SK 45 KQ



SEMITOP® 1

Antiparallel Thyristor Module

SK 45 KQ

Preliminary Data

Features

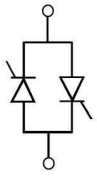
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passived thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

- Soft starters
- Light control (studios, theaters...)
- Temperature control

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{RMS} = 47 A A (full conduction) (T_s = 85 °C)
900	800	SK 45 KQ 08
1300	1200	SK 45 KQ 12
1700	1600	SK 45 KQ 16

Symbol	Conditions	Values	Units
I_{RMS}	W1C ; sin. 180° ; T_s = 100°C	33	A
	W1C ; sin. 180° ; T_s = 85°C	47	A
I_{TSM}	T_{vj} = 25 °C ; 10 ms	450	A
	T_{vj} = 125 °C ; 10 ms	380	A
i²t	T_{vj} = 25 °C ; 8,3...10 ms	1000	A²s
	T_{vj} = 125 °C ; 8,3...10 ms	720	A²s
V_T	T_{vj} = 25 °C, I_T = 75 A	max. 1,9	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 1	V
r_T	T_{vj} = 125 °C	max. 10	mΩ
I_{DD};I_{RD}	T_{vj} = 25 °C, V_{RD}=V_{RRM}	max. 0,5	mA
	T_{vj} = 125 °C, V_{RD}=V_{RRM}	max. 10	mA
t_{gd}	T_{vj} = 25 °C, I_G = 1 A; di_G/dt= 1 A/µs	1	µs
t_{gr}	V_D = 0,67 *V_{DRM}	2	µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	1000	V/µs
$(di/dt)_{cr}$	T_{vj} = 125 °C; f= 50...60 Hz	50	A/µs
t_q	T_{vj} = 125 °C; typ.	120	µs
I_H	T_{vj} = 25 °C; typ. / max.	80 / 150	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω ; typ. / max.	150 / 300	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 100	mA
V_{GD}	T_{vj} = 125 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 125 °C; d.c.	max. 3	mA
$R_{th(j-s)}$	cont. per thyristor	1,2	K/W
	sin 180° per thyristor	1,24	K/W
$R_{th(j-s)}$	cont. per W1C	0,6	K/W
	sin 180° per W1C	0,62	K/W
T_{vj}		-40 ... +125	°C
T_{stg}		-40 ... +125	°C
T_{solder}	terminals, 10s	260	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3000 / 2500	V~
M_s	Mounting torque to heatsink	1,5	Nm
M_t			Nm
a			m/s²
m		13	g
Case	SEMITOP® 1	T 1	



KQ

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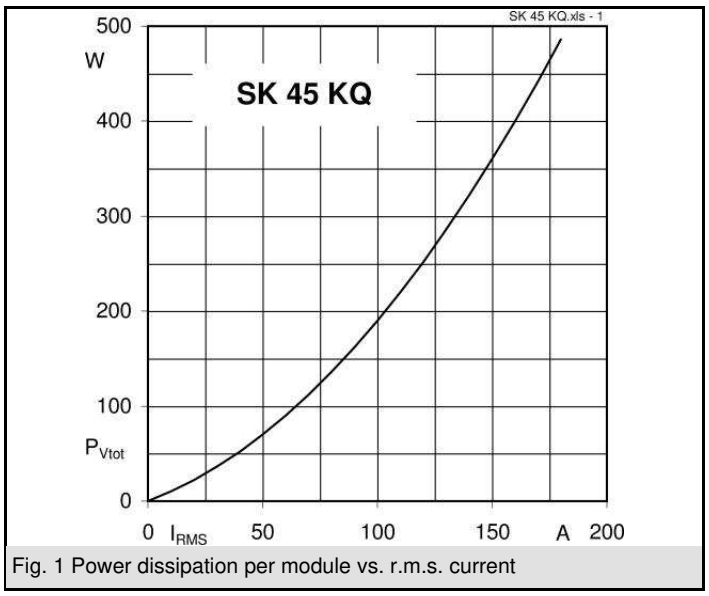


Fig. 1 Power dissipation per module vs. r.m.s. current

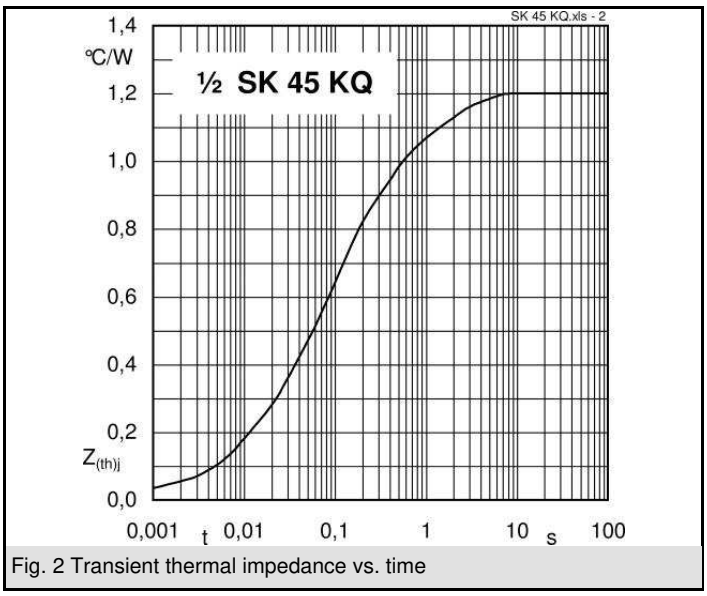


Fig. 2 Transient thermal impedance vs. time

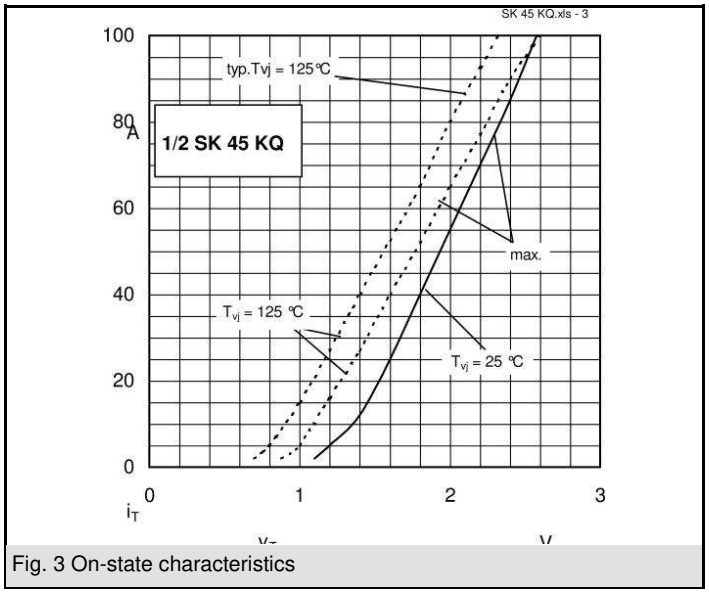


Fig. 3 On-state characteristics

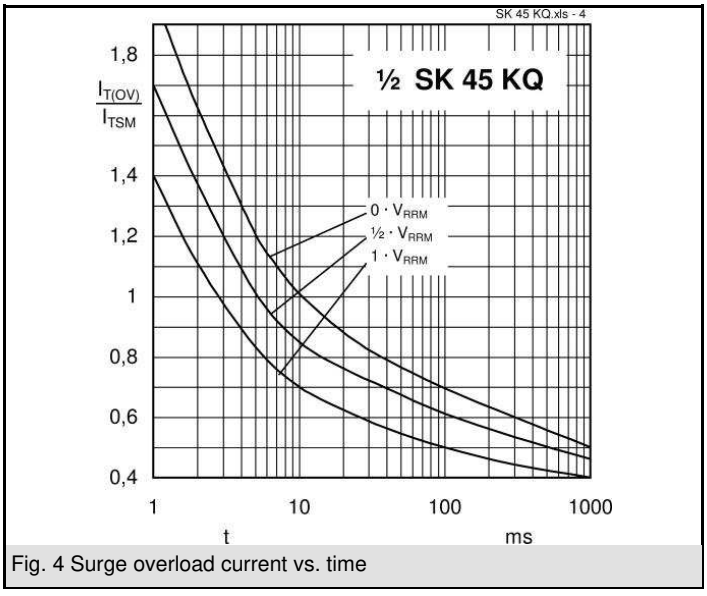


Fig. 4 Surge overload current vs. time

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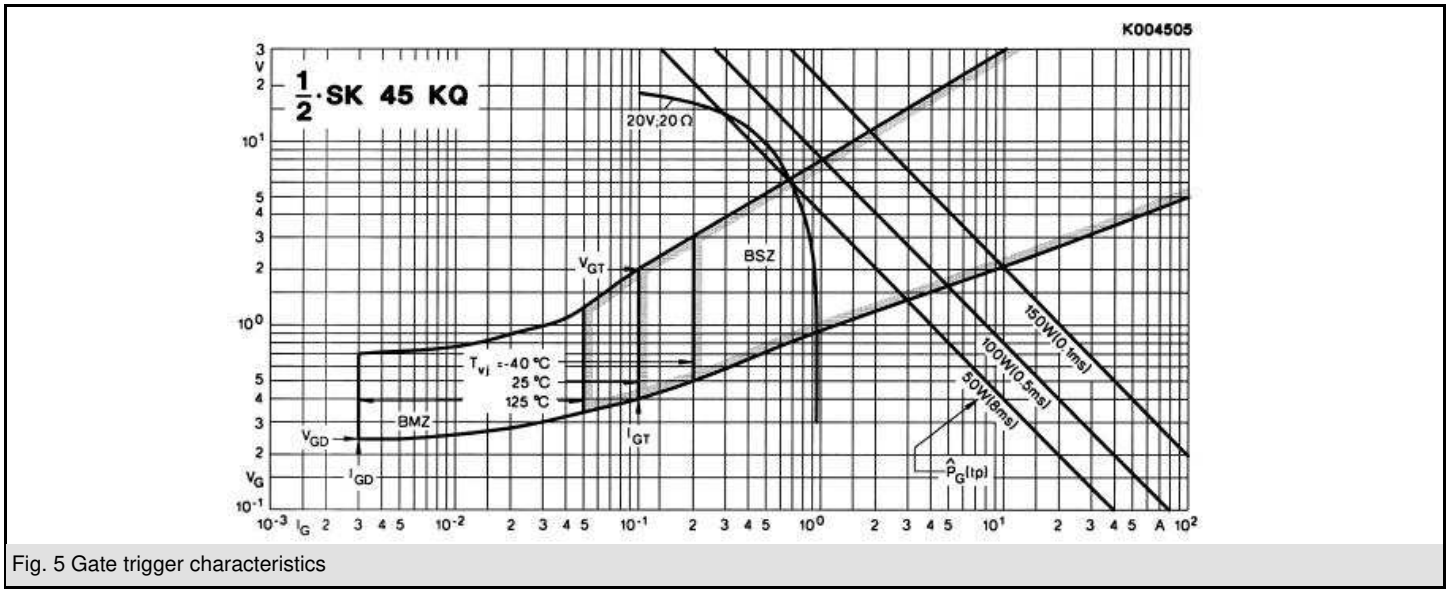
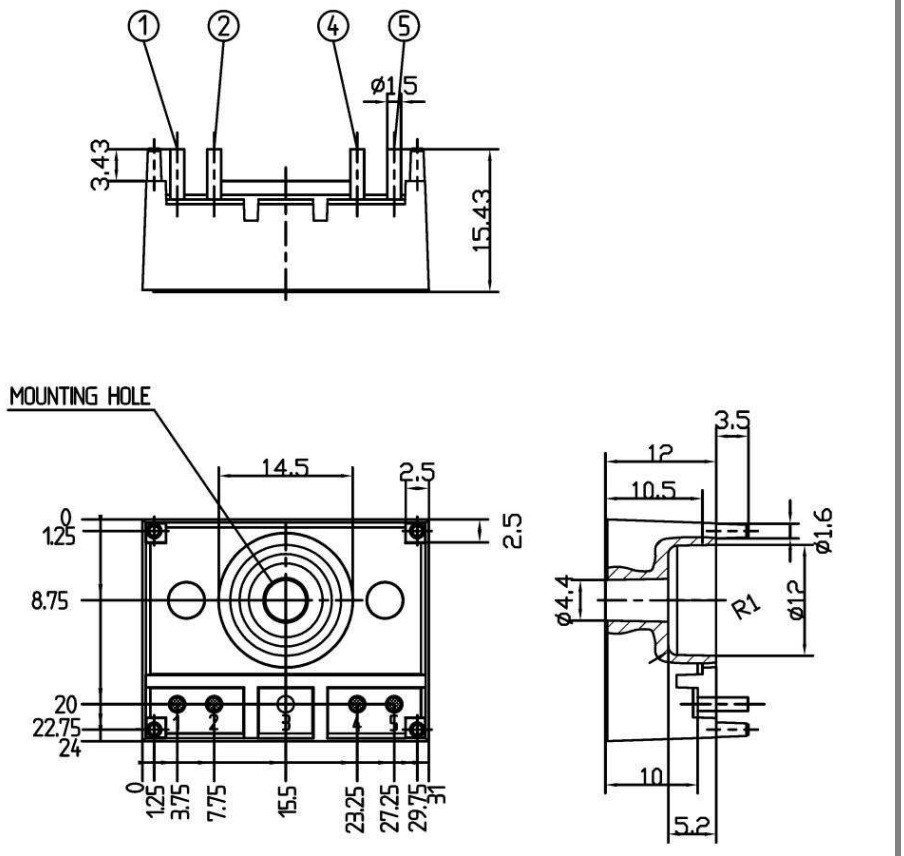
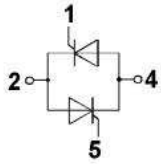


Fig. 5 Gate trigger characteristics

Dimensions in mm



Case T 1 (Suggested hole diameter in the PCB for solder pins and mounting pins : 2mm)



Case T1 KQ

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