

SEMITOP® 3

## 3-phase bridge rectifier+ series thyristor

### SK 30 DTA

Target Data

### Features

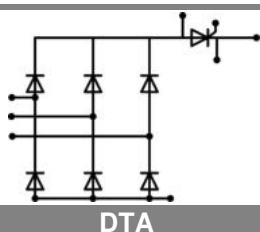
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Reverse voltage up to 1600 V
- High surge currents

### Typical Applications\*

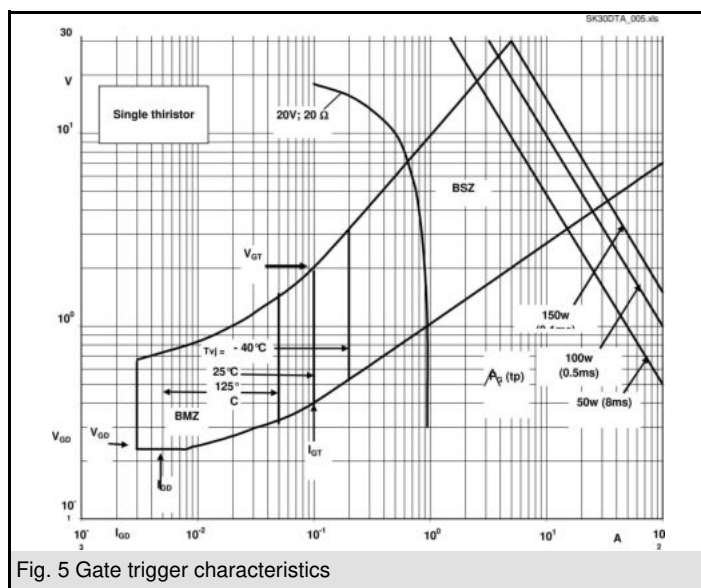
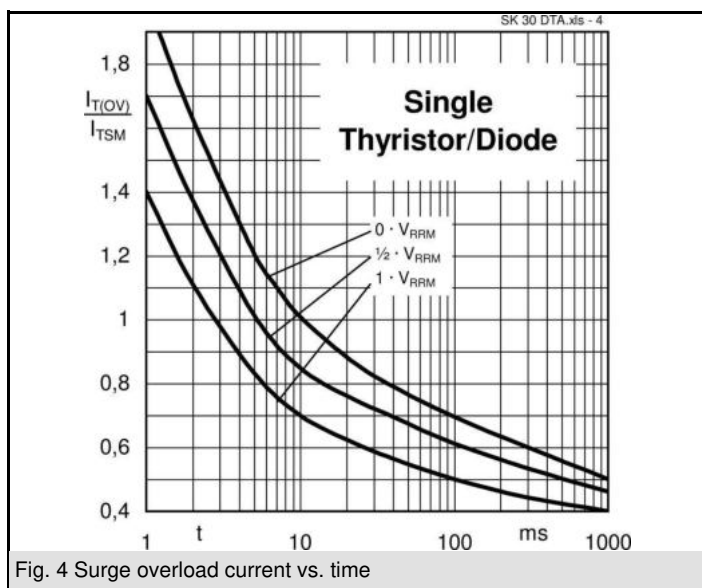
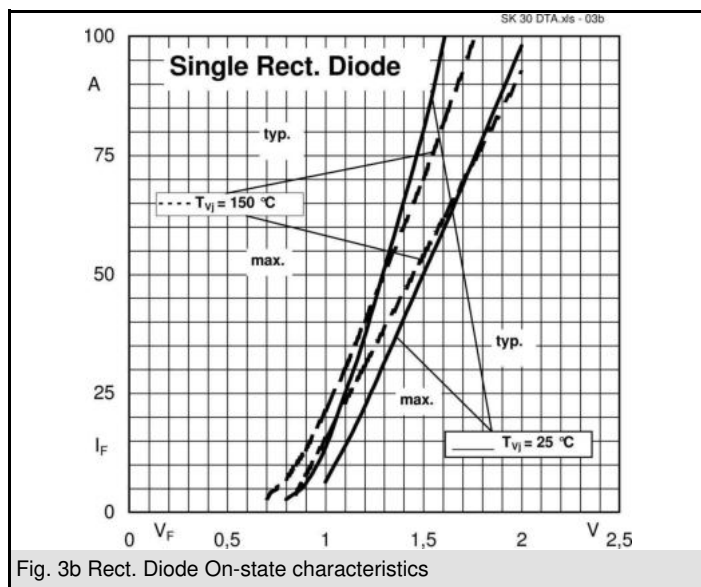
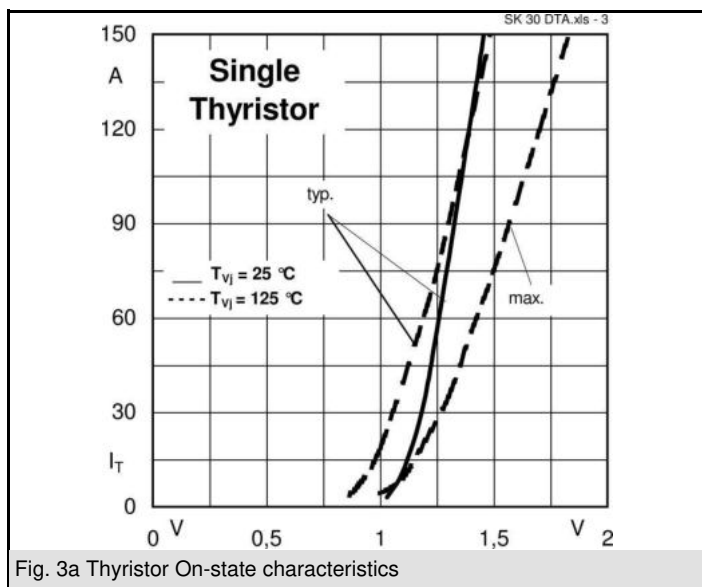
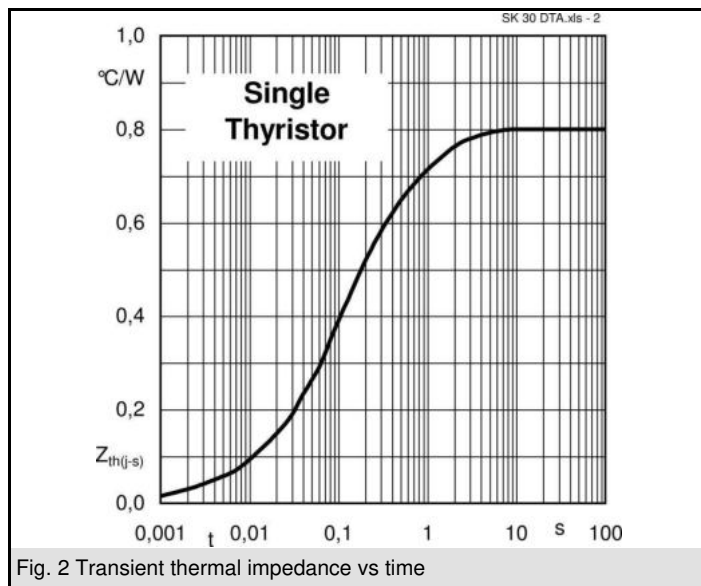
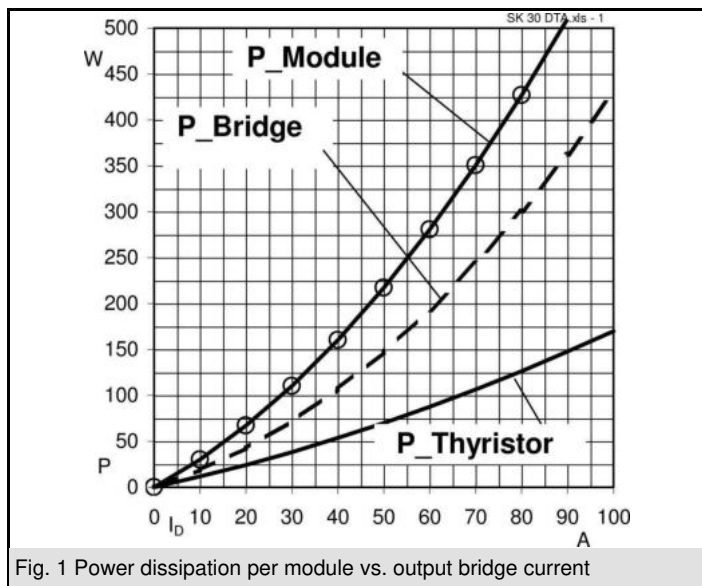
- Soft starters
- Light control
- Temperature control

| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_D = 25$ A<br>( $T_s = 80$ °C) |
|----------------|-------------------------|----------------------------------|
| 900            | 800                     | SK 30 DTA 08                     |
| 1300           | 1200                    | SK 30 DTA 12                     |
| 1700           | 1600                    | SK 30 DTA 16                     |

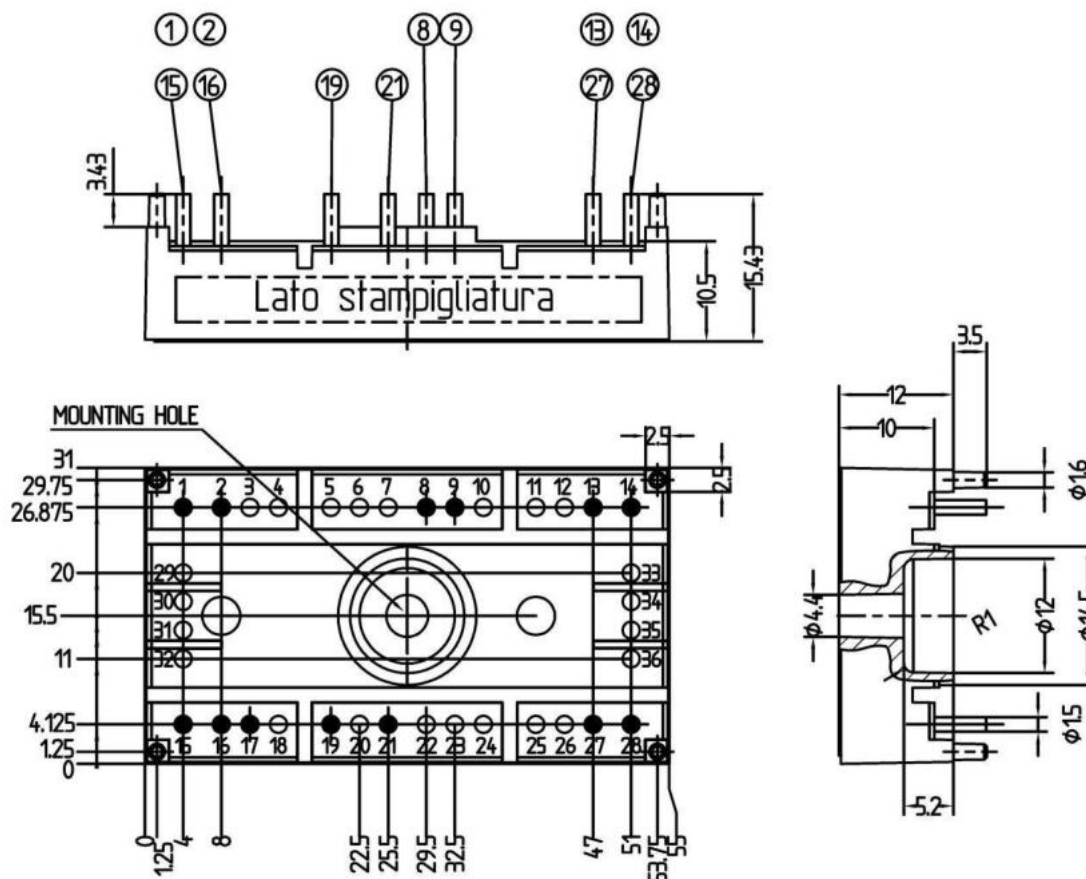
| Characteristics <span style="float: right;"><math>T_s = 25</math> °C unless otherwise specified</span> |                                                            |                |       |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------|-------|
| Symbol                                                                                                 | Conditions                                                 | Values         | Units |
| $I_D$                                                                                                  | $T_s = 80$ °C; Ind. load                                   | 25             | A     |
| $I_{TAV}$                                                                                              | sin. 180°; $T_s = 25$ (80) °C per thyristor                | 31 (19)        | A     |
| $I_{FAV}$                                                                                              | sin. 180°; $T_s = 25$ (80) °C per diode                    | 37 (25)        | A     |
| $I_{TSM}/I_{FSM}$                                                                                      | $T_{vj} = 25$ (125) °C; 10 ms                              | 1000 (900)     | A     |
| $I^2t$                                                                                                 | $T_{vj} = 25$ (125) °C; 8,3 ... 10 ms                      | 5000 (4000)    | A²s   |
| $T_{stg}$                                                                                              |                                                            | -40,...+125    | °C    |
| $T_{solder}$                                                                                           | terminals, 10 s                                            | 260            | °C    |
| <b>Thyristor</b>                                                                                       |                                                            |                |       |
| $(dv/dt)_{cr}$                                                                                         | $T_{vj} = 125$ °C                                          | 1000           | V/μs  |
| $(di/dt)_{cr}$                                                                                         | $T_{vj} = 125$ °C; $f = 50 \dots 60$ Hz                    | 50             | A/μs  |
| $t_q$                                                                                                  | $T_{vj} = 125$ °C; typ.                                    | 80             | μs    |
| $I_H$                                                                                                  | $T_{vj} = 25$ °C; typ. / max.                              | 100 / 200      | mA    |
| $I_L$                                                                                                  | $T_{vj} = 25$ °C; $R_G = 33 \Omega$ ; typ. / max.          | 200 / 400      | mA    |
| $V_T$                                                                                                  | $T_{vj} = 25$ °C; ( $I_T = 120$ A); max.                   | 1,8            | V     |
| $V_{T(TO)}$                                                                                            | $T_{vj} = 125$ °C                                          | max. 1         | V     |
| $r_T$                                                                                                  | $T_{vj} = 125$ °C                                          | max. 6         | mΩ    |
| $I_{DD}, I_{RD}$                                                                                       | $T_{vj} = 125$ °C; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$ | max. 8         | mA    |
| $R_{th(j-s)}$                                                                                          | Cont. per thyristor                                        | 0,8            | K/W   |
| $T_{vj}$                                                                                               |                                                            | - 40 ... + 125 | °C    |
| $V_{GT}$                                                                                               | $T_{vj} = 25$ °C; d.c.                                     | 2              | V     |
| $I_{GT}$                                                                                               | $T_{vj} = 25$ °C; d.c.                                     | 100            | mA    |
| $V_{GD}$                                                                                               | $T_{vj} = 125$ °C; d.c.                                    | 0,25           | V     |
| $I_{GD}$                                                                                               | $T_{vj} = 125$ °C; d.c.                                    | 5              | mA    |
| <b>Diode</b>                                                                                           |                                                            |                |       |
| $V_F$                                                                                                  | $T_{vj} = 25$ °C; ( $I_F = 25$ A); max.                    | 1,25           | V     |
| $V_{(TO)}$                                                                                             | $T_{vj} = 150$ °C                                          | 0,8            | V     |
| $r_T$                                                                                                  | $T_{vj} = 150$ °C                                          | 4              | mΩ    |
| $I_{RD}$                                                                                               | $T_{vj} = 150$ °C; $V_{RD} = V_{RRM}$                      | 4              | mA    |
| $R_{th(j-s)}$                                                                                          | per diode                                                  | 1,7            | K/W   |
| $T_{vj}$                                                                                               |                                                            | -40...+150     | °C    |
| <b>Mechanical data</b>                                                                                 |                                                            |                |       |
| $V_{isol}$                                                                                             | a. c. 50 Hz; r.m.s.; 1 s / 1 min                           | 3000 (2500)    | V     |
| $M_1$                                                                                                  | mounting torque                                            | 2,5            | Nm    |
| w                                                                                                      |                                                            | 30             | g     |
| Case                                                                                                   | SEMITOP® 3                                                 | T 45           |       |



DTA

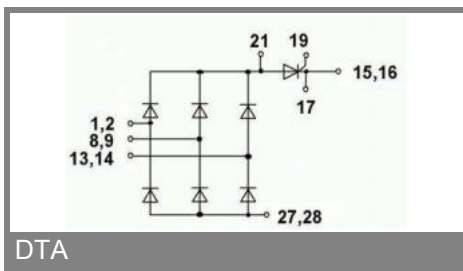


Dimensions in mm



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

Case T45 (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.