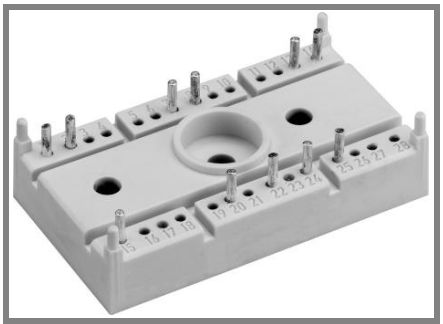
# SK 40 DT



**SEMITOP® 3**

## Controllable Bridge Rectifier

**SK 40 DT**

Preliminary Data

### Features

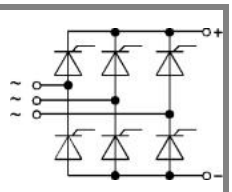
- Compact design
- One screw mounting
- Heat transfer and insolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passived thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

### 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 DT 08 |
| 1300 | 1200 | SK 40 DT 12 |
| 1700 | 1600 | SK 40 DT 16 |

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $I_D$ | $T_s$ = 80 °C | 42 | A |
| $I_{FSM}$ | $T_{vj}$ = 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; | 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 |
| $t_{gr}$ | $V_D$ = · $V_{DRM}$ | | µs |
| $(dv/dt)_{cr}$ | $T_{vj}$ = 125 °C | max. 1000 | V/µs |
| $(di/dt)_{cr}$ | $T_{vj}$ = 125 °C; f = 50...60 Hz | max. 100 | A/µs |
| $t_q$ | $T_{vj}$ = 125 °C; typ. | 80 | 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 |
| Rth(j-s) | Per thyristor | 1,7 | K/W |
| | | | K/W |
| $T_{solder}$ | Terminals, 10s | 260 | °C |
| $T_{vj}$ | | -40...+125 | °C |
| $T_{stg}$ | | -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 15 | |



**DT**

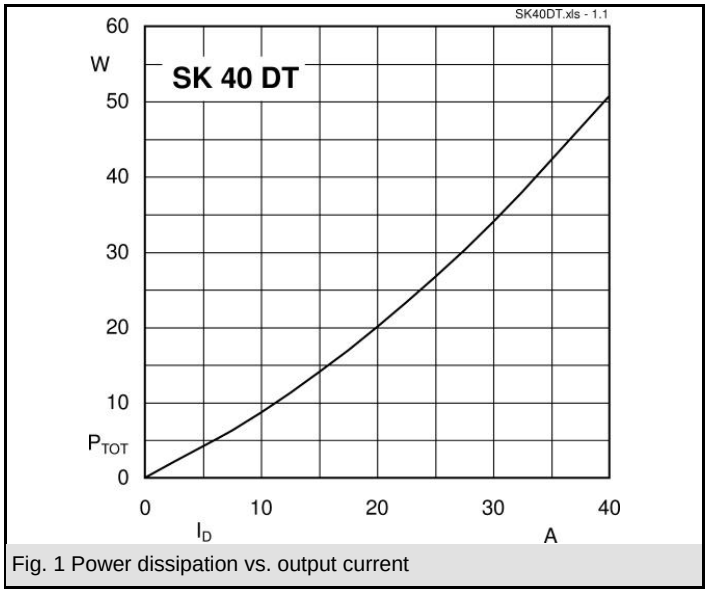



Fig. 1 Power dissipation vs. output current

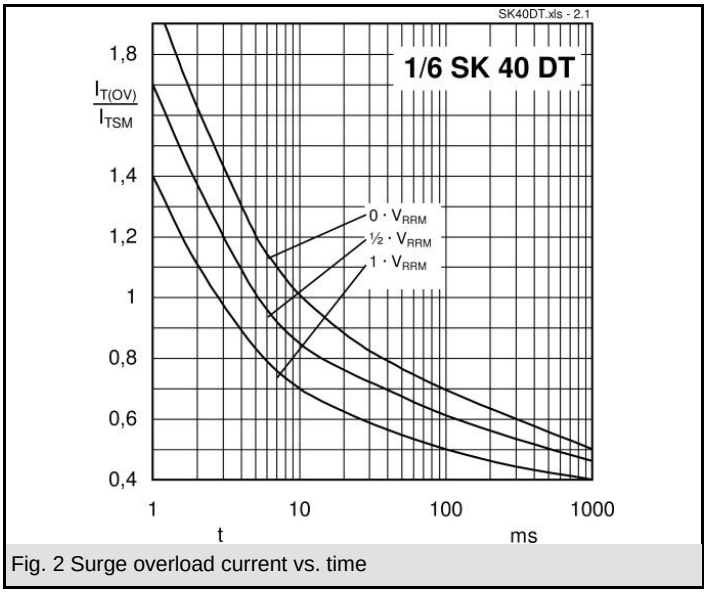



Fig. 2 Surge overload current vs. time

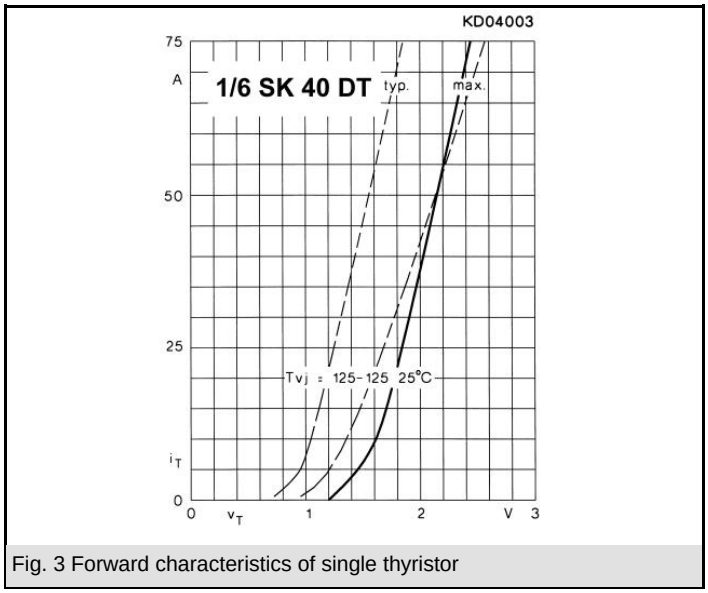



Fig. 3 Forward characteristics of single thyristor

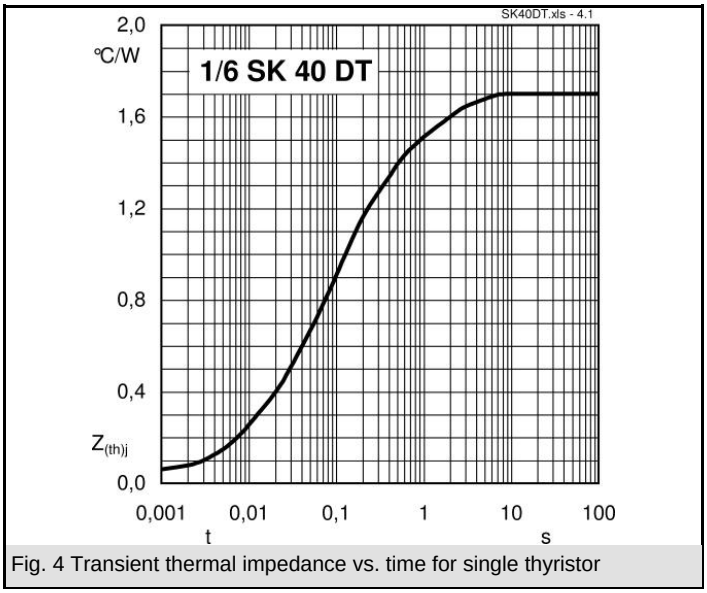



Fig. 4 Transient thermal impedance vs. time for single thyristor

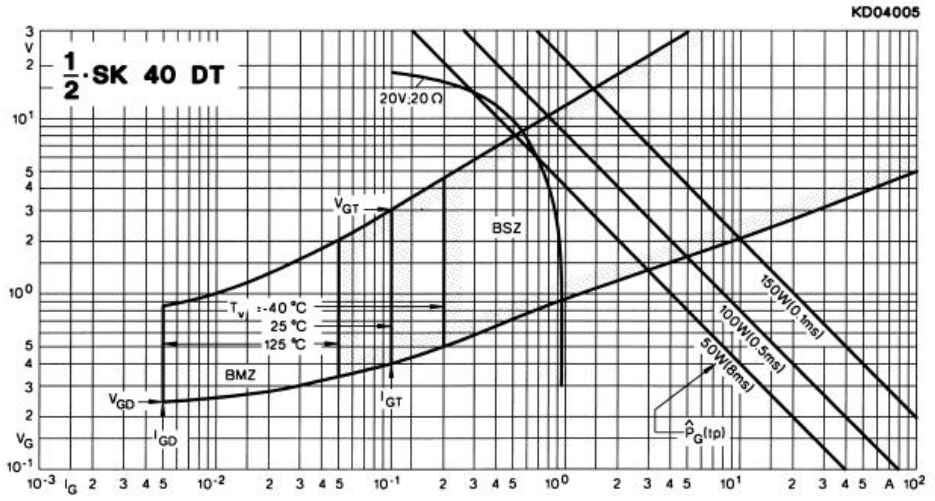
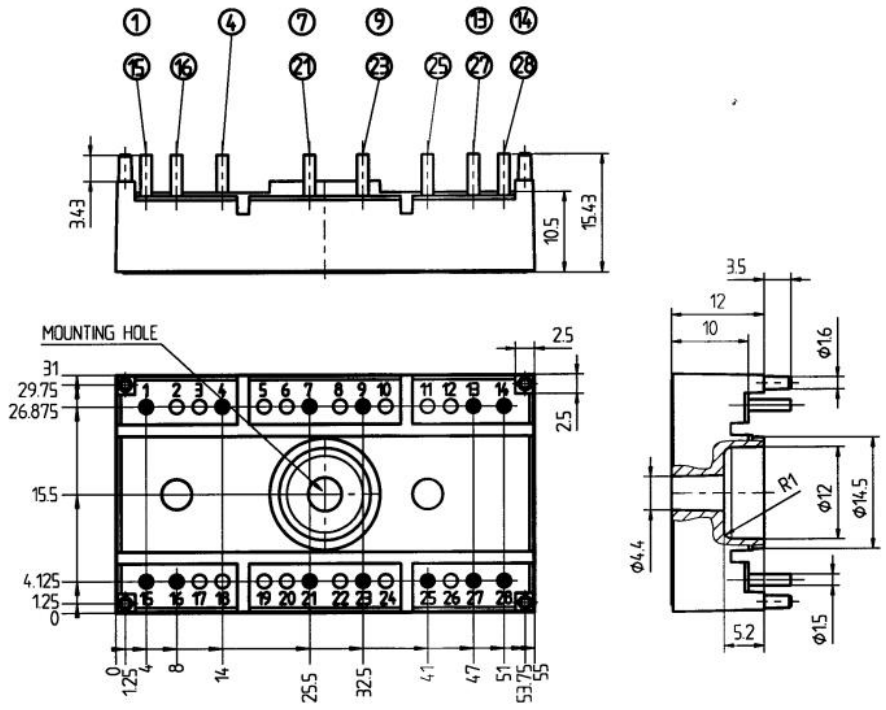
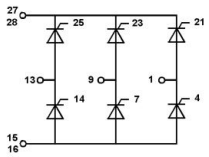



Fig. 5 Gate trigger characteristics

Dimensions in mm




Case T15 (Suggetsted hole diameter in the PCB for mounting plastic pins and for solder pins= 2mm)



Case T15 DT

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