



SEMITOP®2

Two separated thyristors

SK 100 TAA

Target Data

Features

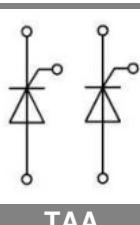
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600 reverse voltage
- High surge currents

Typical Applications*

- Brake chopper
- Soft starters

| | | |
|-----------|--------------------|---|
| V_{RSM} | V_{RRM}, V_{DRM} | $I_T = 100 \text{ A}$ ($T_s = 80^\circ\text{C}$) |
| V | V | SK 100 TAA 08 |
| 900 | 800 | SK 100 TAA 12 |
| 1300 | 1200 | SK 100 TAA 16 |
| 1700 | 1600 | |

| Characteristics | | $T_s = 25^\circ\text{C}$ unless otherwise specified | |
|------------------------|--|---|------------------|
| Symbol | Conditions | Values | Units |
| I_T | $T_s = 100^\circ\text{C}$ | 65 | A |
| I_T | $T_s = 80^\circ\text{C}$ | 100 | A |
| | | | A |
| I_{TSM}/I_{FSM} | $T_{vj} = 25 \text{ (125)}^\circ\text{C}; 10 \text{ ms}$ | 2000 (1800) | A |
| I^2t | $T_{vj} = 25 \text{ (125)}^\circ\text{C}; \text{half sine wave, } 10 \text{ ms}$ | 20000 (16200) | A ² s |
| T_{stg} | | -40 ... +125 | °C |
| T_{solder} | terminals, 10 s | 260 | °C |
| Thyristor | | | |
| $(dv/dt)_{cr}$ | $T_{vj} = 125^\circ\text{C}$ | 1000 | V/μs |
| $(di/dt)_{cr}$ | $T_{vj} = 125^\circ\text{C}; f = 50 \dots 60 \text{ Hz}$ | 50 | 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_T | $T_{vj} = 25^\circ\text{C}; (I_T = 300 \text{ A}); \text{max.}$ | 1,85 | V |
| $V_{T(TO)}$ | $T_{vj} = 125^\circ\text{C}$ | max. 0,9 | V |
| r_T | $T_{vj} = 125^\circ\text{C}$ | max. 3,5 | mΩ |
| I_{DD}, I_{RD} | $T_{vj} = 125^\circ\text{C}; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$ | max. 20 | mA |
| $R_{th(j-s)}$ | cont. per thyristor | 0,45 | K/W |
| T_{vj} | | -40 ... +130 | °C |
| V_{GT} | $T_{vj} = 25^\circ\text{C}; \text{d.c.}$ | 2 | V |
| I_{GT} | $T_{vj} = 25^\circ\text{C}; \text{d.c.}$ | 100 | mA |
| V_{GD} | $T_{vj} = 125^\circ\text{C}; \text{d.c.}$ | 0,25 | V |
| I_{GD} | $T_{vj} = 125^\circ\text{C}; \text{d.c.}$ | 5 | mA |
| Diode | | | |
| V_F | $T_{vj} = \text{°C}; (I_F = A); \text{max.}$ | | V |
| $V_{(TO)}$ | $T_{vj} = \text{°C}$ | | V |
| r_T | $T_{vj} = \text{°C}$ | | mΩ |
| I_{RD} | $T_{vj} = \text{°C}; V_{RD} = V_{RRM}$ | | mA |
| $R_{th(j-s)}$ | | | K/W |
| T_{vj} | | | °C |
| Mechanical data | | | |
| V_{isol} | AC 50Hz, r.m.s. 1min (1sec) | 2500 (3000) | V |
| M_1 | mounting torque | 2 | Nm |
| w | | 19 | g |
| Case | SEMITOP®2 | T 81 | |



TAA

SK 100 TAA

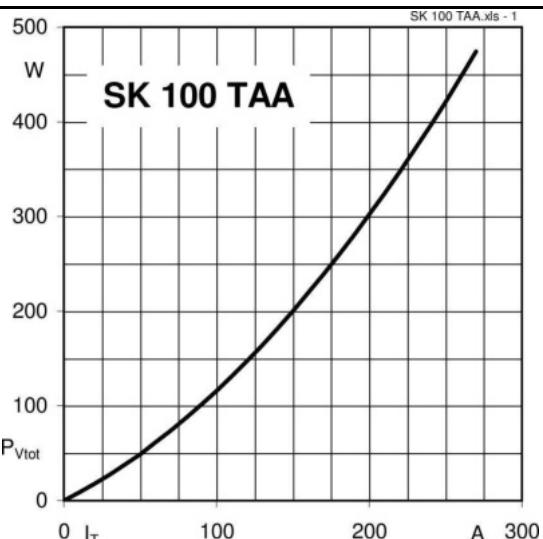


Fig. 1 Power dissipation vs. current

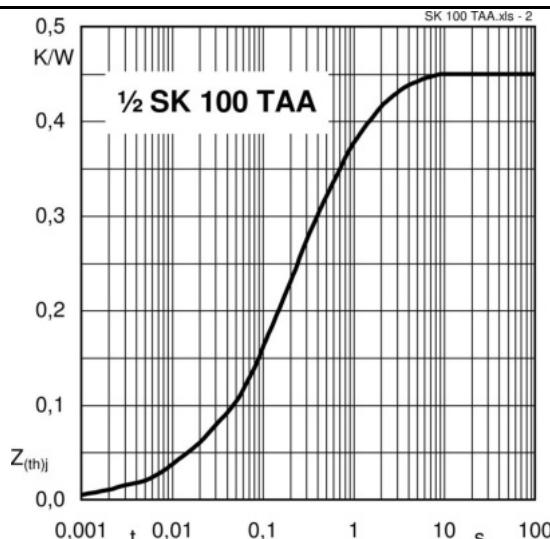


Fig. 2 Transient thermal impedance vs. time

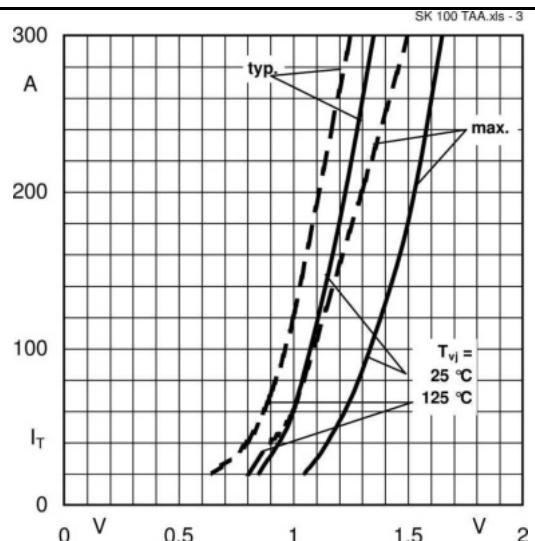


Fig. 3 Forward characteristic of single thyristor

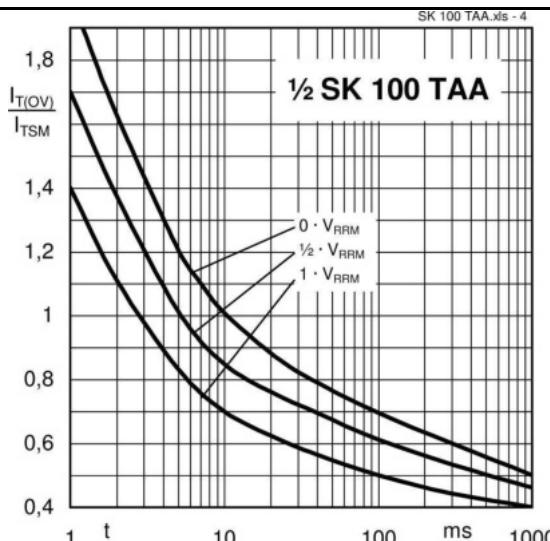


Fig. 4 Surge overload current vs. time

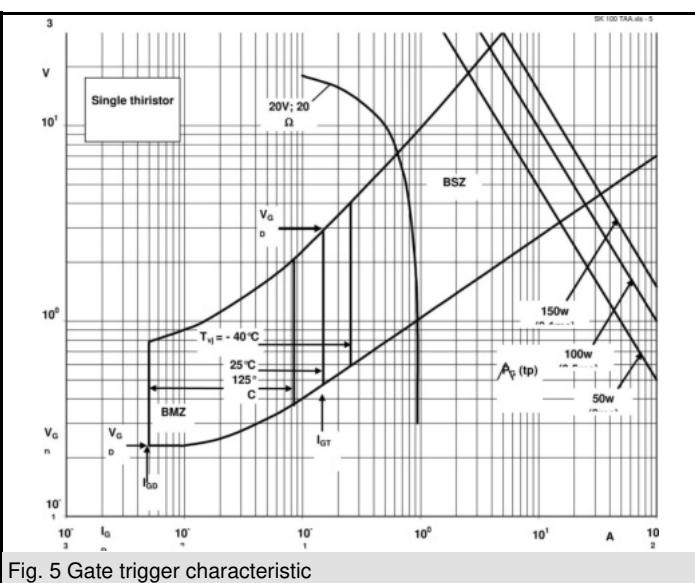
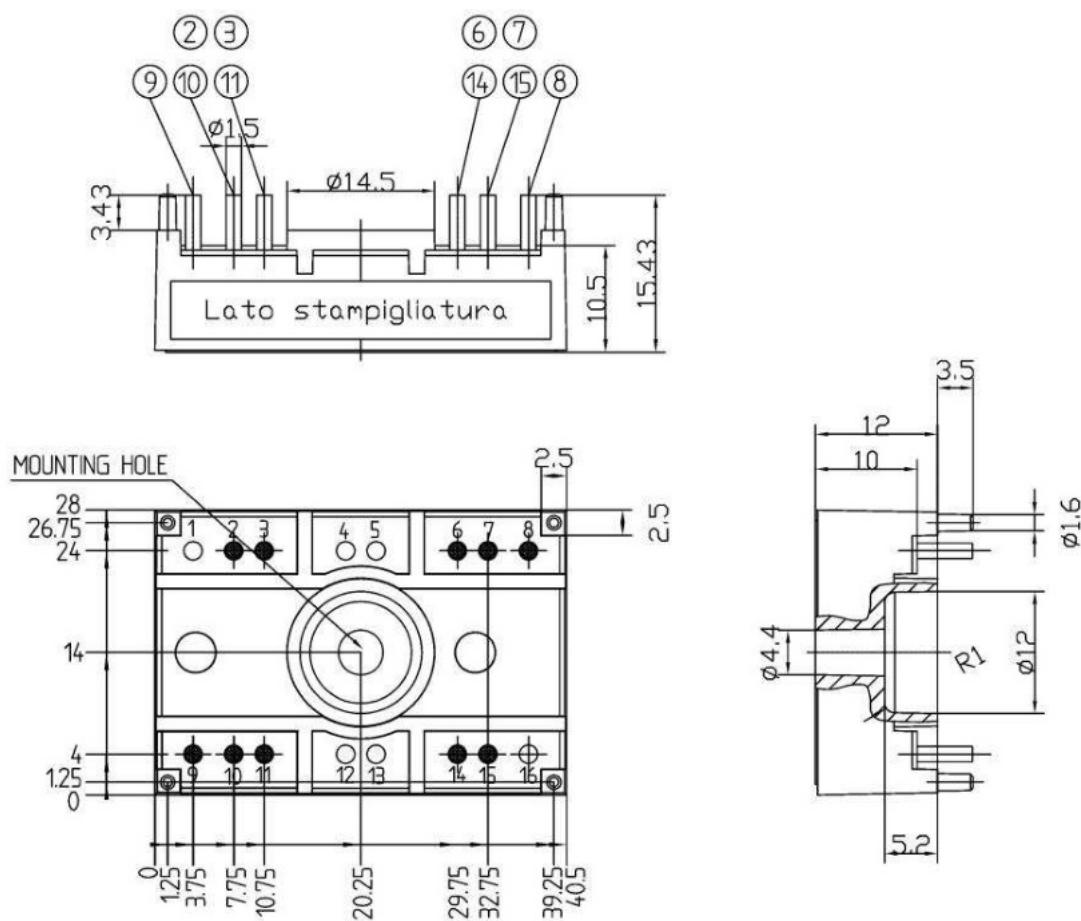


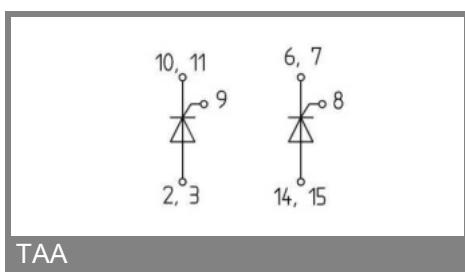
Fig. 5 Gate trigger characteristic

Dimensions in mm



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T 81 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.