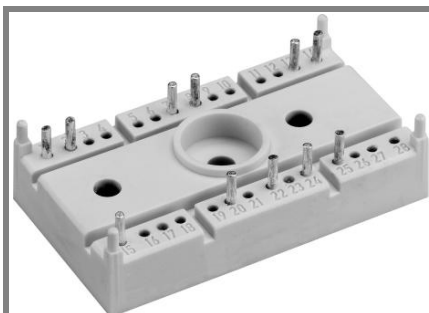


# SK 25 UT



**SEMITOP® 3**

## Antiparallel Thyristor Module

### SK 25 UT

Preliminary Data

### Features

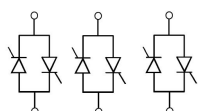
- Compact Design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Up to 1600V reverse voltage
- UL recognized, file no. E 63 532

### Typical Applications

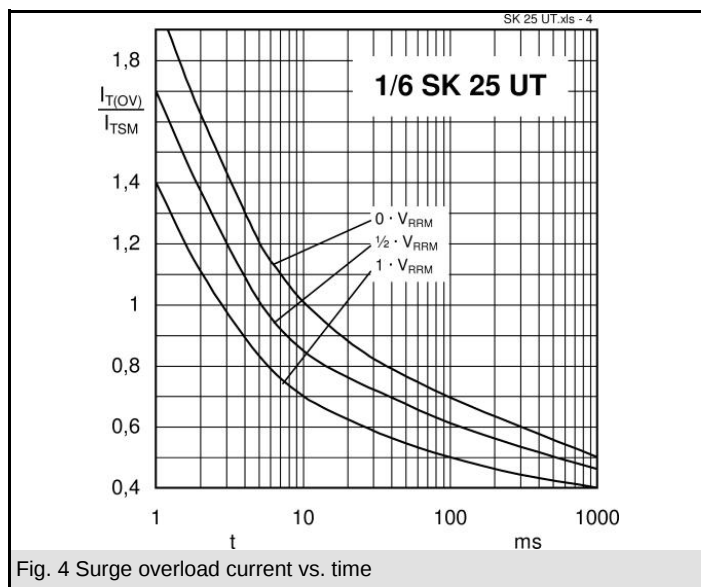
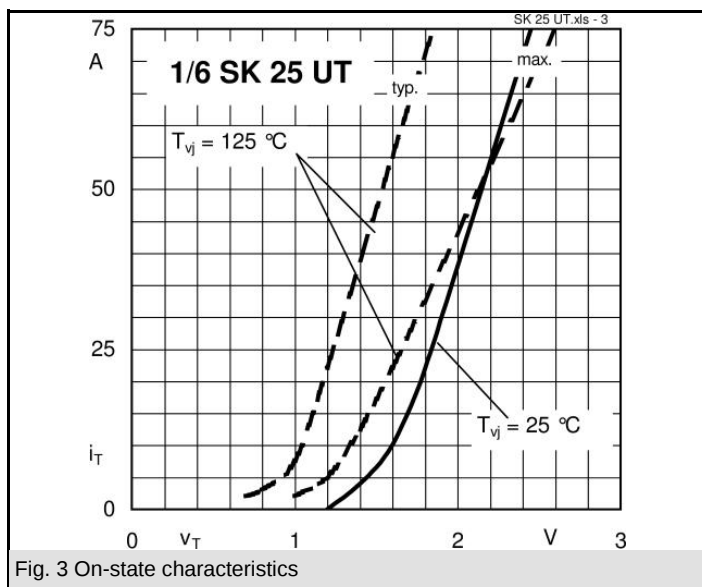
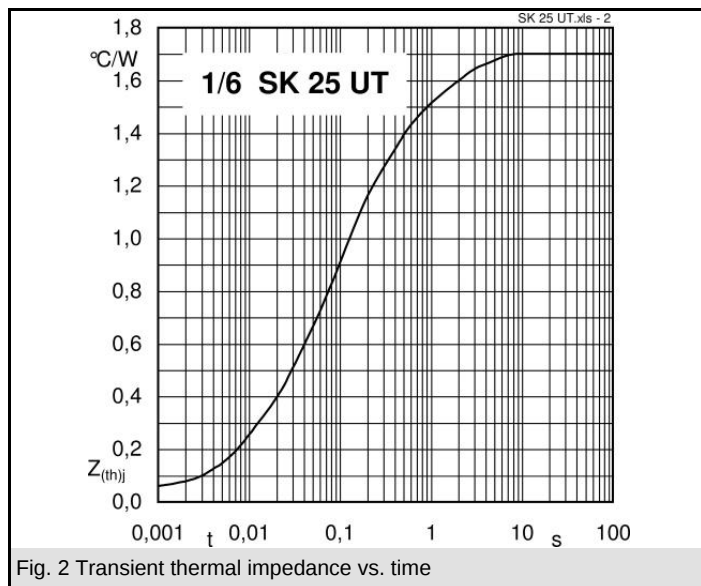
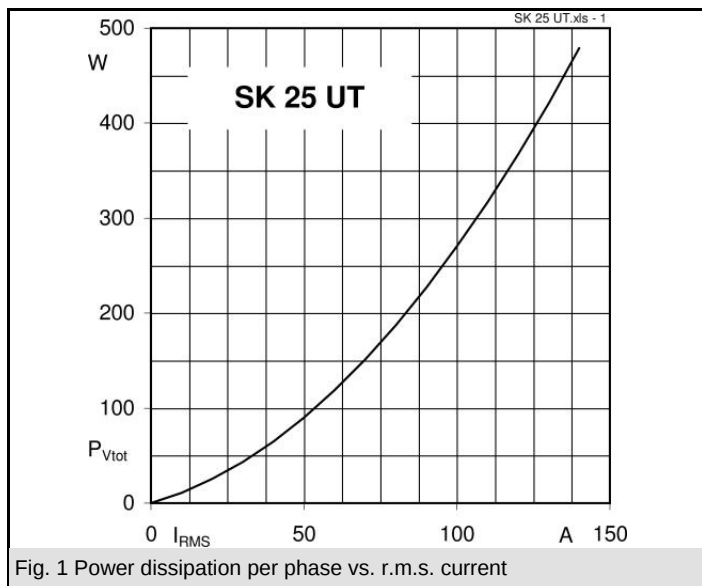
- Soft starters
- Light control (studios, theaters...)
- Temperature control

| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_{RMS} = 29 \text{ A (full conduction)}$<br>( $T_s = 85^\circ \text{C}$ ) |
|----------------|-------------------------|-----------------------------------------------------------------------------|
| 900            | 800                     | SK 25 UT 08                                                                 |
| 1300           | 1200                    | SK 25 UT 12                                                                 |
| 1700           | 1600                    | SK 25 UT 16                                                                 |

| Symbol           | Conditions                                                                               | Values       | Units            |
|------------------|------------------------------------------------------------------------------------------|--------------|------------------|
| $I_{RMS}$        | W1C ; sin. $180^\circ$ ; $T_s = 100^\circ \text{C}$                                      | 20           | A                |
|                  | W1C ; sin. $180^\circ$ ; $T_s = 85^\circ \text{C}$                                       | 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 <sup>2</sup> s |
|                  | $T_{vj} = 125^\circ \text{C}$ ; 8,3...10 ms                                              | 390          | A <sup>2</sup> 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      | mΩ               |
| $I_{DD}, I_{RD}$ | $T_{vj} = 125^\circ \text{C}$ , $V_{RD} = V_{RRM}$                                       | 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               |
| $t_{gr}$         | $V_D = 0,67 \cdot V_{DRM}$                                                               | 1            | μs               |
| $(dv/dt)_{cr}$   | $T_{vj} = 125^\circ \text{C}$                                                            | 1000         | V/μs             |
| $(di/dt)_{cr}$   | $T_{vj} = 125^\circ \text{C}$ ; $f = 50...60 \text{ Hz}$                                 | 50           | 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 $180^\circ$ per thyristor                                                            | 1,78         | K/W              |
| $R_{th(j-s)}$    | cont. per W1C                                                                            | 0,85         | K/W              |
|                  | sin $180^\circ$ per W1C                                                                  | 0,89         | K/W              |
| $T_{vj}$         |                                                                                          | -40 ... +125 | °C               |
| $T_{stg}$        |                                                                                          | -40 ... +125 | °C               |
| $T_{solder}$     | terminals, 10s                                                                           | 260          | °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               |
| $M_t$            |                                                                                          |              | Nm               |
| $a$              |                                                                                          |              | m/s <sup>2</sup> |
| $m$              |                                                                                          | 30           | g                |
| Case             | SEMITOP® 3                                                                               | T 13         |                  |



UT



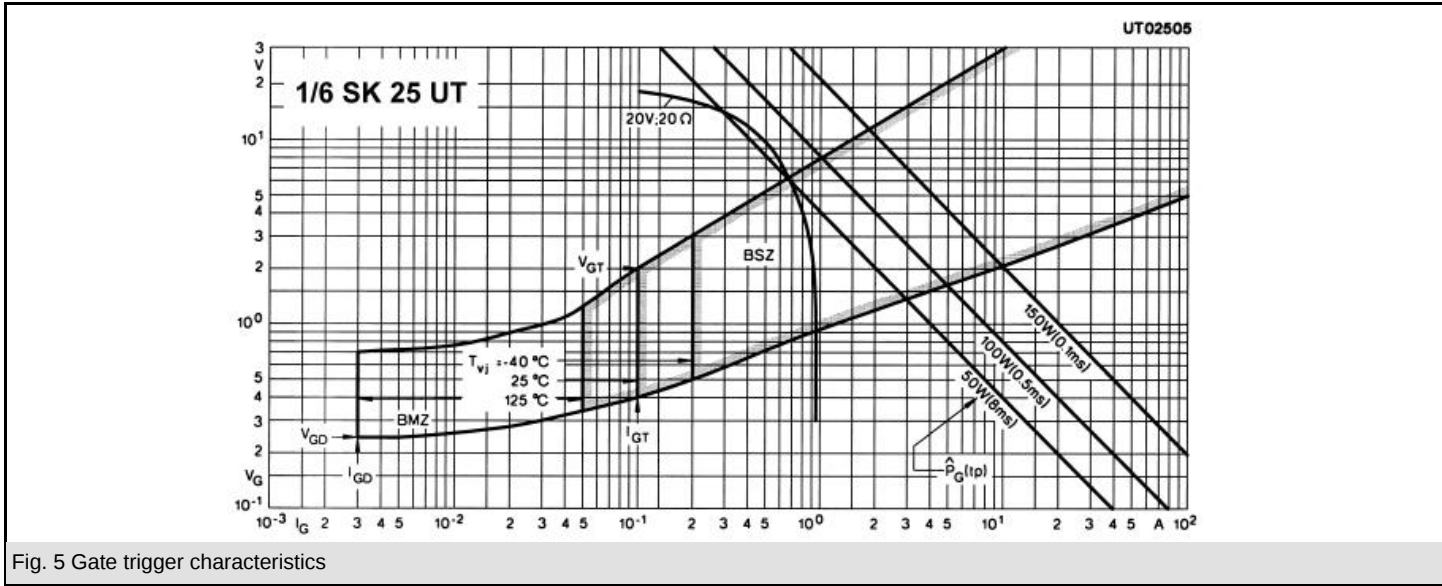
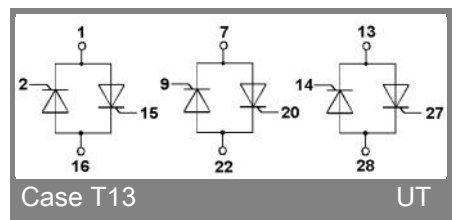
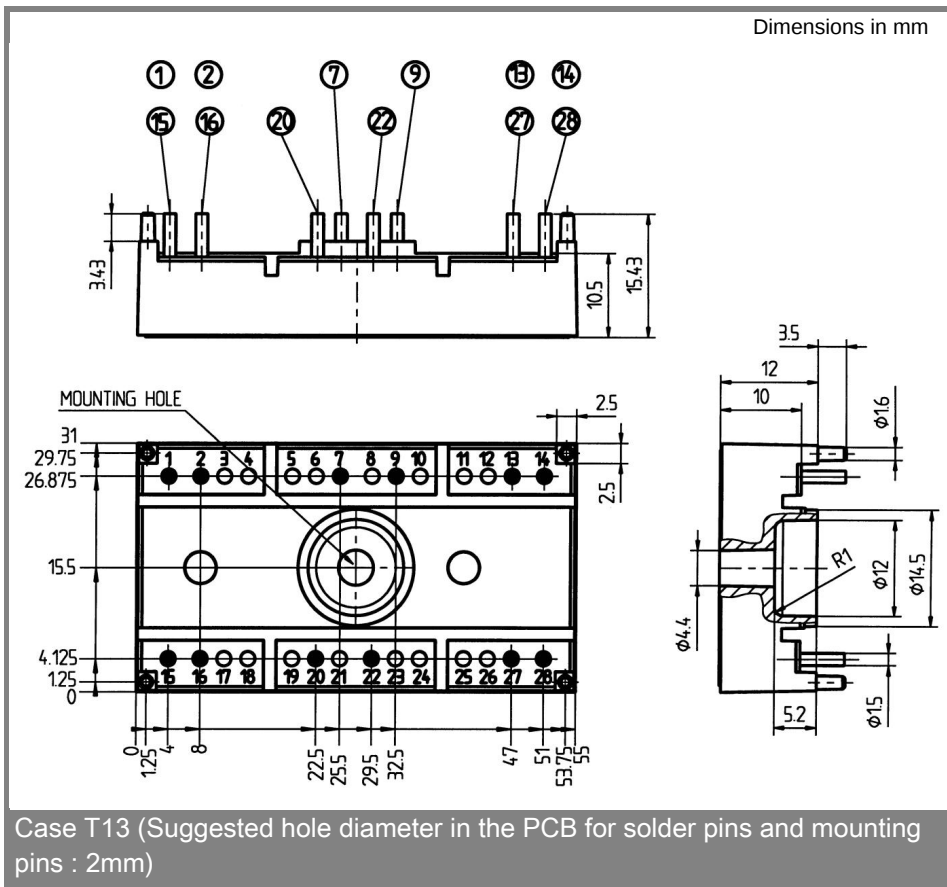


Fig. 5 Gate trigger characteristics



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