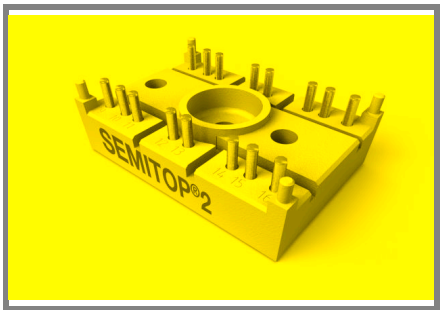
# SK 120 KQ




**SEMITOP® 2**

## Antiparallel Thyristor Module

**SK 120 KQ**

Preliminary Data

### Features

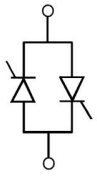
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passived thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

### 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

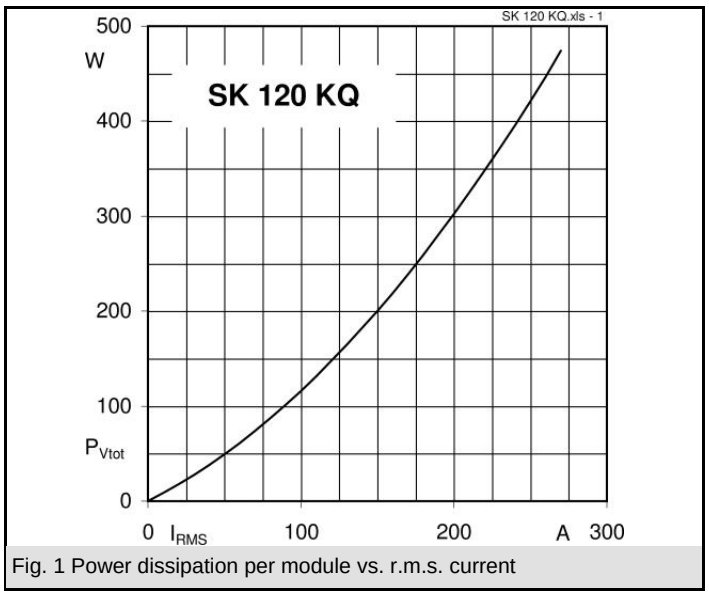



Fig. 1 Power dissipation per module vs. r.m.s. current

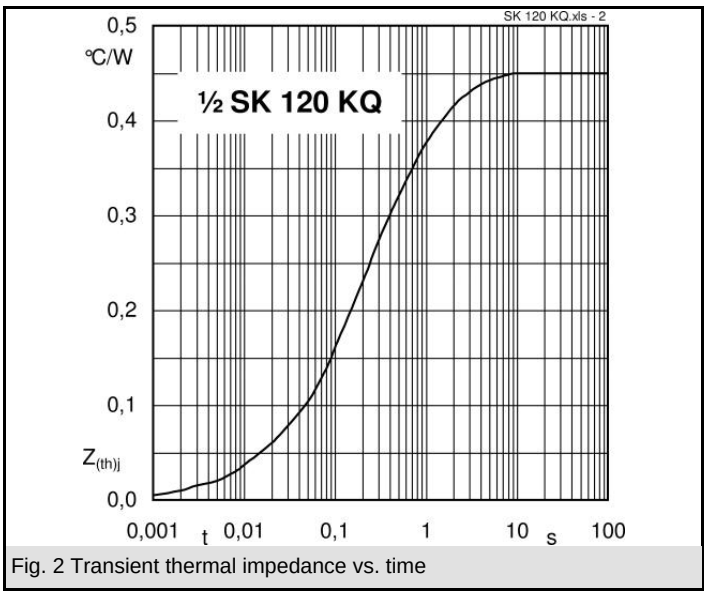



Fig. 2 Transient thermal impedance vs. time

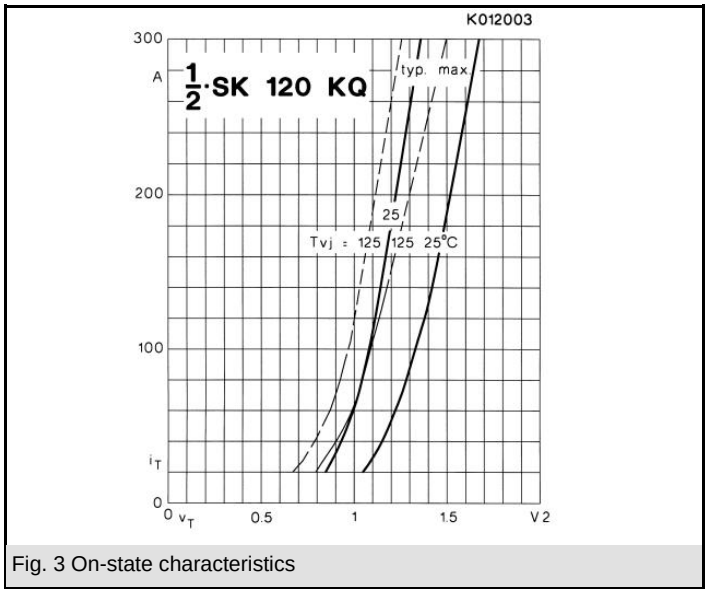



Fig. 3 On-state characteristics

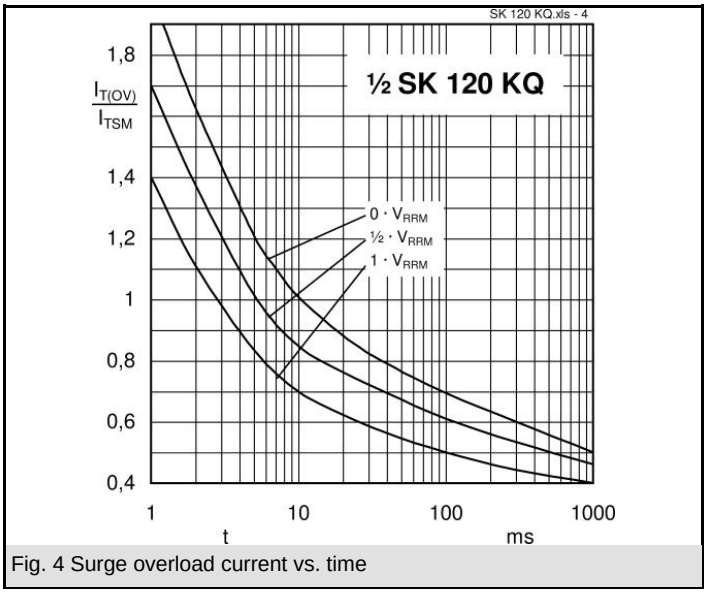



Fig. 4 Surge overload current vs. time

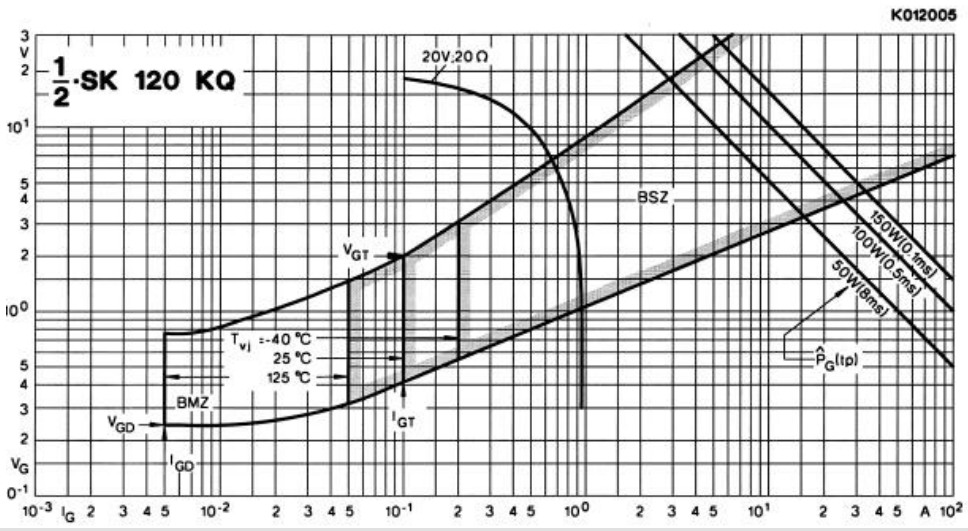
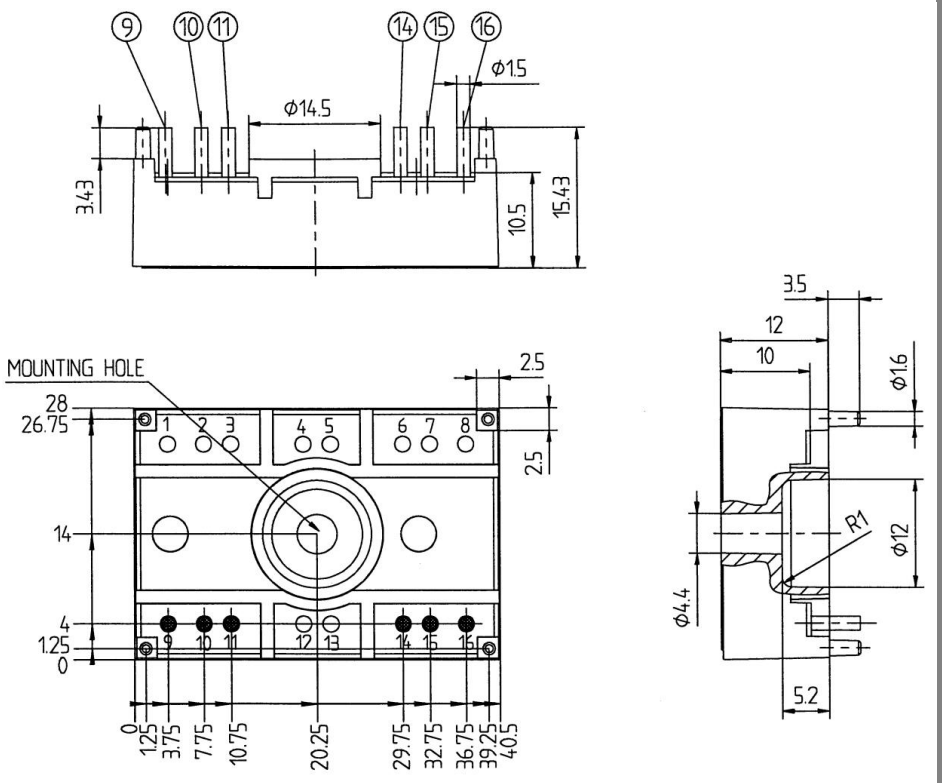
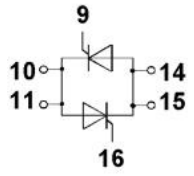



Fig. 5 Gate trigger characteristics

Dimensions in mm




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




Case T2 KQ

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.