



SEMIPACK® 0

Antiparallel Thyristor Module

SKKQ 31

Preliminary Data

Features

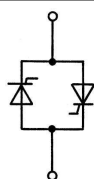
- Compact Design
- Heat transfer through aluminium oxide ceramic isolated metal baseplat
- UL recognized, file no. E 63 532

Typical Applications

- AC motor starters
- Light control (studios, theaters...)
- Temperature control

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{RMS} = 24 A^{(1)}; 30 A^{(2)}$ A (full conduction) ($T_s = 85^\circ C$)
700	600	SKKQ 31/06 E
900	800	SKKQ 31/08 E
1300	1200	SKKQ 31/12 E
1500	1400	SKKQ 31/14 E
1700	1600	SKKQ 31/16 E

Symbol	Conditions	Values	Units
I_{RMS}	W1C ; sin. 180° ; $T_{case}=85^\circ C^{(2)}$; sin. 180° ;	30	A
$I_{t RMS}$	W1C; sin. 180° ; $T_{case}=85^\circ C$	21	A
I_{TSM}	$T_{vj} = 25^\circ C$; 10 ms $T_{vj} = 125^\circ C$; 10 ms	320 280	A A
i^2t	$T_{vj} = 25^\circ C$; 8,3...10 ms $T_{vj} = 125^\circ C$; 8,3...10 ms	510 390	A ² s A ² s
V_T	$T_{vj} = 25^\circ C$, $I_T = 75 A$	max. 2,45	V
$V_{T(TO)}$	$T_{vj} = 125^\circ C$	max. 1,1	V
r_T	$T_{vj} = 125^\circ C$	max. 20	mΩ
I_{DD}, I_{RD}	$T_{vj} = 25^\circ C$, $V_{RD}=V_{RRM}$ $T_{vj} = 125^\circ C$, $V_{RD}=V_{RRM}$	max. 10	mA mA
t_{gd}	$T_{vj} = 25^\circ C$, $I_G = 1 A$; $di_G/dt = 1 A/\mu s$	1	μs
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	1	μs
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ C$	1000	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125^\circ C$; $f = 50...60 Hz$	100	A/μs
t_q	$T_{vj} = 125^\circ C$; typ.	80	μs
I_H	$T_{vj} = 25^\circ C$; typ. / max.	100 / 200	mA
I_L	$T_{vj} = 25^\circ C$; $R_G = 33 \Omega$; typ. / max.	250 / 400	mA
V_{GT}	$T_{vj} = 25^\circ C$; d.c.	min. 3	V
I_{GT}	$T_{vj} = 25^\circ C$; d.c.	min. 150	mA
V_{GD}	$T_{vj} = 125^\circ C$; d.c.	max. 0,25	V
I_{GD}	$T_{vj} = 125^\circ C$; d.c.	max. 5	mA
$R_{th(j-s)}$	cont. per thyristor sin 180° per thyristor	1,6 1,7	K/W K/W
$R_{th(j-s)}$	cont. per W1C sin 180° per W1C	0,8 0,9	K/W K/W
T_{vj}		-40 ... +125	°C
T_{stg}		-40 ... +125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 / 3000	V~
M_s	Mounting torque to heatsink	1,5	Nm
M_t			Nm
a			m/s ²
m		50	g
Case	SEMIPACK® 0	A 41	



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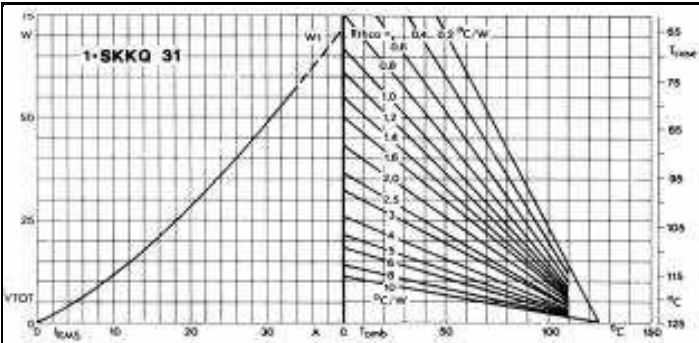


Fig. 1 Power dissipation per module vs. r.m.s. current and case temperature

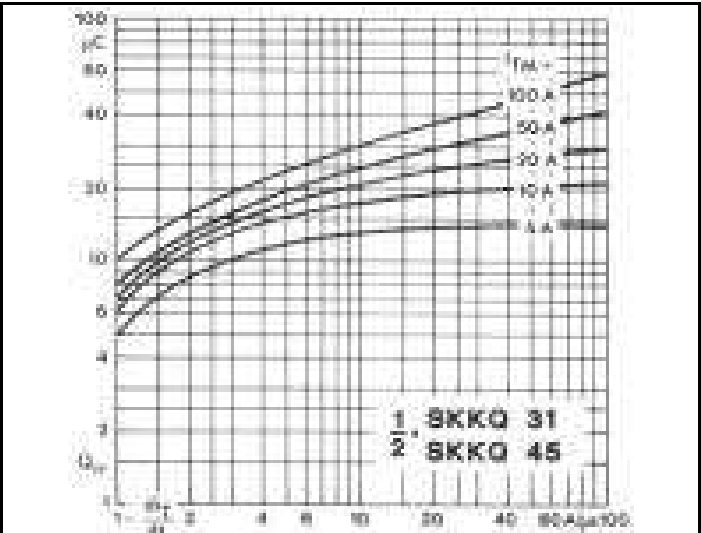


Fig. 2 Recovered charge vs. current decrease

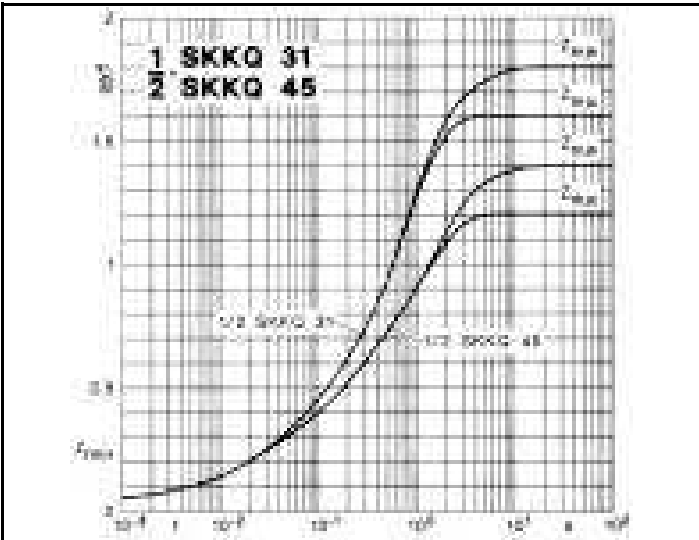


Fig. 3 Thermal transient impedance vs. time

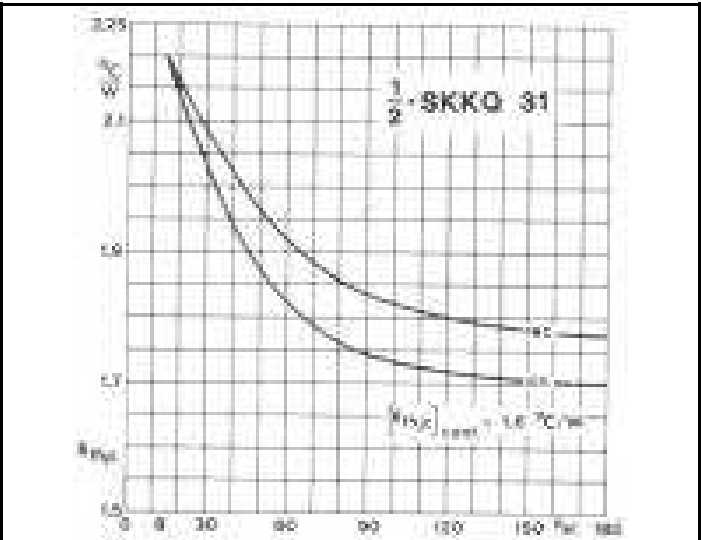


Fig. 4 Thermal resistance vs conduction angle

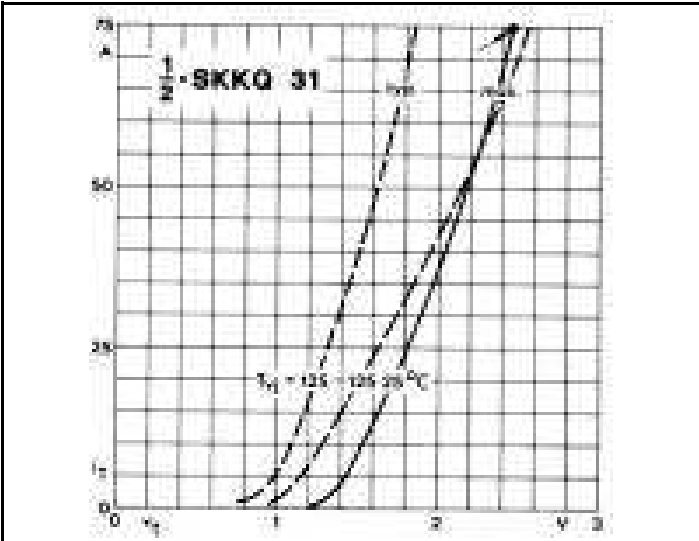


Fig. 5 On state characteristics

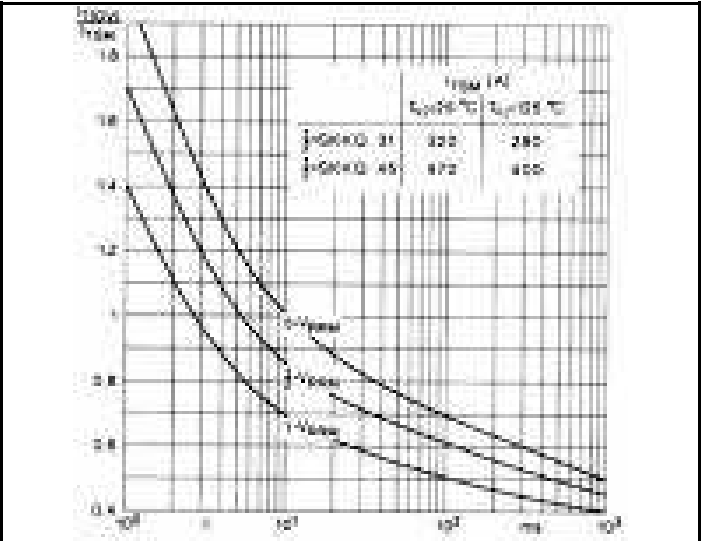


Fig. 6 Surge overload current vs. time

