



SEMITOP® 1

Antiparallel Thyristor Module

SK 25 KQ

Preliminary Data

Features

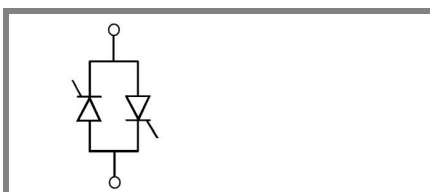
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

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

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{RMS} = 29 \text{ A}$ (full conduction) ($T_s = 85^\circ \text{C}$)
900	800	SK 25 KQ 08
1300	1200	SK 25 KQ 12
1700	1600	SK 25 KQ 16

Symbol	Conditions	Values	Units
I_{RMS}	$W1C$; sin. 180° ; $T_s = 100^\circ \text{C}$ $W1C$; sin. 180° ; $T_s = 85^\circ \text{C}$	20 29	A A
I_{TSM}	$T_{vj} = 25^\circ \text{C}$; 10 ms $T_{vj} = 125^\circ \text{C}$; 10 ms	320 280	A A
i^2t	$T_{vj} = 25^\circ \text{C}$; 8,3...10 ms $T_{vj} = 125^\circ \text{C}$; 8,3...10 ms	510 390	A ² s A ² s
V_T $V_{T(TO)}$ r_T	$T_{vj} = 25^\circ \text{C}$, $I_T = 75 \text{ A}$ $T_{vj} = 125^\circ \text{C}$ $T_{vj} = 125^\circ \text{C}$	max. 2,45 max. 1,1 max. 20	V V mΩ
I_{DD}, I_{RD}	$T_{vj} = 125^\circ \text{C}$, $V_{RD} = V_{RRM}$	max. 8	mA
t_{gd} t_{gr}	$T_{vj} = 25^\circ \text{C}$, $I_G = 1 \text{ A}$; $di_G/dt = 1 \text{ A}/\mu\text{s}$ $V_D = 0,67 \cdot V_{DRM}$	1 1	μs μs
$(dv/dt)_{cr}$ $(di/dt)_{cr}$	$T_{vj} = 125^\circ \text{C}$ $T_{vj} = 125^\circ \text{C}$; $f = 50...60 \text{ Hz}$	1000 50	V/μs A/μs
t_q I_H I_L	$T_{vj} = 125^\circ \text{C}$; typ. $T_{vj} = 25^\circ \text{C}$; typ. / max. $T_{vj} = 25^\circ \text{C}$; $R_G = 33 \Omega$; typ. / max.	80 80 / 150 150 / 300	μs mA mA
V_{GT} I_{GT} V_{GD} I_{GD}	$T_{vj} = 25^\circ \text{C}$; d.c. $T_{vj} = 25^\circ \text{C}$; d.c. $T_{vj} = 125^\circ \text{C}$; d.c. $T_{vj} = 125^\circ \text{C}$; d.c.	min. 2 min. 100 max. 0,25 max. 3	V mA V mA
$R_{th(j-s)}$ $R_{th(j-s)}$ $R_{th(j-s)}$	cont. per thyristor sin 180° per thyristor cont. per W1C sin 180° per W1C	1,7 1,78 0,85 0,89	K/W K/W K/W K/W
T_{vj} T_{stg} T_{solder}	 terminals, 10s	-40 ... +125 -40 ... +125 260	°C °C °C
V_{isol} M_s M_t a m	a. c. 50 Hz; r.m.s.; 1 s / 1 min. Mounting torque to heatsink 	3000 / 2500 1,5 13	V~ Nm Nm m/s ² g
Case	SEMITOP® 1	T 1	



KQ

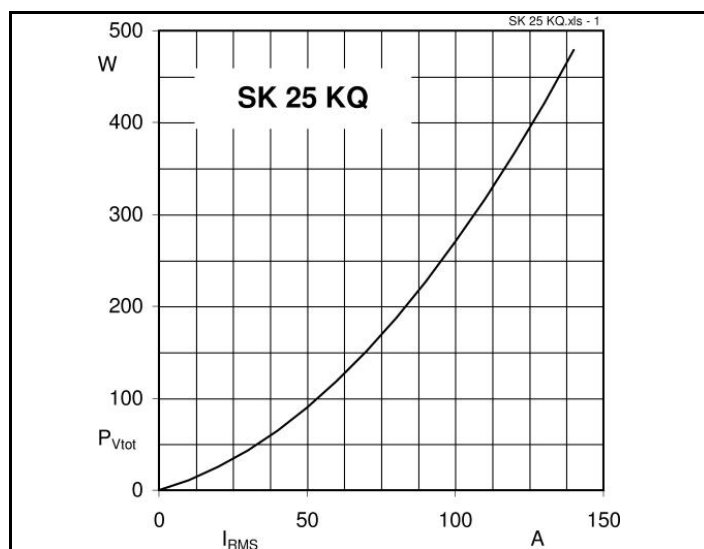


Fig. 1 Power dissipation per module vs. r.m.s. current

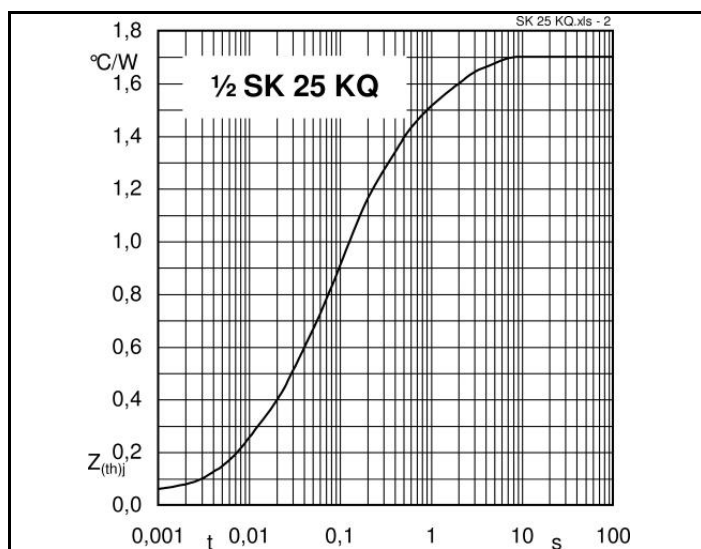


Fig. 2 Transient thermal impedance vs. time

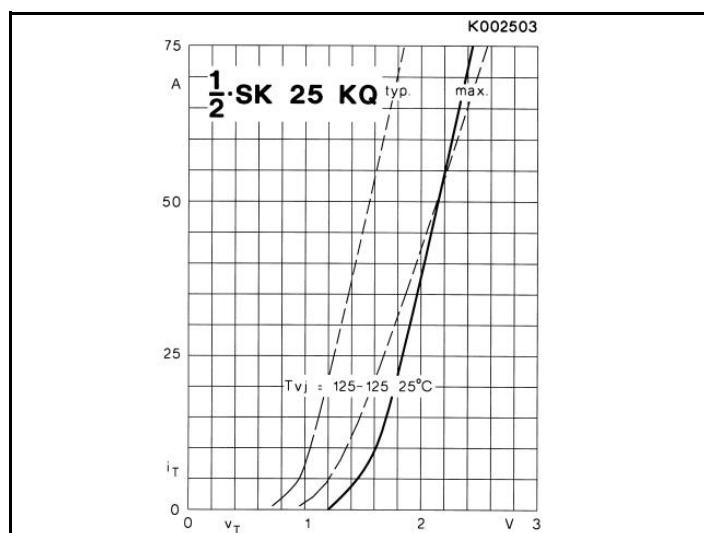


Fig. 3 On-state characteristics

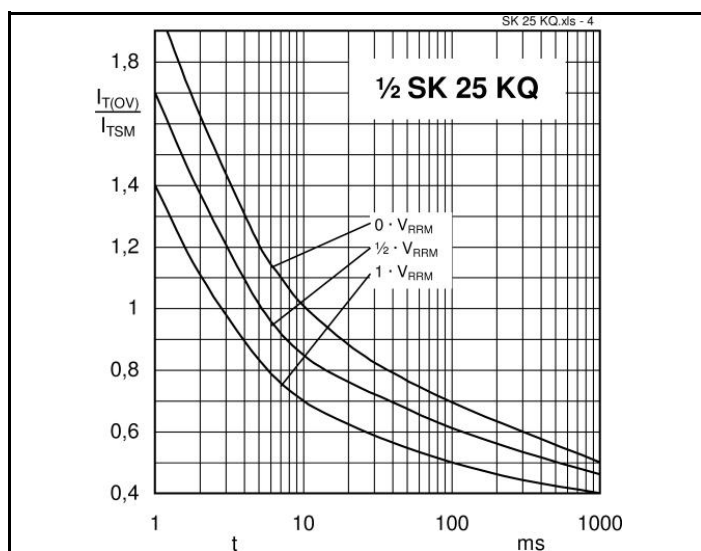


Fig. 4 Surge overload current vs. time

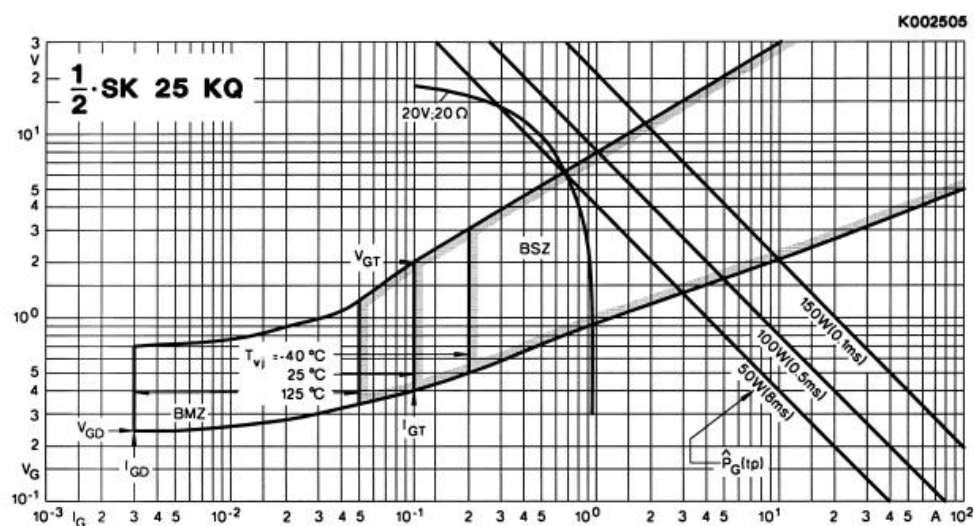
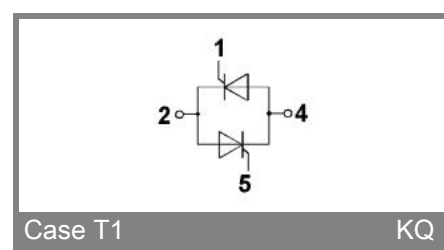
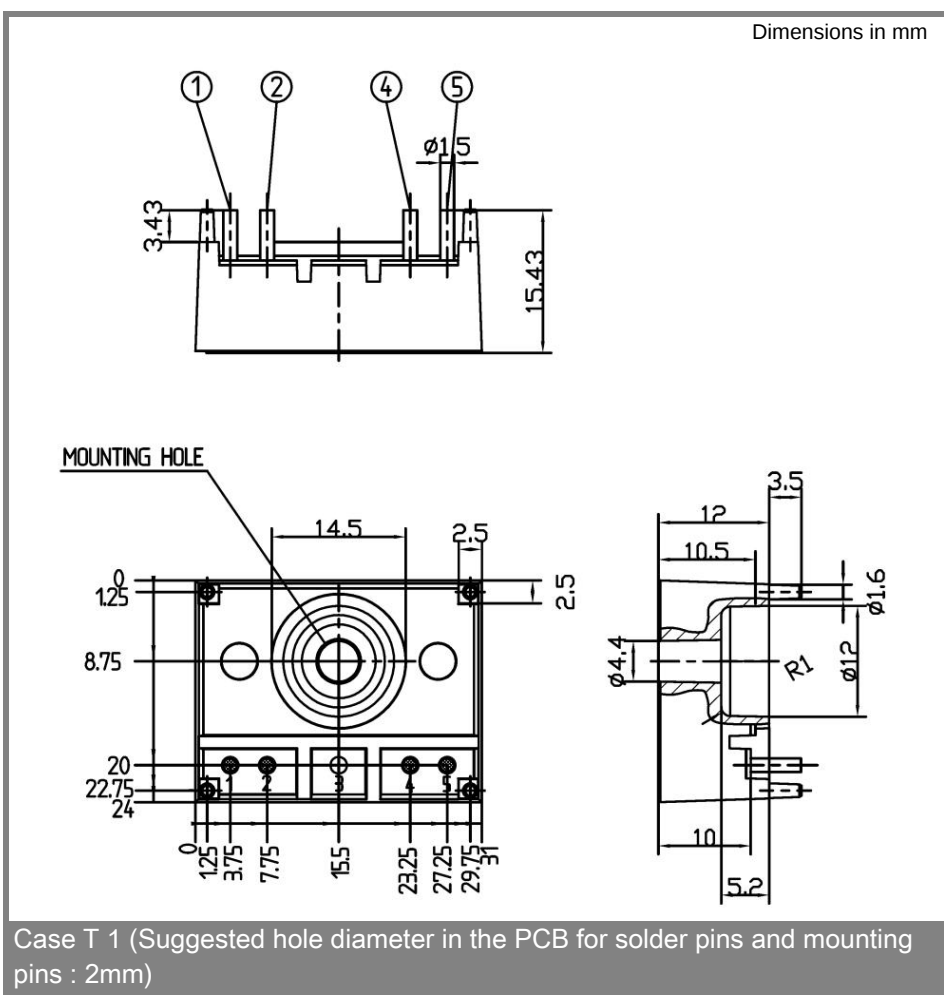


Fig. 5 Gate trigger characteristics



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