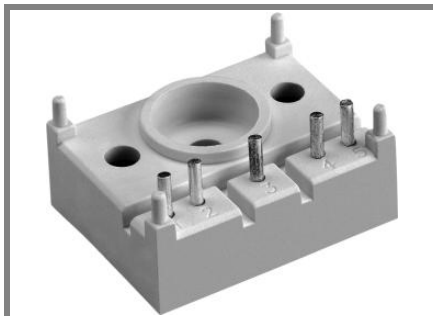


SK 25 KQ



SEMITOP® 1

Antiparallel Thyristor Module

SK 25 KQ

Preliminary Data

Features

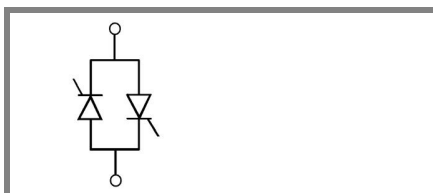
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

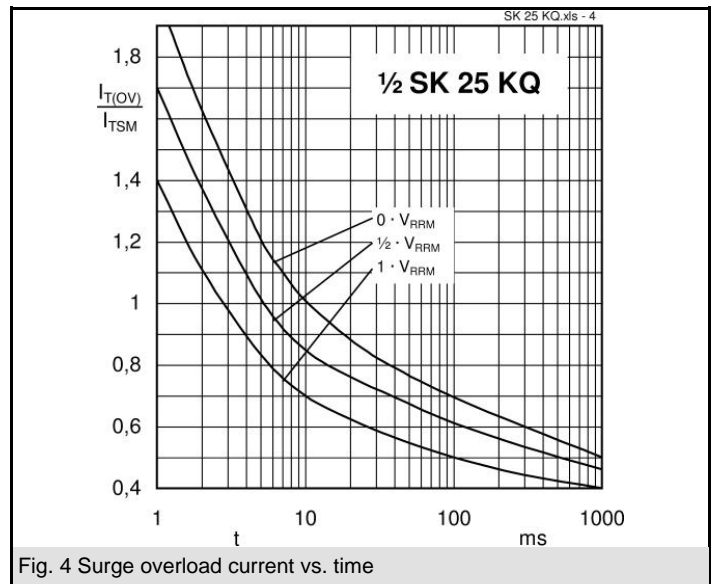
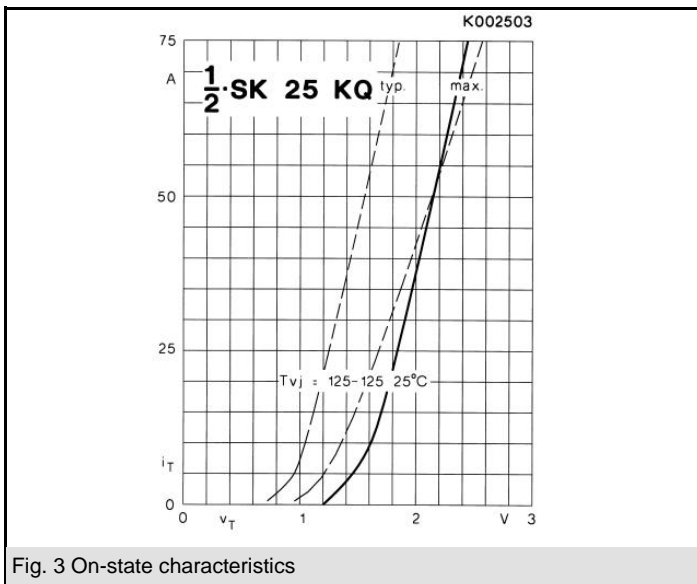
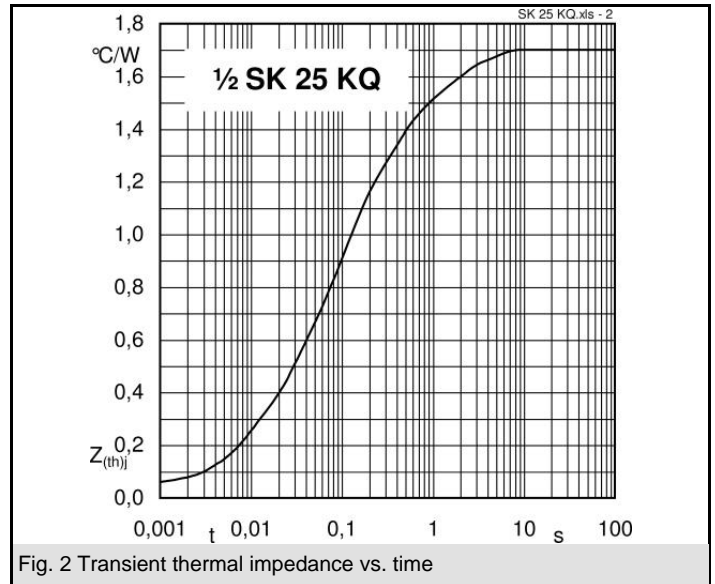
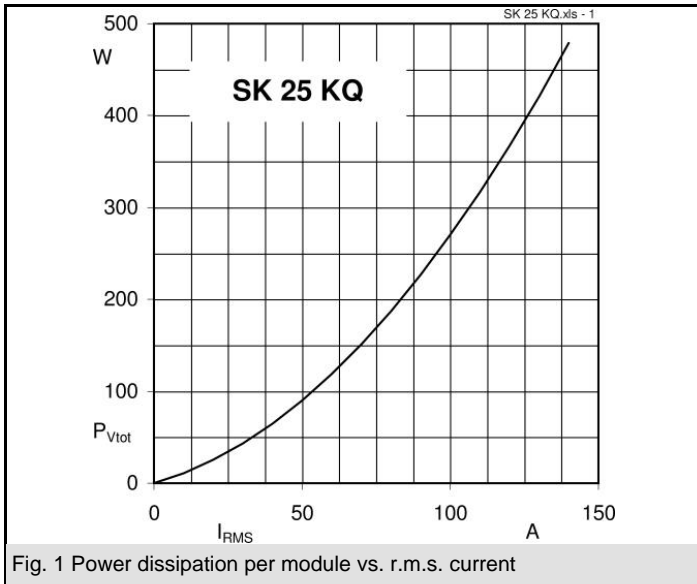
- Soft starters
- Light control (studios, theaters...)
- Temperature control

| V_{RSM} V | V_{RRM}, V_{DRM} V | $I_{RMS} = 29 \text{ A A (full conduction)}$ ($T_s = 85^\circ \text{C}$) |
|----------------|-------------------------|---|
| 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° ; $T_s = 100^\circ \text{C}$ | 20 | A |
| | W1C ; sin. 180° ; $T_s = 85^\circ \text{C}$ | 29 | A |
| I_{TSM} | $T_{vj} = 25^\circ \text{C}$; 10 ms | 320 | A |
| | $T_{vj} = 125^\circ \text{C}$; 10 ms | 280 | A |
| i^2t | $T_{vj} = 25^\circ \text{C}$; 8,3...10 ms | 510 | A ² s |
| | $T_{vj} = 125^\circ \text{C}$; 8,3...10 ms | 390 | A ² s |
| V_T | $T_{vj} = 25^\circ \text{C}$, $I_T = 75 \text{ A}$ | max. 2,45 | V |
| $V_{T(TO)}$ | $T_{vj} = 125^\circ \text{C}$ | max. 1,1 | V |
| r_T | $T_{vj} = 125^\circ \text{C}$ | max. 20 | m Ω |
| I_{DD}, I_{RD} | $T_{vj} = 125^\circ \text{C}$, $V_{RD} = V_{RRM}$ | max. 8 | 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} | $V_D = 0,67 * V_{DRM}$ | 1 | μs |
| $(dv/dt)_{cr}$ | $T_{vj} = 125^\circ \text{C}$ | 500 | V/ μs |
| $(di/dt)_{cr}$ | $T_{vj} = 125^\circ \text{C}$; $f = 50...60 \text{ Hz}$ | 100 | A/ μs |
| t_q | $T_{vj} = 125^\circ \text{C}$; typ. | 80 | μs |
| I_H | $T_{vj} = 25^\circ \text{C}$; typ. / max. | 80 / 150 | mA |
| I_L | $T_{vj} = 25^\circ \text{C}$; $R_G = 33 \Omega$; typ. / max. | 150 / 300 | mA |
| V_{GT} | $T_{vj} = 25^\circ \text{C}$; d.c. | min. 2 | V |
| I_{GT} | $T_{vj} = 25^\circ \text{C}$; d.c. | min. 100 | mA |
| V_{GD} | $T_{vj} = 125^\circ \text{C}$; d.c. | max. 0,25 | V |
| I_{GD} | $T_{vj} = 125^\circ \text{C}$; d.c. | max. 3 | mA |
| $R_{th(j-s)}$ | cont. per thyristor | 1,7 | K/W |
| | sin 180° per thyristor | 1,78 | K/W |
| $R_{th(j-s)}$ | cont. per W1C | 0,85 | K/W |
| | sin 180° per W1C | 0,89 | K/W |
| T_{vj} | | -40 ... +125 | $^\circ \text{C}$ |
| T_{stg} | | -40 ... +125 | $^\circ \text{C}$ |
| T_{solder} | terminals, 10s | 260 | $^\circ \text{C}$ |
| V_{isol} | a. c. 50 Hz; r.m.s.; 1 s / 1 min. | 3000 / 2500 | V~ |
| M_s | Mounting torque to heatsink | 1,5 | Nm |
| M_t | | | Nm |
| a | | | m/s ² |
| m | | 13 | g |
| Case | SEMITOP® 1 | T 1 | |



KQ



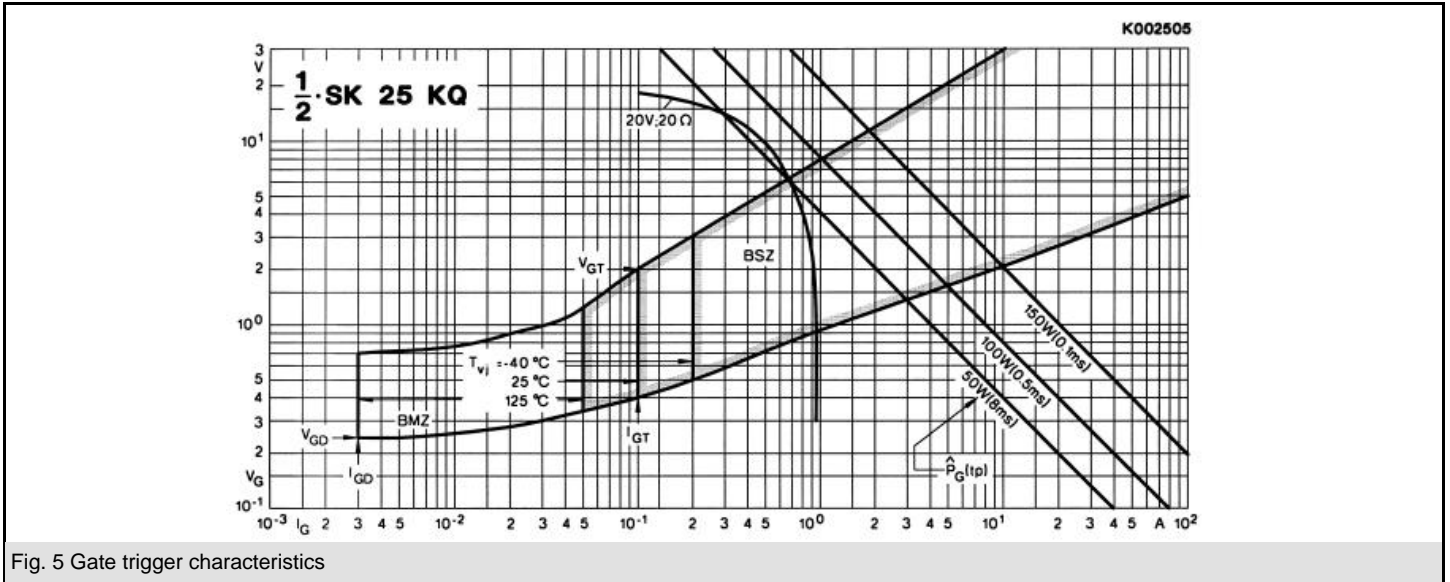
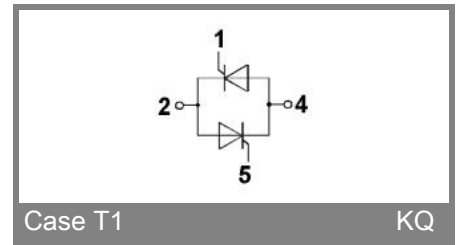
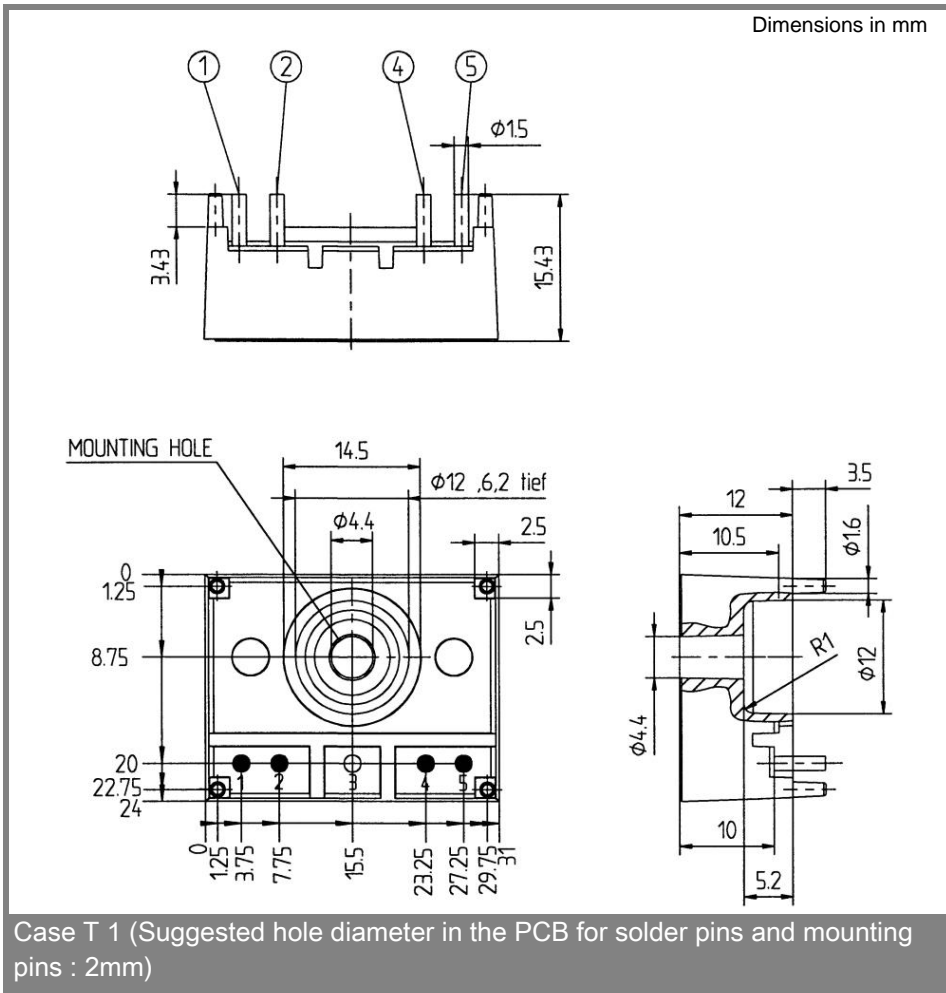


Fig. 5 Gate trigger characteristics



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