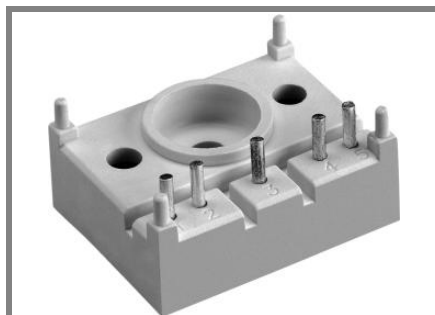


SK 70 KQ



SEMITOP® 1

Antiparallel Thyristor Module

SK 70 KQ

Preliminary Data

Features

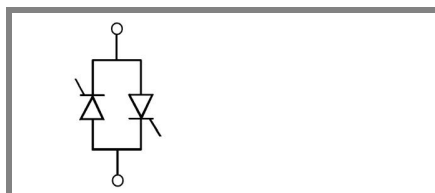
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

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

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{RMS} = 72 \text{ A A (full conduction)}$ ($T_s = 85^\circ \text{C}$)
900	800	SK 70 KQ 08
1300	1200	SK 70 KQ 12
1700	1600	SK 70 KQ 16

Symbol	Conditions	Values	Units
I_{RMS}	$W1C; \sin. 180^\circ; T_s = 100^\circ \text{C}$ $W1C; \sin. 180^\circ; T_s = 85^\circ \text{C}$	50 72	A A
I_{TSM}	$T_{vj} = 25^\circ \text{C}; 10 \text{ ms}$ $T_{vj} = 125^\circ \text{C}; 10 \text{ ms}$	1000 900	A A
i^2t	$T_{vj} = 25^\circ \text{C}; 8,3...10 \text{ ms}$ $T_{vj} = 125^\circ \text{C}; 8,3...10 \text{ ms}$	5000 4000	A^2s A^2s
V_T $V_{T(TO)}$ r_T	$T_{vj} = 25^\circ \text{C}, I_T = 120 \text{ A}$ $T_{vj} = 125^\circ \text{C}$ $T_{vj} = 125^\circ \text{C}$	max. 1,8 max. 1 max. 6	V V $\text{m}\Omega$
I_{DD}, I_{RD}	$T_{vj} = 25^\circ \text{C}, V_{RD} = V_{RRM}$ $T_{vj} = 125^\circ \text{C}, V_{RD} = V_{RRM}$	max. 0,5 max. 15	mA 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 2	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	$\text{V}/\mu\text{s}$ $\text{A}/\mu\text{s}$
t_q I_H	$T_{vj} = 125^\circ \text{C}; \text{typ.}$ $T_{vj} = 25^\circ \text{C}; \text{typ. / max.}$	80 100 / 200	μs mA
I_L	$T_{vj} = 25^\circ \text{C}; R_G = 33 \Omega; \text{typ. / max.}$	200 / 400	mA
V_{GT} I_{GT} V_{GD} I_{GD}	$T_{vj} = 25^\circ \text{C}; \text{d.c.}$ $T_{vj} = 25^\circ \text{C}; \text{d.c.}$ $T_{vj} = 125^\circ \text{C}; \text{d.c.}$ $T_{vj} = 125^\circ \text{C}; \text{d.c.}$	min. 2 min. 100 max. 0,25 max. 5	V mA V mA
$R_{th(j-s)}$ $R_{th(j-s)}$	cont. per thyristor $\sin 180^\circ$ per thyristor cont. per W1C $\sin 180^\circ$ per W1C	0,8 0,84 0,4 0,42	K/W K/W K/W K/W
T_{vj} T_{stg} T_{solder}	$T_{vj} = 25^\circ \text{C}; \text{typ. / max.}$ terminals, 10s	-40 ... +125 -40 ... +125 260	$^\circ \text{C}$ $^\circ \text{C}$ $^\circ \text{C}$
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

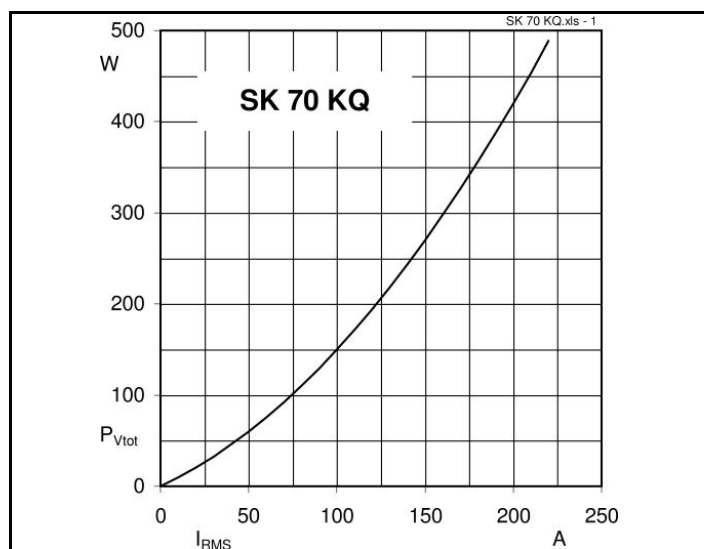


Fig. 1 Power dissipation per module vs. r.m.s. current

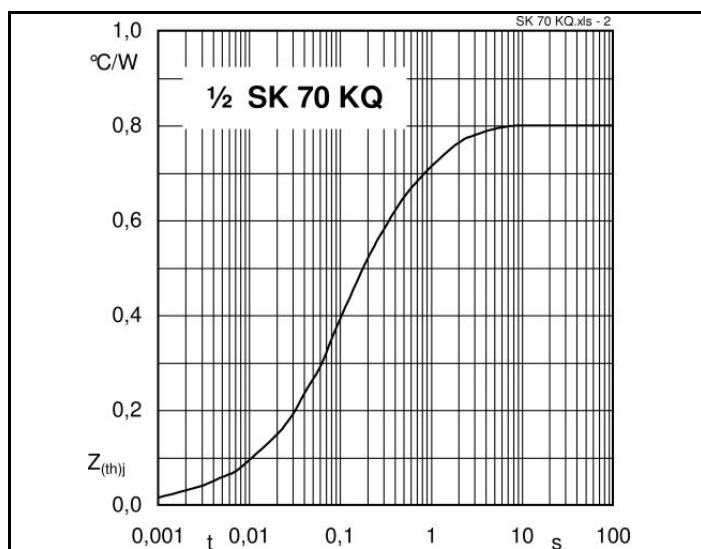


Fig. 2 Transient thermal impedance vs. time

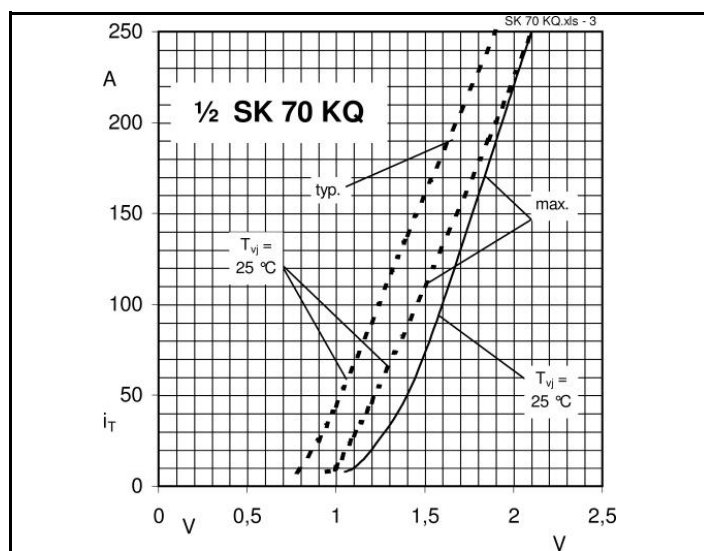


Fig. 3 On-state characteristics

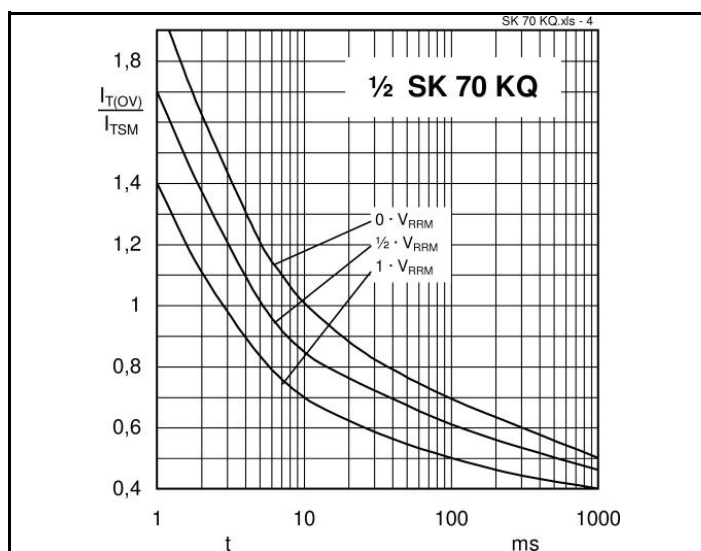


Fig. 4 Surge overload current vs. time

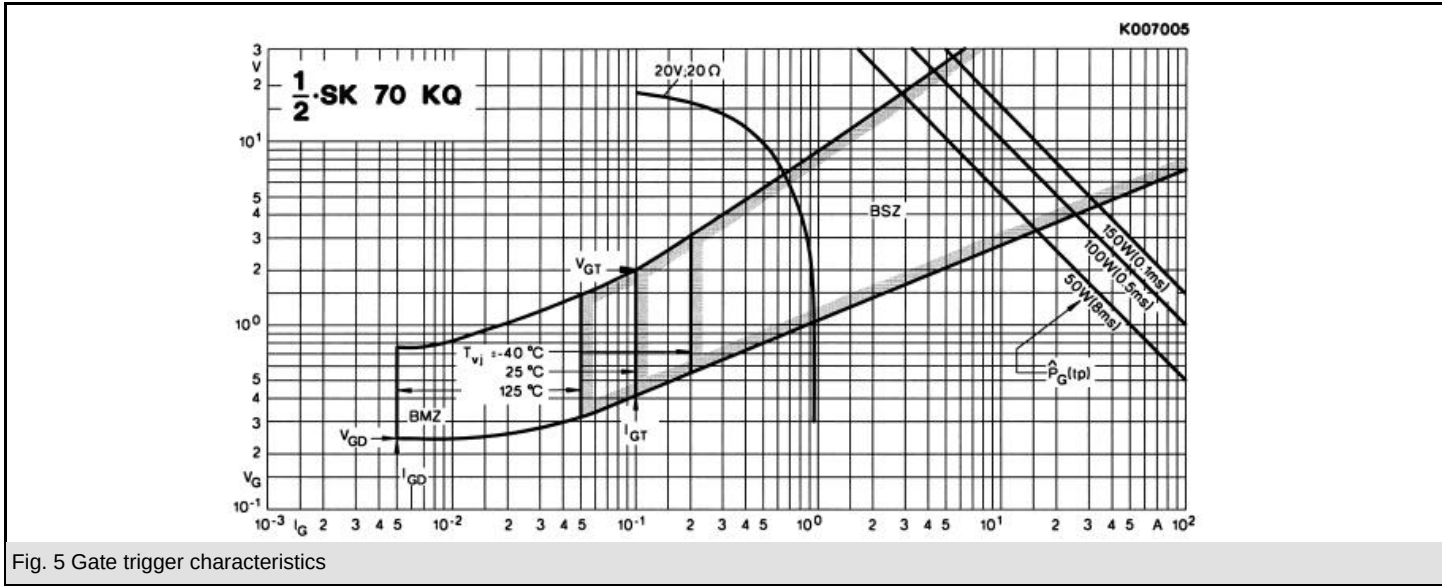
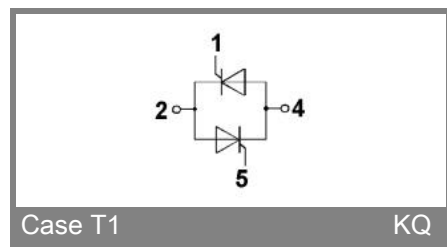
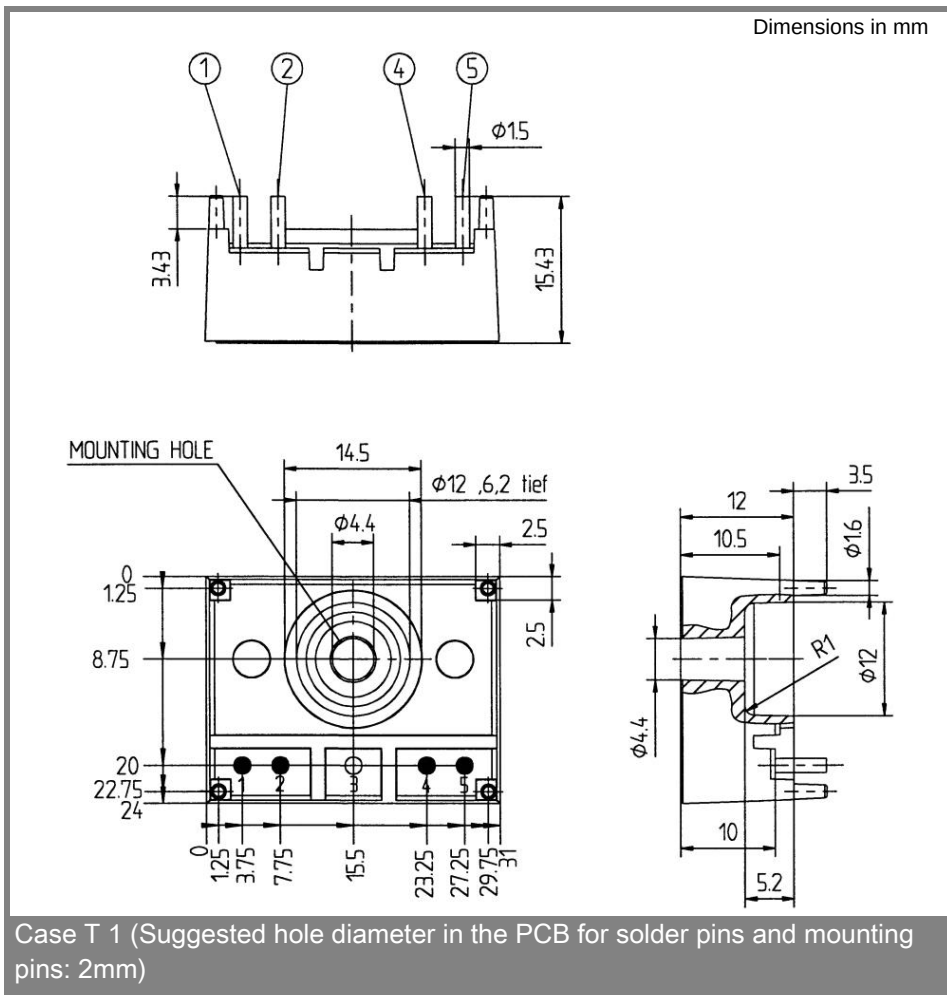


Fig. 5 Gate trigger characteristics



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