



SEMIPONT® 1

## Controllable Bridge Rectifiers

SKBT 28

### Features

- Sturdy isolated metal baseplate
- Fast-on terminals with solder tips
- Suitable for wave soldering
- High surge current rating
- UL recognized, file no. E 63 532

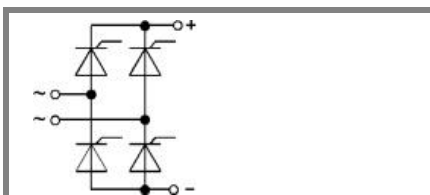
### Typical Applications

- Controllable single phase rectifier
- DC power supplies
- DC motor controllers
- DC motor field controllers

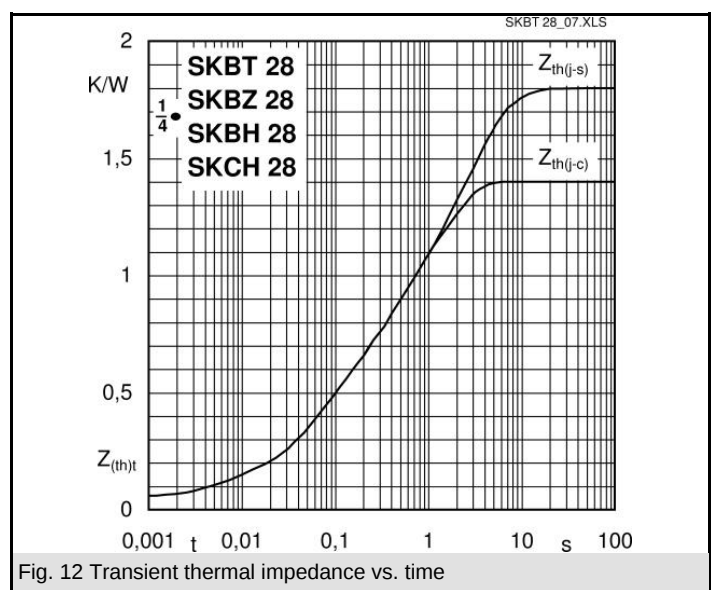
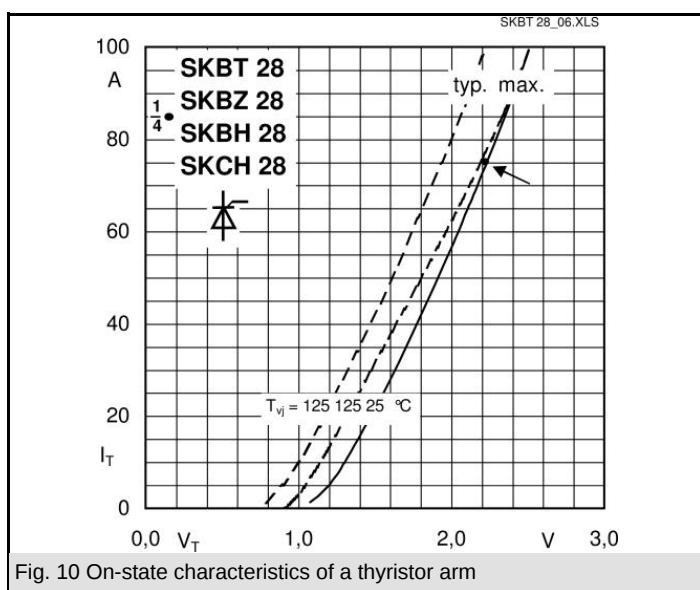
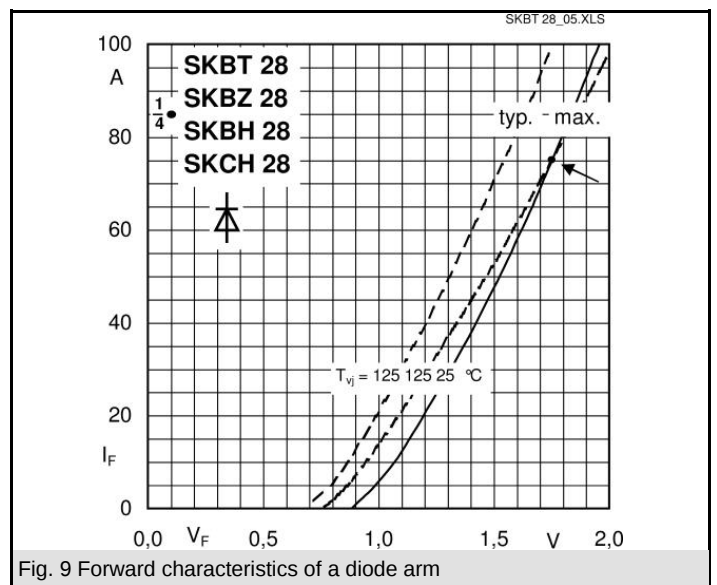
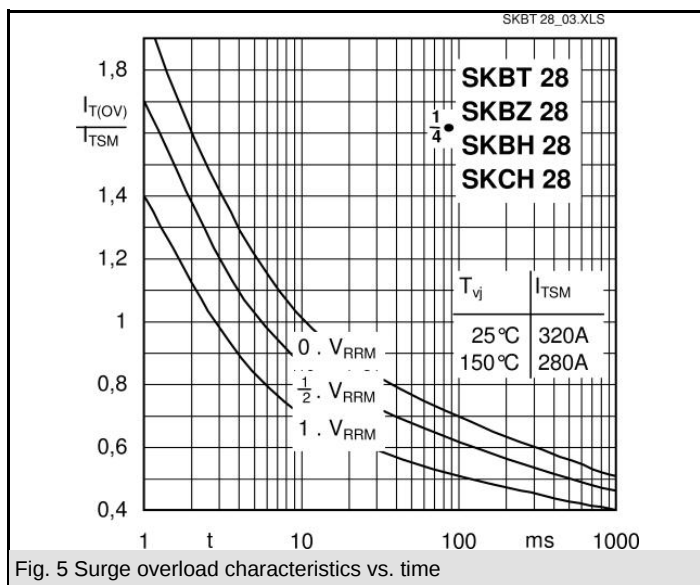
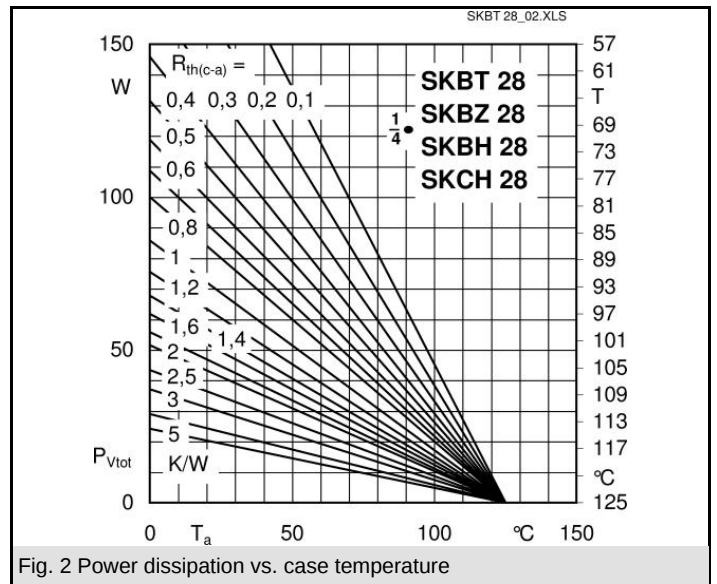
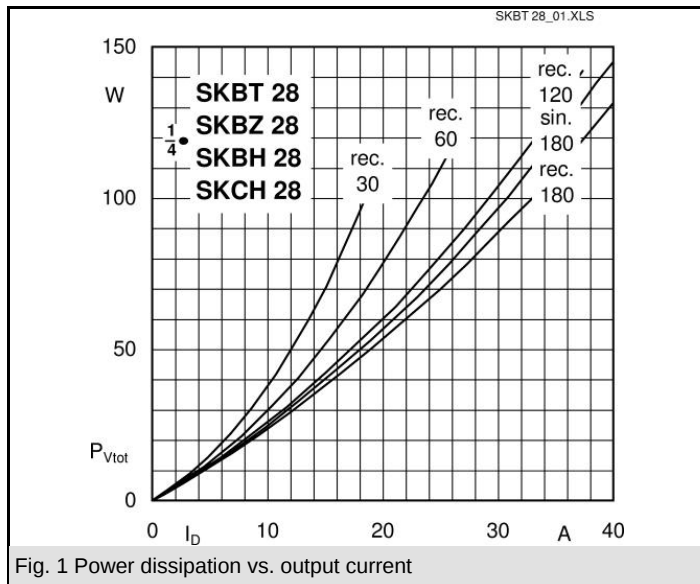
- 1) Painted metal shield of minimum 250 x 250 x 1 mm:  $R_{th(c-a)} = 1,85 \text{ K/W}$
- 2) Freely suspended or mounted on insulator

| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_D = 28 \text{ A (full conduction)}$<br>( $T_c = 89^\circ \text{C}$ ) |
|----------------|-------------------------|-------------------------------------------------------------------------|
| 600            | 600                     | SKBT 28/06                                                              |
| 800            | 800                     | SKBT 28/08                                                              |
| 1200           | 1200                    | SKBT 28/12                                                              |
| 1400           | 1400                    | SKBT 28/14                                                              |

| Symbol                                                                   | Conditions                                                                                                                                                                                                                     | Values                                                       | Units                                |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------|
| $I_D$                                                                    | $T_c = 85^\circ \text{C}$<br>$T_a = 45^\circ \text{C}$ ; chassis 1)<br>$T_a = 45^\circ \text{C}$ ; P5A/100<br>$T_a = 45^\circ \text{C}$ ; P13A/125<br>$T_a = 45^\circ \text{C}$ ; P1A/120                                      | 30<br>13<br>15<br>16<br>23                                   | A<br>A<br>A<br>A<br>A                |
| $I_{TSM}, I_{FSM}$                                                       | $T_{vj} = 25^\circ \text{C}$ ; 10 ms<br>$T_{vj} = 125^\circ \text{C}$ ; 10 ms                                                                                                                                                  | 320<br>280                                                   | A<br>A                               |
| $i^2t$                                                                   | $T_{vj} = 25^\circ \text{C}$ ; 8,3 ... 10 ms<br>$T_{vj} = 125^\circ \text{C}$ ; 8,3 ... 10 ms                                                                                                                                  | 510<br>390                                                   | A <sup>2</sup> s<br>A <sup>2</sup> s |
| $V_T$<br>$V_{T(TO)}$<br>$r_T$                                            | $T_{vj} = 25^\circ \text{C}$ ; $I_T = 75 \text{ A}$<br>$T_{vj} = 125^\circ \text{C}$ ;<br>$T_{vj} = 125^\circ \text{C}$                                                                                                        | max. 2,25<br>max. 1<br>max. 16                               | V<br>V<br>mΩ                         |
| $I_{DD}, I_{RD}$                                                         | $T_{vj} = 125^\circ \text{C}$ ; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$                                                                                                                                                        | max. 8                                                       | mA                                   |
| $t_{gd}$<br>$t_{gr}$                                                     | $T_{vj} = 25^\circ \text{C}$ ; $I_G = 1 \text{ A}$ ; $di_G/dt = 1 \text{ A/}\mu\text{s}$<br>$V_D = 0,67 \cdot V_{DRM}$                                                                                                         | 1<br>1                                                       | μs<br>μs                             |
| $(dv/dt)_{cr}$<br>$(di/dt)_{cr}$<br>$t_q$<br>$I_H$<br>$I_L$              | $T_{vj} = 125^\circ \text{C}$<br>$T_{vj} = 125^\circ \text{C}$ ; $f = 50 \text{ Hz}$<br>$T_{vj} = 125^\circ \text{C}$ ; typ.<br>$T_{vj} = 25^\circ \text{C}$ ; typ. / max.<br>$T_{vj} = 25^\circ \text{C}$ ; $R_G = 33 \Omega$ | max. 500<br>max. 50<br>80<br>50 / 150<br>100 / 300           | V/μs<br>A/μs<br>μs<br>mA<br>mA       |
| $V_{GT}$<br>$I_{GT}$<br>$V_{GD}$<br>$I_{GD}$                             | $T_{vj} = 25^\circ \text{C}$ ; d.c.<br>$T_{vj} = 25^\circ \text{C}$ ; d.c.<br>$T_{vj} = 125^\circ \text{C}$ ; d.c.<br>$T_{vj} = 125^\circ \text{C}$ ; d.c.                                                                     | min. 2<br>min. 100<br>max. 0,25<br>max. 3                    | V<br>mA<br>V<br>mA                   |
| $R_{th(j-c)}$<br>$R_{th(c-s)}$<br>$R_{th(j-a)}$<br>$T_{vj}$<br>$T_{stg}$ | per thyristor / diode<br>total<br>total<br>total 2)<br>$T_{vj}$<br>$T_{stg}$                                                                                                                                                   | 1,8<br>0,45<br>0,1<br>15<br>- 40 ... + 125<br>- 40 ... + 125 | K/W<br>K/W<br>K/W<br>K/W<br>°C<br>°C |
| $V_{isol}$<br>$M_s$<br>$M_t$<br>m                                        | a. c. 50 Hz; r.m.s.; 1 s / 1 min.<br>case to heatsink                                                                                                                                                                          | 3600 ( 3000 )<br>2<br>n.a.<br>66                             | V<br>Nm<br>Nm<br>g                   |
| Case                                                                     | SKBT                                                                                                                                                                                                                           | G 22                                                         |                                      |



SKBT



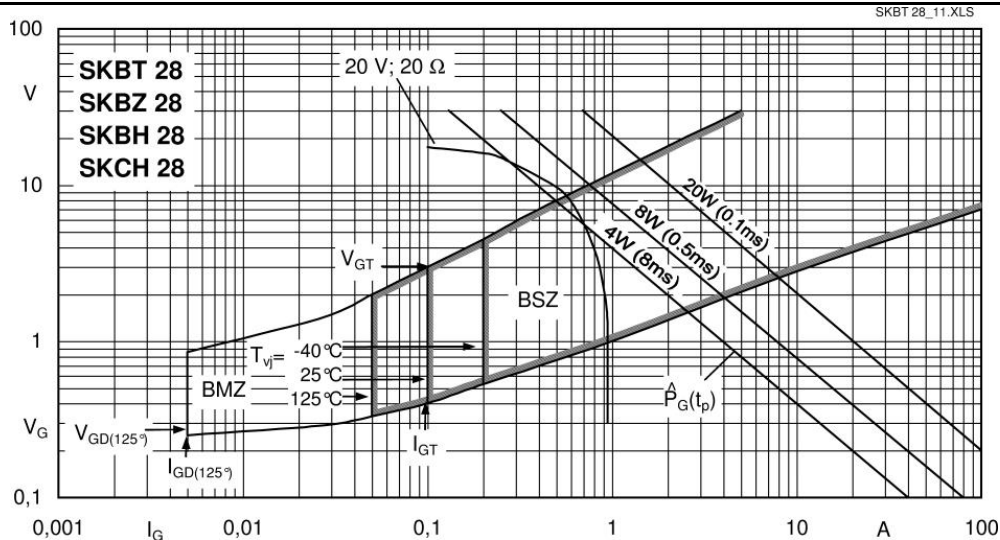
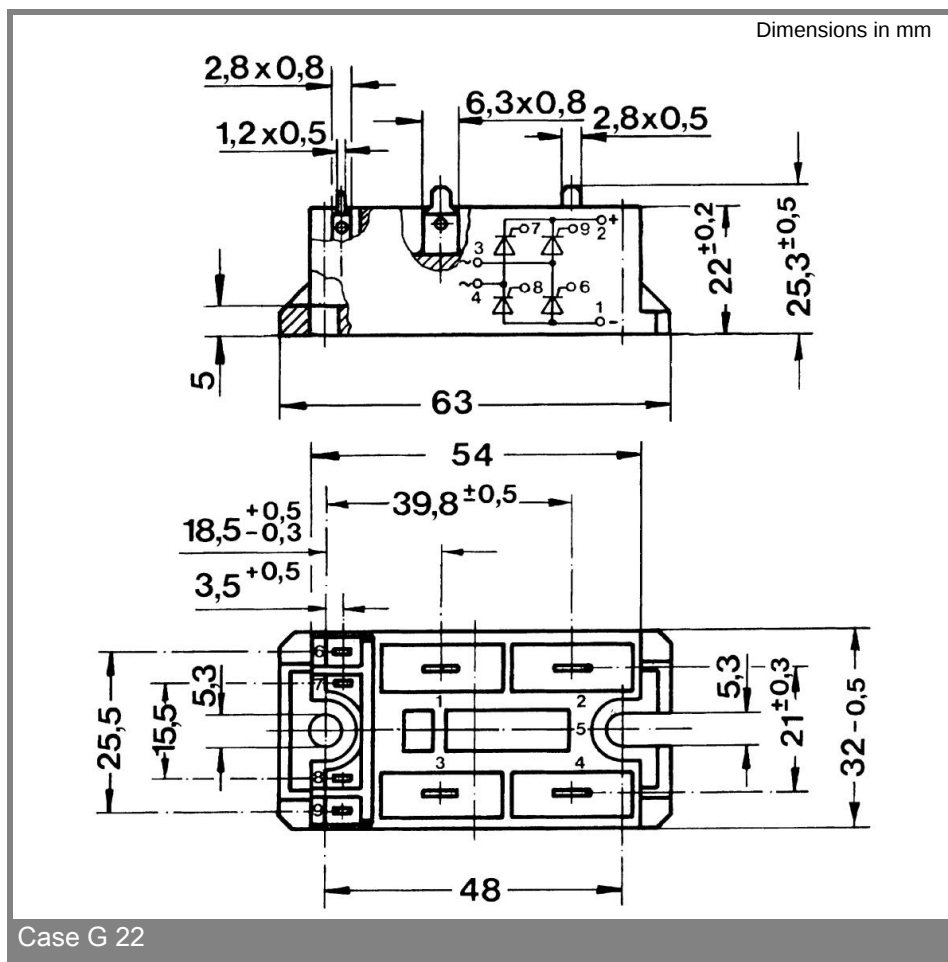


Fig. 11 Gate characteristics of a thyristor device



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