

SEMITOP® 2

Antiparallel Thyristor Module

SK 100 KQ

Preliminary Data

Features

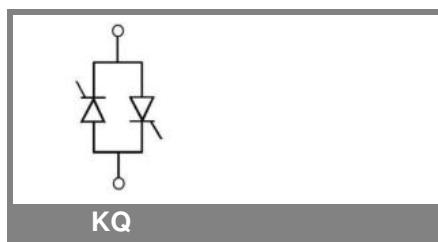
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

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

V_{RSM}	V_{RRM}, V_{DRM}	$I_{RMS} = 101 \text{ A (full conduction)}$ $(T_s = 85^\circ \text{C})$
V	V	$(T_s = 85^\circ \text{C})$
900	800	SK 100 KQ 08
1300	1200	SK 100 KQ 12
1700	1600	SK 100 KQ 16

Symbol	Conditions	Values	Units
I_{RMS}	$W1C ; \sin. 180^\circ ; T_s = 100^\circ \text{C}$ $W1C ; \sin. 180^\circ ; T_s = 85^\circ \text{C}$	71 101	A A
I_{TSM}	$T_{vj} = 25^\circ \text{C} ; 10 \text{ ms}$ $T_{vj} = 125^\circ \text{C} ; 10 \text{ ms}$	1500 1350	A A
i^2t	$T_{vj} = 25^\circ \text{C} ; 8,3...10 \text{ ms}$ $T_{vj} = 125^\circ \text{C} ; 8,3...10 \text{ ms}$	11250 9100	A ² s A ² s
V_T	$T_{vj} = 25^\circ \text{C}, I_T = 200 \text{ A}$	max. 1,8	V
$V_{T(TO)}$	$T_{vj} = 125^\circ \text{C}$	max. 0,9	V
r_T	$T_{vj} = 125^\circ \text{C}$	max. 4,5	mΩ
$I_{DD}; I_{RD}$	$T_{vj} = 25^\circ \text{C}, V_{RD}=V_{RRM}$ $T_{vj} = 125^\circ \text{C}, V_{RD}=V_{RRM}$	max. 1 max. 20	mA mA
t_{gd}	$T_{vj} = 25^\circ \text{C}, I_G = 1 \text{ A}; di_G/dt = 1 \text{ A}/\mu\text{s}$	1	μs
t_{gr}	$V_D = 0,67 * V_{DRM}$	2	μs
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ \text{C}$	1000	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125^\circ \text{C}; f= 50...60 \text{ Hz}$	100	A/μs
t_q	$T_{vj} = 125^\circ \text{C}; \text{typ.}$	80	μs
I_H	$T_{vj} = 25^\circ \text{C}; \text{typ. / max.}$	100 / 200	mA
I_L	$T_{vj} = 25^\circ \text{C}; R_G = 33 \Omega; \text{typ. / max.}$	200 / 500	mA
V_{GT}	$T_{vj} = 25^\circ \text{C}; \text{d.c.}$	min. 2	V
I_{GT}	$T_{vj} = 25^\circ \text{C}; \text{d.c.}$	min. 100	mA
V_{GD}	$T_{vj} = 125^\circ \text{C}; \text{d.c.}$	max. 0,25	V
I_{GD}	$T_{vj} = 125^\circ \text{C}; \text{d.c.}$	max. 5	mA
$R_{th(j-s)}$	cont. per thyristor sin 180° per thyristor	0,6 0,63	K/W
$R_{th(j-s)}$	cont. per W1C sin 180° per W1C	0,3 0,315	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	2,0	Nm
M_t			Nm
a		19	m/s ²
m			g
Case	SEMITOP® 2	T 2	



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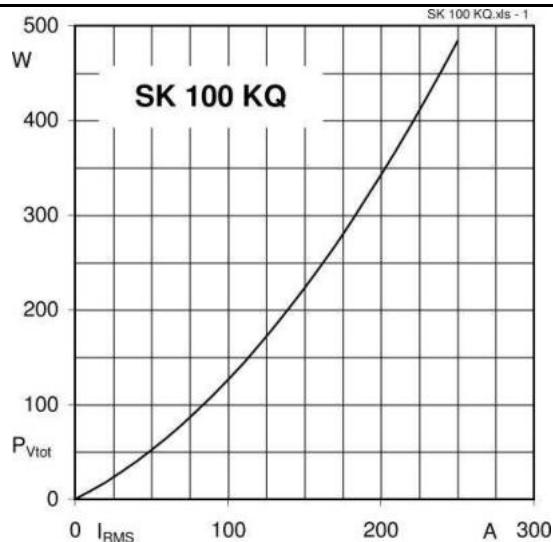


Fig. 1 Power dissipation per module vs. r.m.s. current

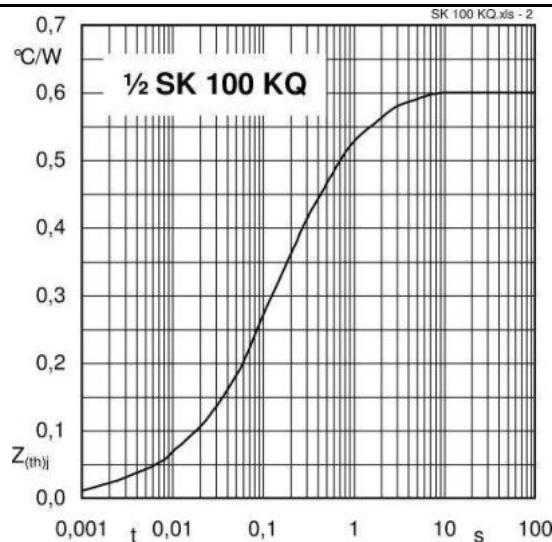


Fig. 2 Transient thermal impedance vs. time

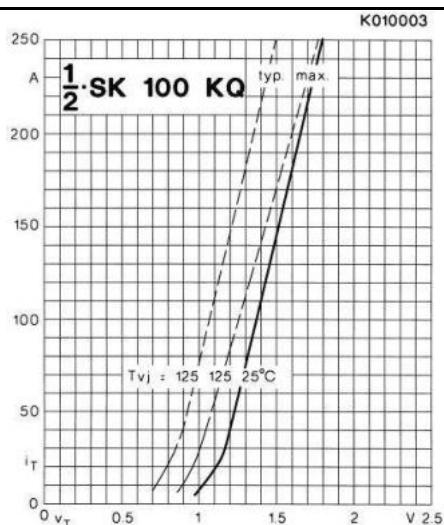


Fig. 3 On-state characteristics

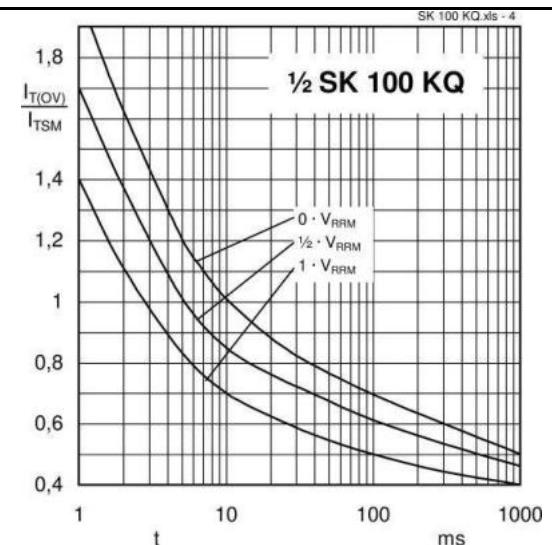


Fig. 4 Surge overload current vs. time

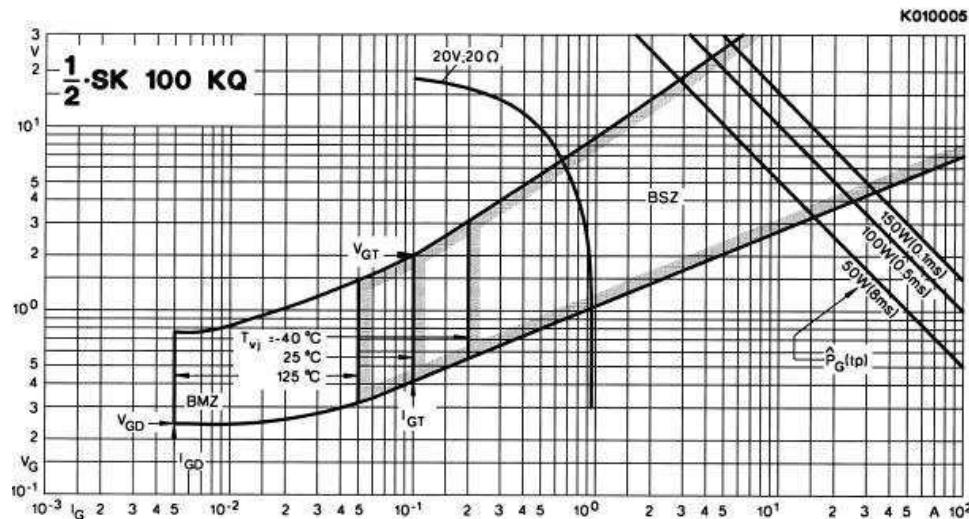
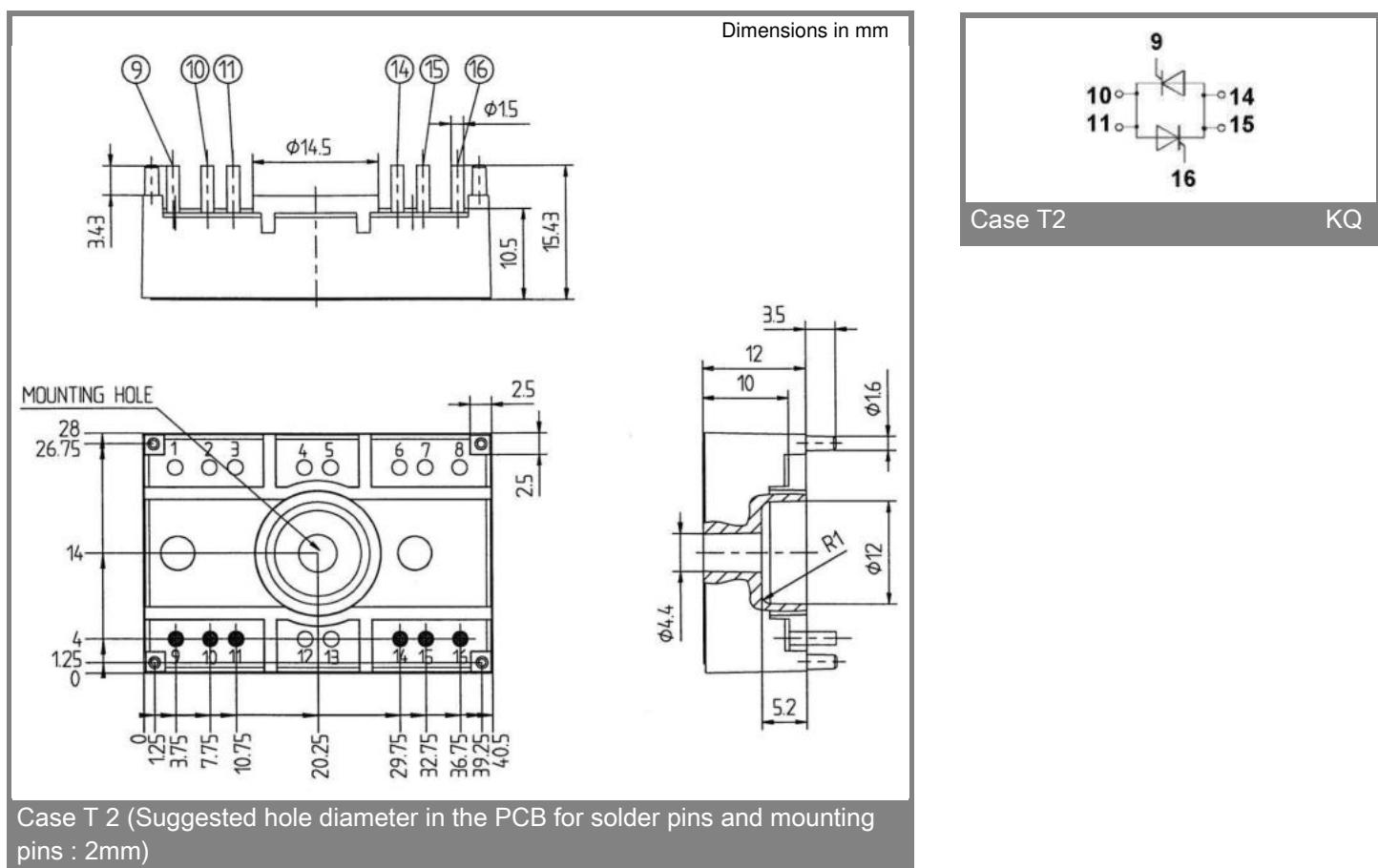


Fig. 5 Gate trigger characteristics



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