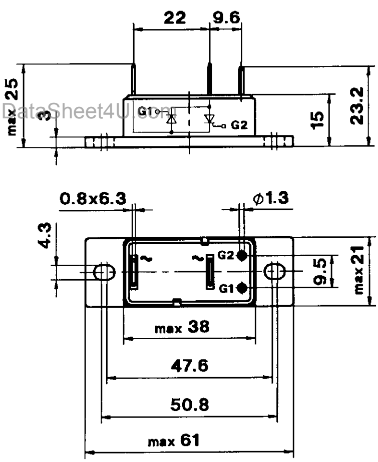

Dimensions in mm