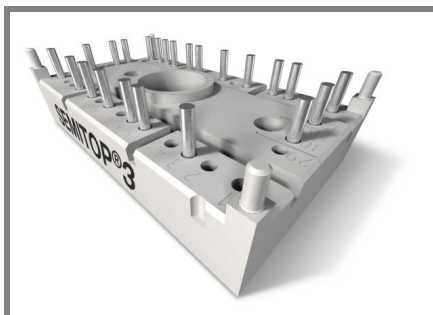


SK 40 DH



SEMITOP® 3

Half Controlled Bridge Rectifier

SK 40 DH

Preliminary Data

Features

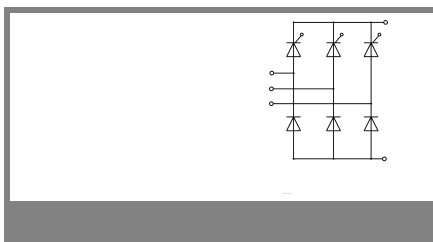
- Compact design
- One screw mounting
- Heat transfer and insulation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications*

- Soft starters
- Light control
- Temperature control
- Motor control

| V_{RSM} V | V_{RRM}, V_{DRM} V | $I_D = 42$ A (full conduction) ($T_s = 80$ °C) |
|----------------|-------------------------|--|
| 900 | 800 | SK 40 DH 08 |
| 1300 | 1200 | SK 40 DH 12 |
| 1700 | 1600 | SK 40 DH 16 |

| Symbol | Conditions | Values | Units |
|---------------------|---|---------------|--------------------------------------|
| I_D | $T_s = 80$ °C | 42 | A |
| I_{FSM} / I_{TSM} | $T_{vj} = 25$ °C; 10 ms $T_{vj} = 125$ °C; 10 ms | 370 270 | A A |
| i^2t | $T_{vj} = 25$ °C; 10 ms $T_{vj} = 125$ °C; 10 ms | 685 365 | A ² s A ² s |
| V_T | $T_{vj} = 25$ °C; 75A | max. 2,45 | V |
| $V_{T(TO)}$ | $T_{vj} = 125$ °C; | max. 1,1 | V |
| r_T | $T_{vj} = 125$ °C | max. 20 | mΩ |
| I_{DD}, I_{RD} | $T_{vj} = 125$ °C; $V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$ | max. 8 | mA |
| t_{gd} | $T_{vj} =$ °C; $I_G =$ A; $di_G/dt =$ A/μs | | μs |
| t_{gr} | $V_D = \cdot V_{DRM}$ | | μs |
| $(dv/dt)_{cr}$ | $T_{vj} = 125$ °C | max. 1000 | V/μs |
| $(di/dt)_{cr}$ | $T_{vj} = 125$ °C; $f = 50..60$ Hz | max. 50 | A/μs |
| t_q | $T_{vj} = 125$ °C; typ. | 120 | μs |
| I_H | $T_{vj} = 25$ °C; typ. / max. | 80 / 150 | mA |
| I_L | $T_{vj} = 25$ °C; $R_G = 33$ Ω | 150 / 300 | 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. 3 | mA |
| $R_{th(j-s)}$ | Per thyristor Per diode | 1,7 1,7 | K/W K/W |
| T_{solder} | Terminals, 10s | 260 | °C |
| T_{vj} | Diodes | -40...+150 | °C |
| T_{vj} | | | °C |
| T_{stg} | | -40...+125 | °C |
| T_{vj} | Thyristors | -40...+125 | °C |
| V_{isol} | a. c. 50 Hz; r.m.s.; 1 s / 1 min. | 3000 (2500) | V |
| M_s | Mounting torque to heatsink | 2,5 | Nm |
| m | weight | 30 | g |
| Case | SEMITOP® 3 | T 39 | |



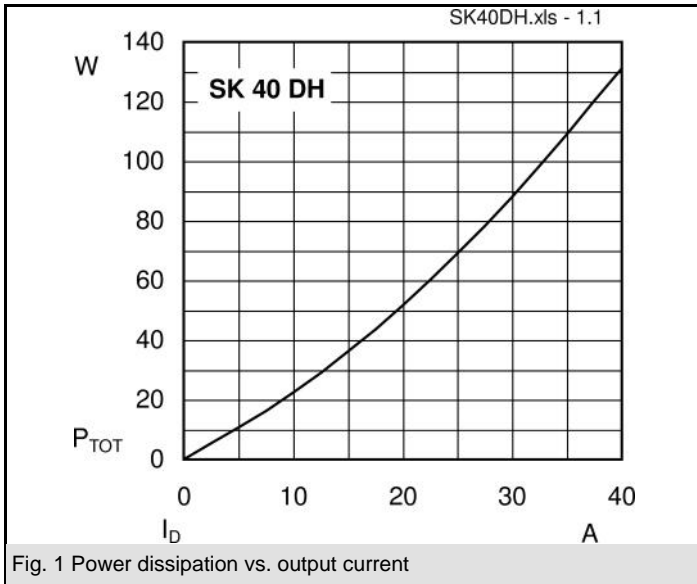


Fig. 1 Power dissipation vs. output current

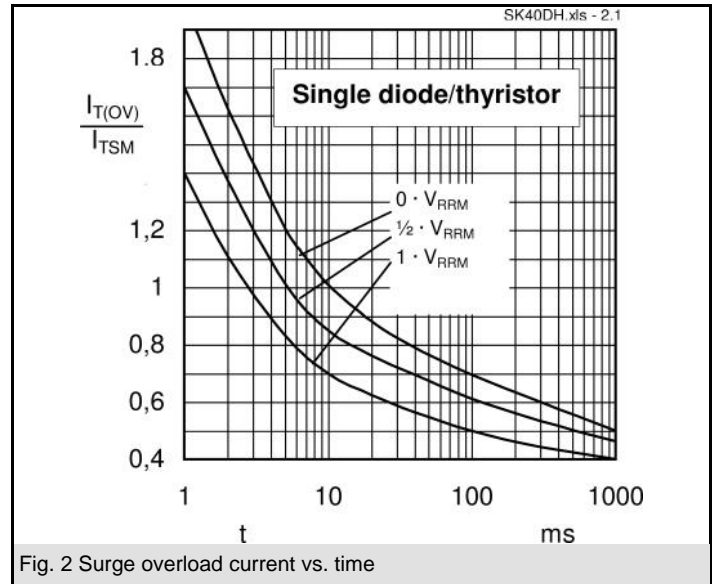


Fig. 2 Surge overload current vs. time

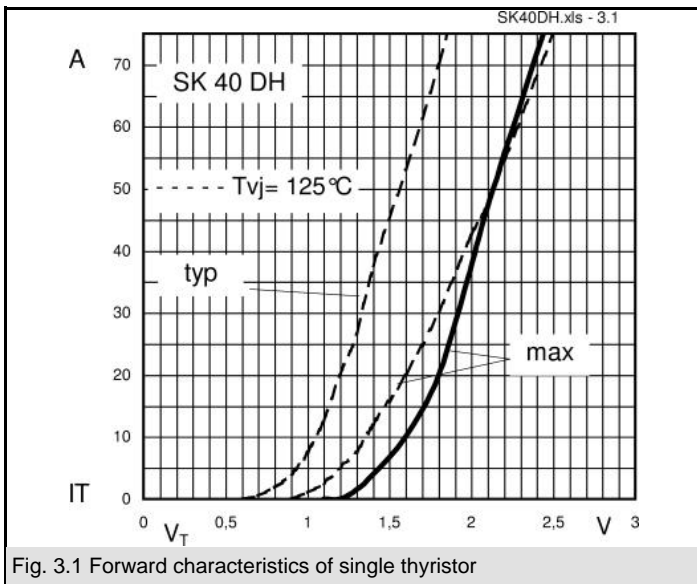


Fig. 3.1 Forward characteristics of single thyristor

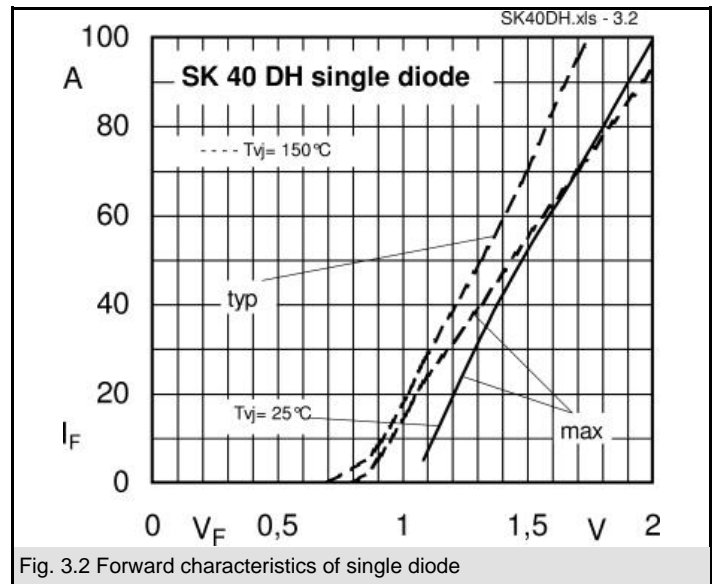


Fig. 3.2 Forward characteristics of single diode

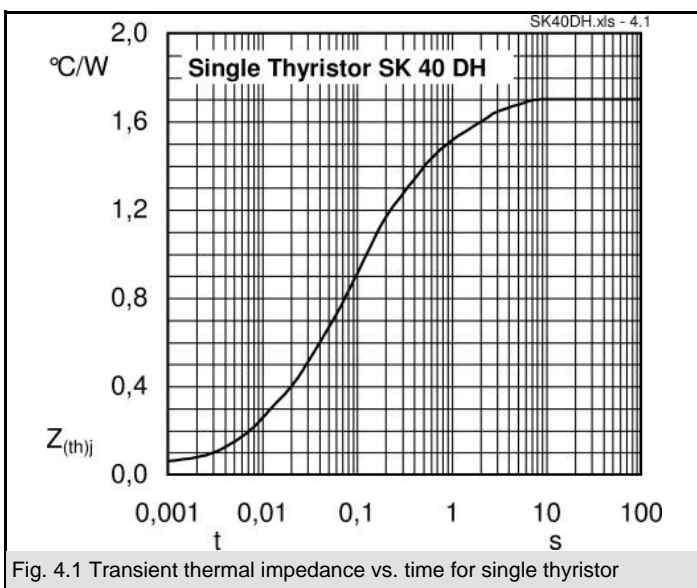


Fig. 4.1 Transient thermal impedance vs. time for single thyristor

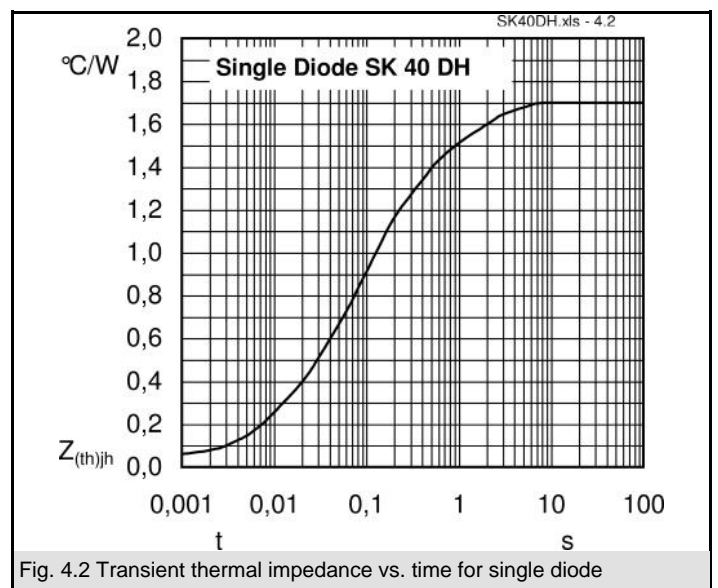


Fig. 4.2 Transient thermal impedance vs. time for single diode

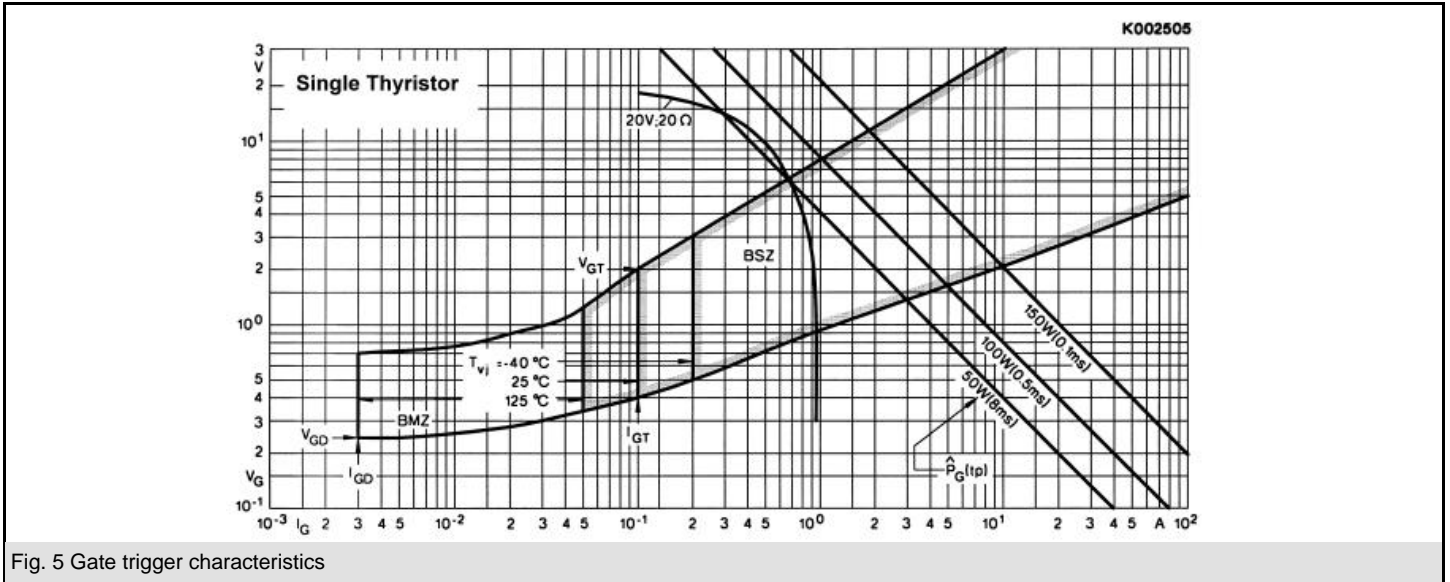
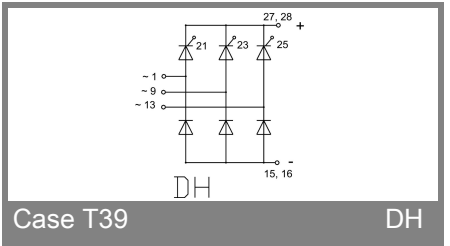
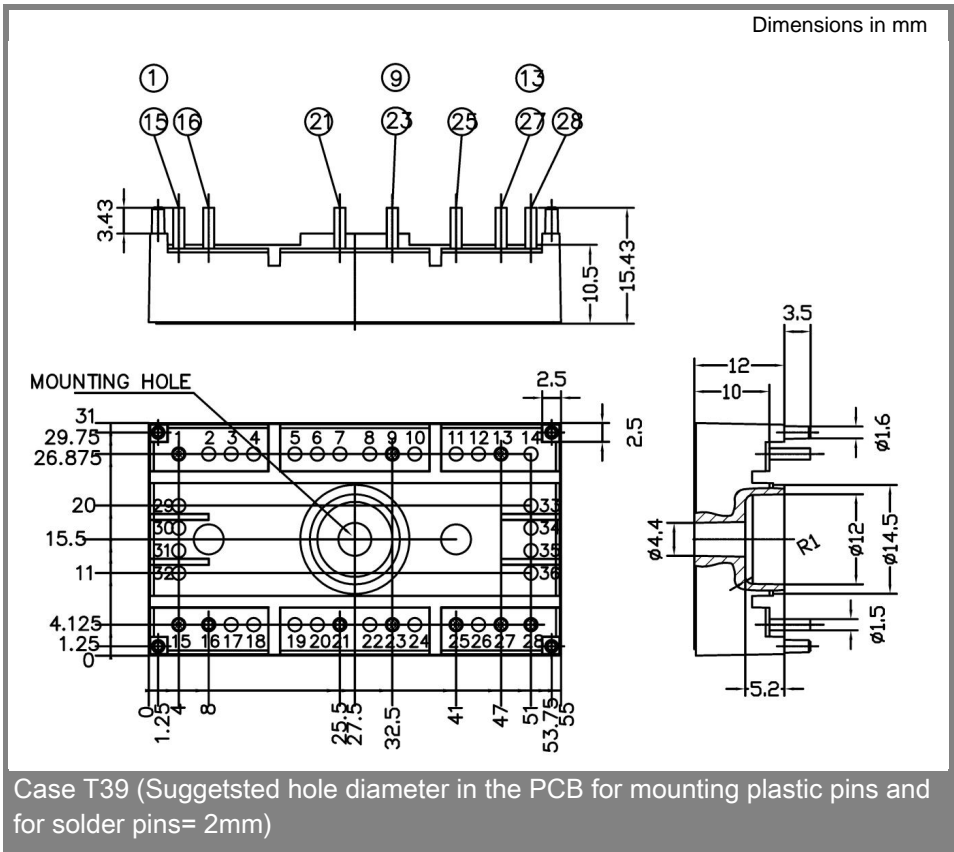


Fig. 5 Gate trigger characteristics



Case T39

DH

* 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.