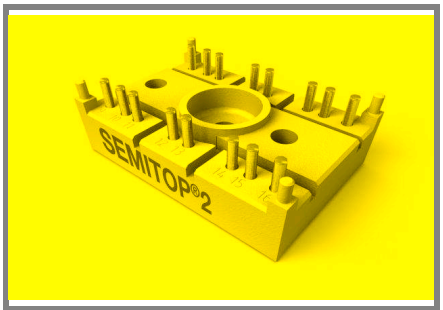
SK 120 KQ



SEMITOP® 2

Antiparallel Thyristor Module

SK 120 KQ

Preliminary Data

Features

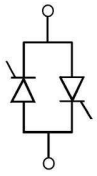
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passived thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

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

V_{RSM} V	V_{RRM}, V_{DRM} V	I_{RMS} = 134 A (full conduction) (T_s = 85 °C)
900	800	SK 120 KQ 08
1300	1200	SK 120 KQ 12
1700	1600	SK 120 KQ 16

Symbol	Conditions	Values	Units
I_{RMS}	W1C ; sin. 180° ; T_s = 100°C	94	A
	W1C ; sin. 180° ; T_s = 85°C	134	A
I_{TSM}	T_{vj} = 25 °C ; 10 ms	2000	A
	T_{vj} = 125 °C ; 10 ms	1800	A
i²t	T_{vj} = 25 °C ; 8,3...10 ms	20000	A²s
	T_{vj} = 125 °C ; 8,3...10 ms	16200	A²s
V_T	T_{vj} = 25 °C, I_T = 300 A	max. 1,85	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 0,9	V
r_T	T_{vj} = 125 °C	max. 3,5	mΩ
I_{DD};I_{RD}	T_{vj} = 25 °C, V_{RD}=V_{RRM}	max. 1	mA
	T_{vj} = 125 °C, V_{RD}=V_{RRM}	max. 20	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	100	A/µs
t_q	T_{vj} = 125 °C; typ.	80	µs
I_H	T_{vj} = 25 °C; typ. / max.	100 / 200	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ. / max.	200 / 500	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 2	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. 5	mA
$R_{th(j-s)}$	cont. per thyristor	0,45	K/W
	sin 180° per thyristor	0,47	K/W
$R_{th(j-s)}$	cont. per W1C	0,225	K/W
	sin 180° per W1C	0,235	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			m/s²
m		19	g
Case	SEMITOP® 2	T 2	



KQ

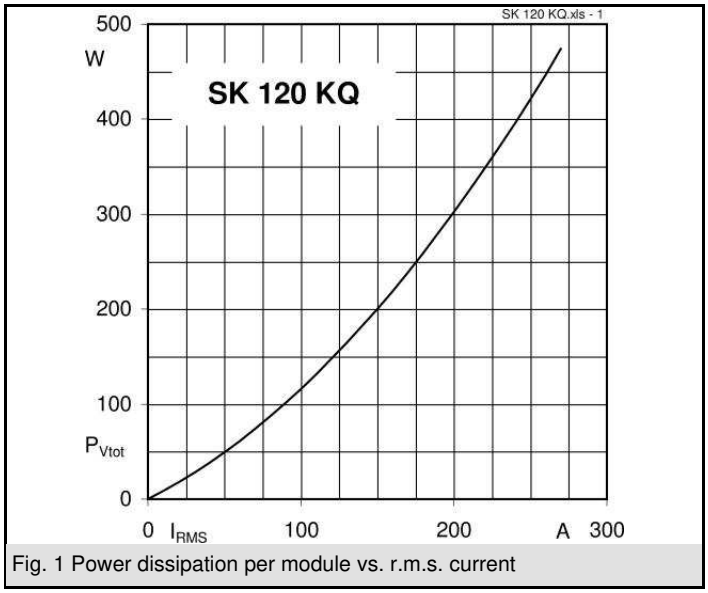


Fig. 1 Power dissipation per module vs. r.m.s. current

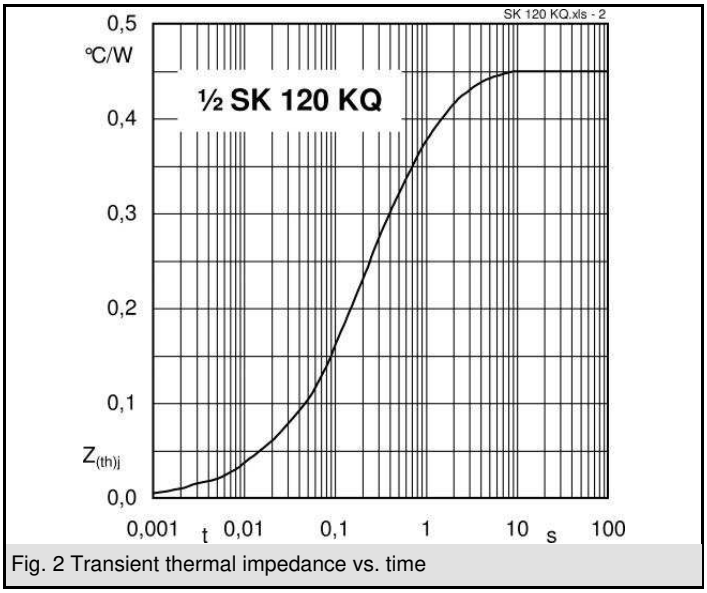


Fig. 2 Transient thermal impedance vs. time

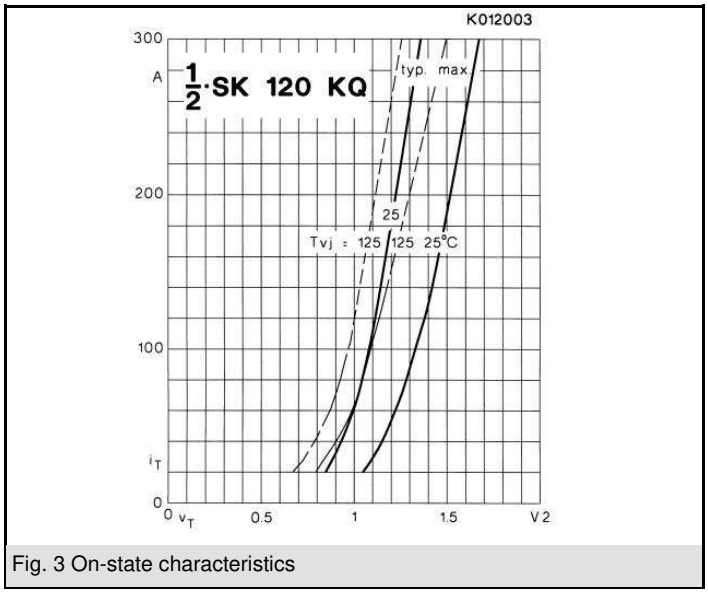


Fig. 3 On-state characteristics

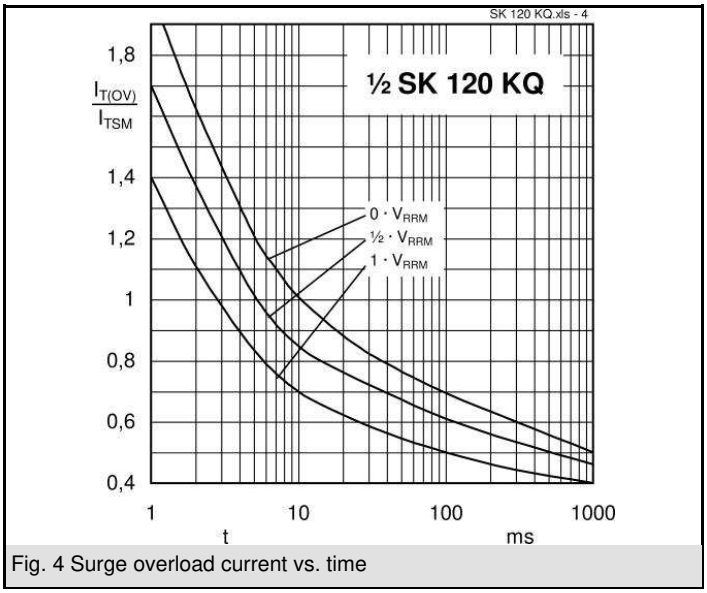


Fig. 4 Surge overload current vs. time

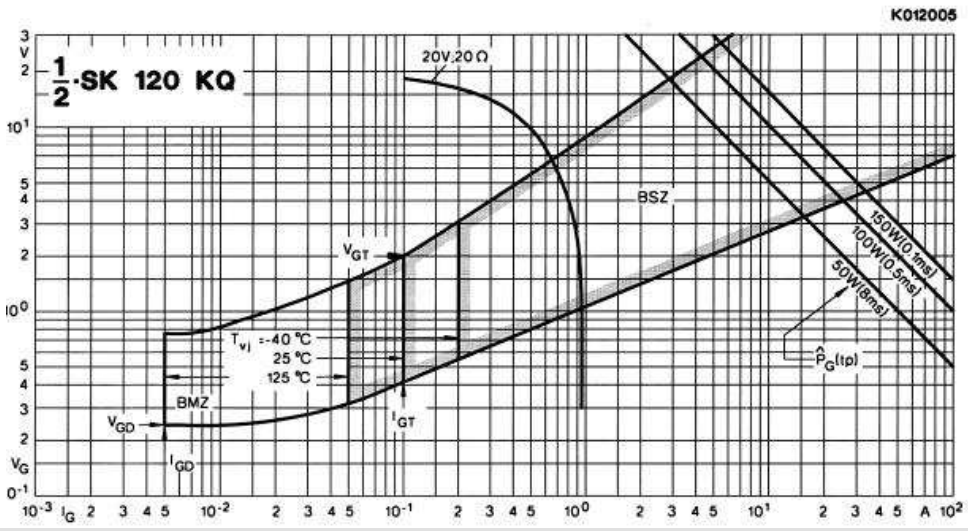
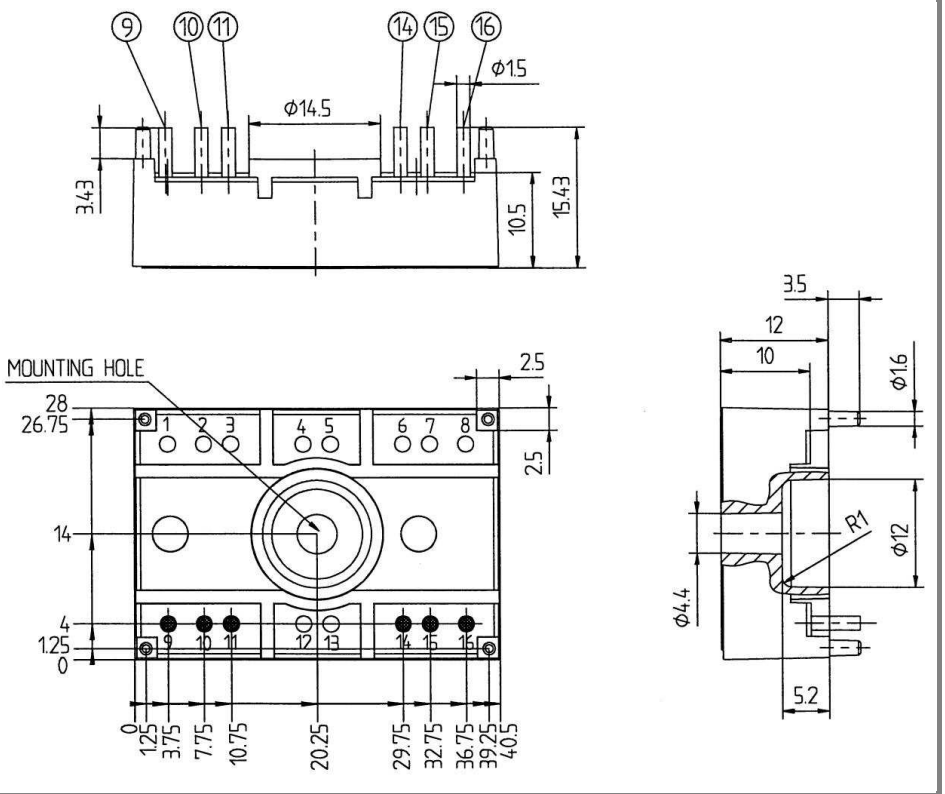
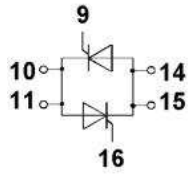


Fig. 5 Gate trigger characteristics

Dimensions in mm



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



Case T2 KQ

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