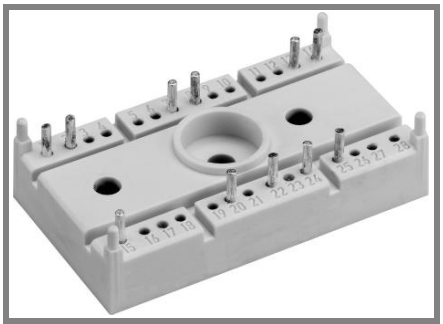
# SK 40 DH



**SEMITOP® 3**

## Half Controlled Bridge Rectifier

**SK 40 DH**

Preliminary Data

### Features

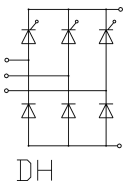
- Compact design
- One screw mounting
- Heat transfer and insolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passived thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

### Typical Applications

- Soft starters
- Light control
- 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 | 320 | A |
| | $T_{vj}$ = 125 °C; 10 ms | 280 | A |
| i²t | $T_{vj}$ = 25 °C; 8,3 ... 10 ms | 510 | A²s |
| | $T_{vj}$ = 125 °C; 8,3...10 ms | 390 | A²s |
| $V_T$ | $T_{vj}$ = 25 °C; 75A | max. 2,45 | V |
| $V_{T(TO)}$ | $T_{vj}$ = 125 °C; | 1,1 | V |
| $r_T$ | $T_{vj}$ = 125 °C | 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 |
| $t_{gr}$ | $V_D$ = · $V_{DRM}$ | | µs |
| $(dv/dt)_{cr}$ | $T_{vj}$ = 125 °C; d.c. | max. 1000 | V/µs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 125 °C; d.c.; f = 50...60 Hz | max. 50 | A/µs |
| $t_q$ | $T_{vj}$ = 125 °C; d.c.; typ. | 120 | µs |
| $I_H$ | $T_{vj}$ = 25 °C; d.c.; typ. / max. | 80 / 150 | mA |
| $I_L$ | $T_{vj}$ = 25 °C; d.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 |
| Rth(j-s) | Per thyristor | 1,7 | K/W |
| | Per diode | 1,7 | 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 |
| a | | | m/s² |
| m | weight | 30 | g |
| Case | SEMITOP® 3 | T 39 | |




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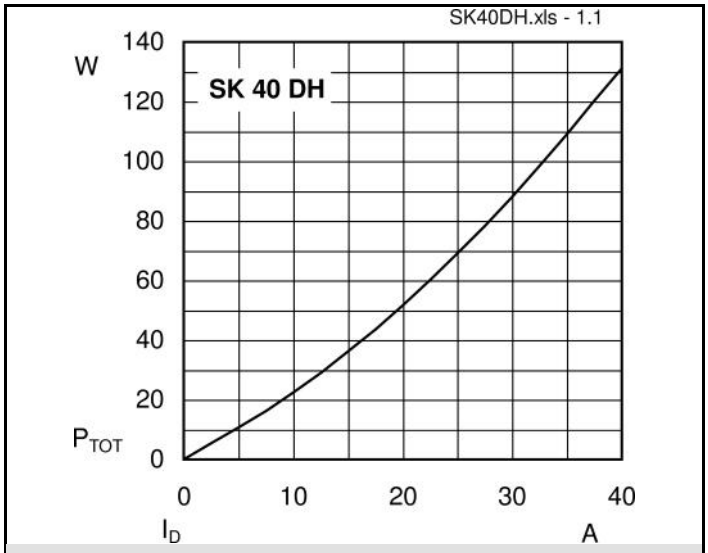



Fig. 1 Power dissipation vs. output current

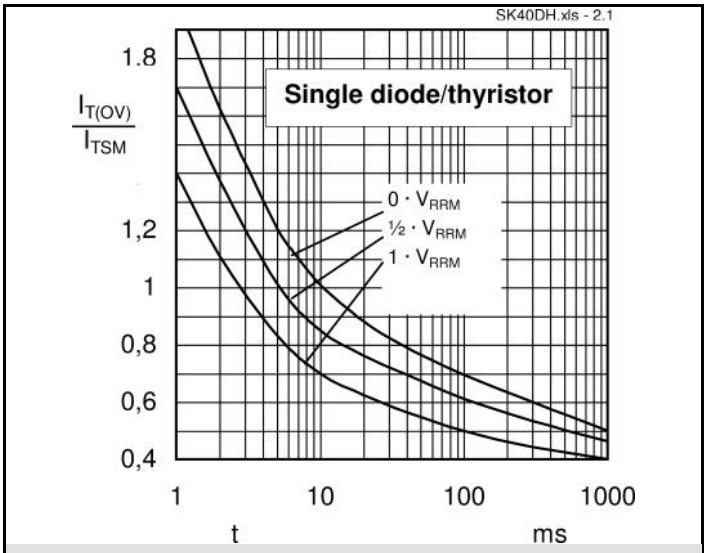



Fig. 2 Surge overload current vs. time

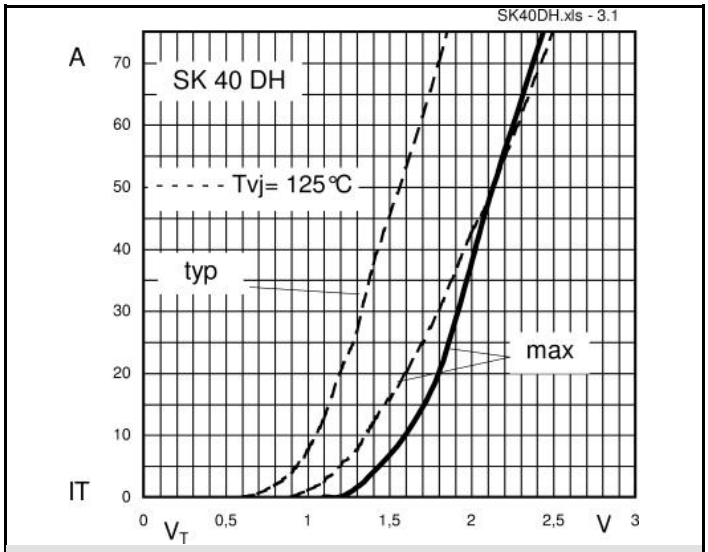



Fig. 3.1 Forward characteristics of single thyristor

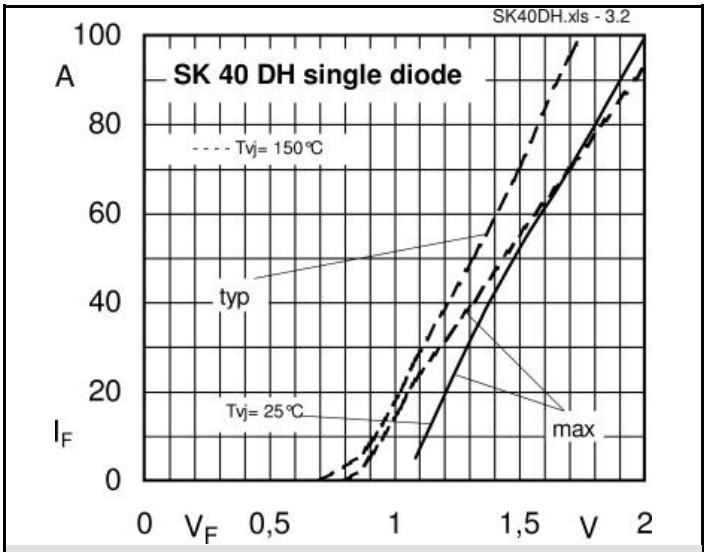



Fig. 3.2 Forward characteristics of single diode

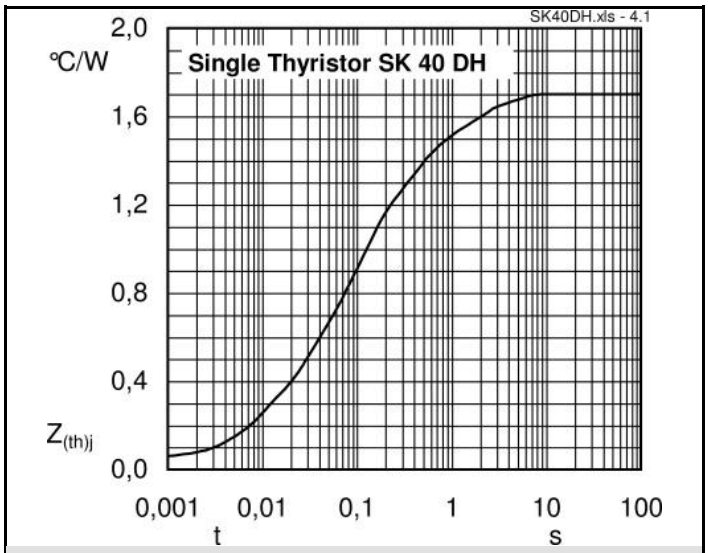



Fig. 4.1 Transient thermal impedance vs. time for single thyristor

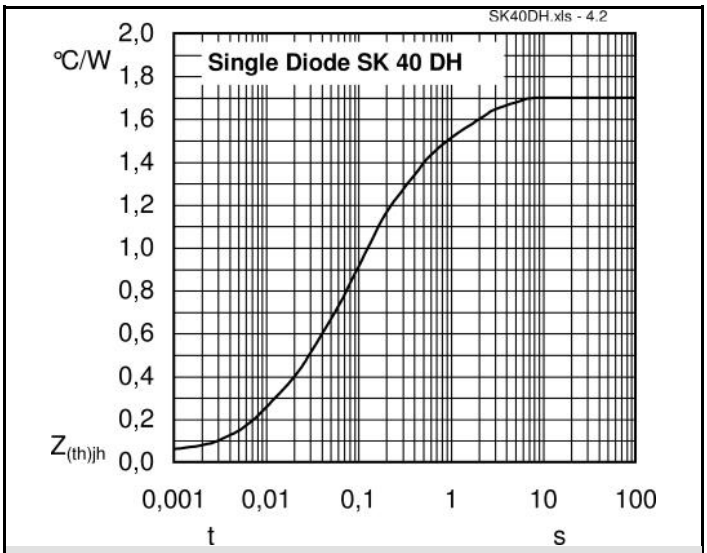



Fig. 4.2 Transient thermal impedance vs. time for single diode

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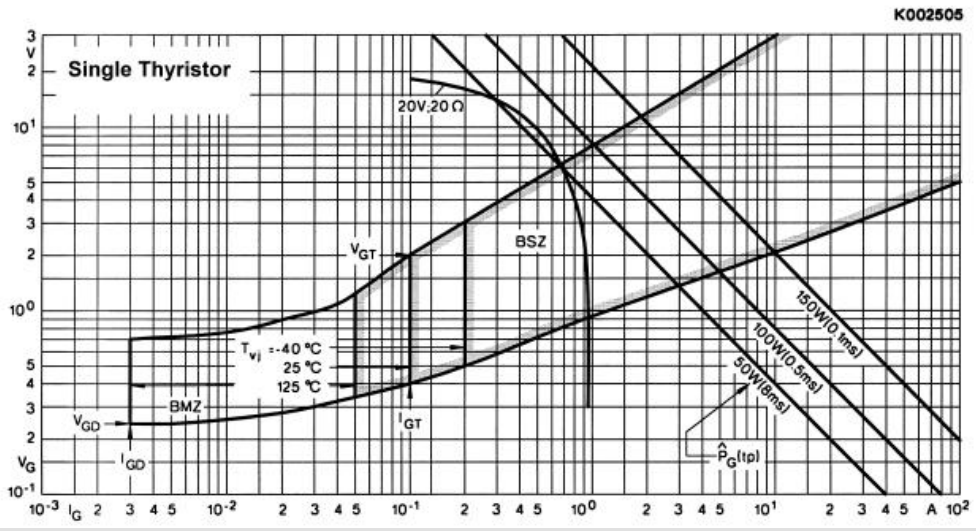
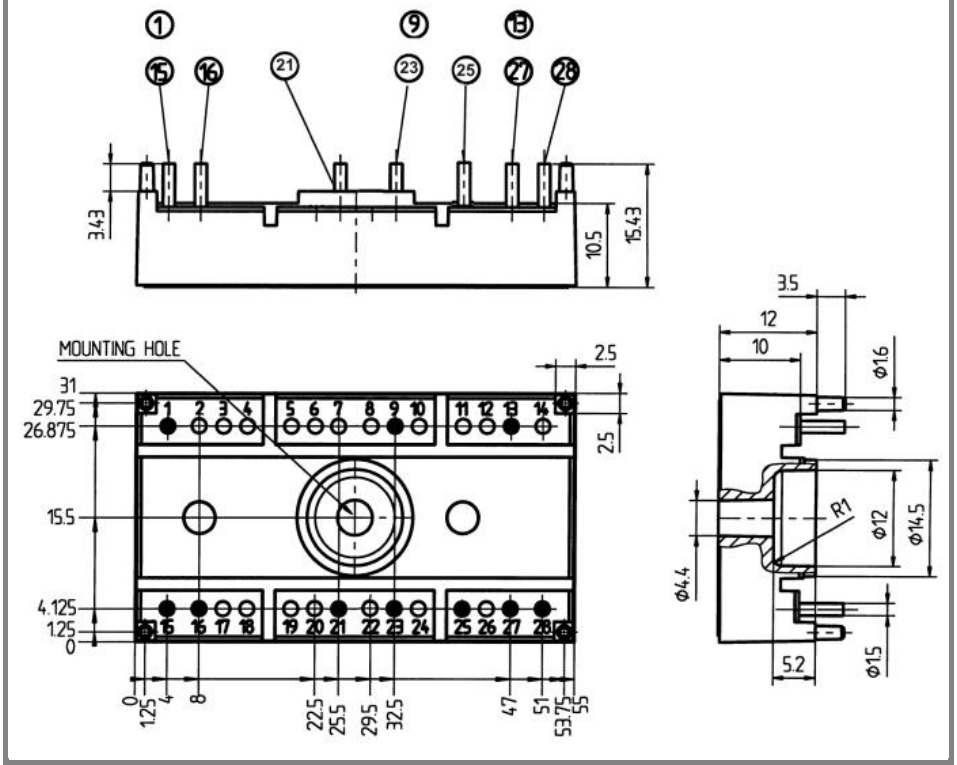
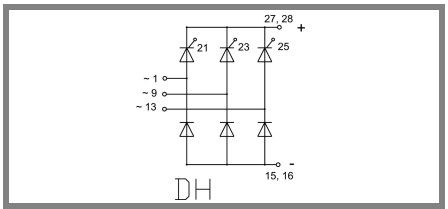



Fig. 5 Gate trigger characteristics

Dimensions in mm




Case T39 (Suggetsted hole diameter in the PCB for mounting plastic pins and for solder pins= 2mm)




Case T39 DH

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