



## Controllable Bridge Rectifiers

### SKB 33

#### Features

- Half controlled, single phase rectifier with freewheeling diode
- Isolated metal case with screw terminals
- Blocking voltage up to 1200 V
- High surge currents
- Easy chassis mounting

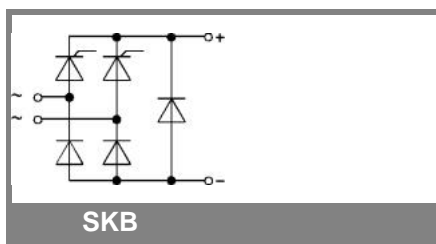
#### Typical Applications

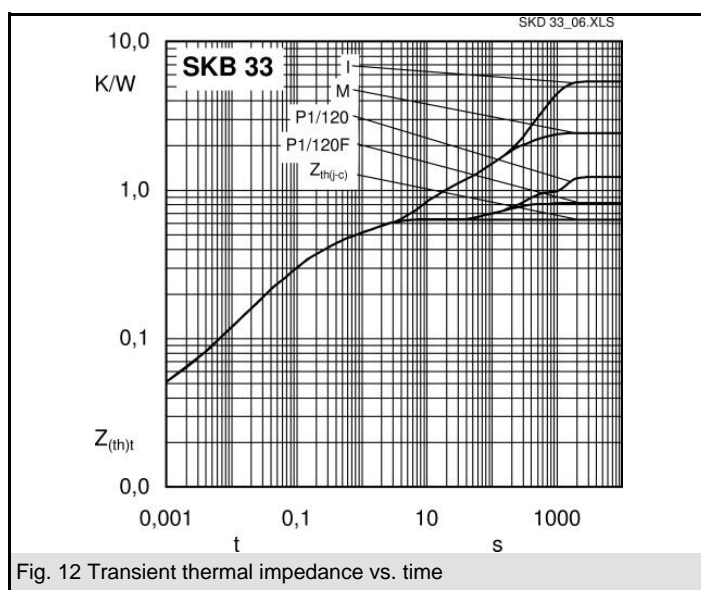
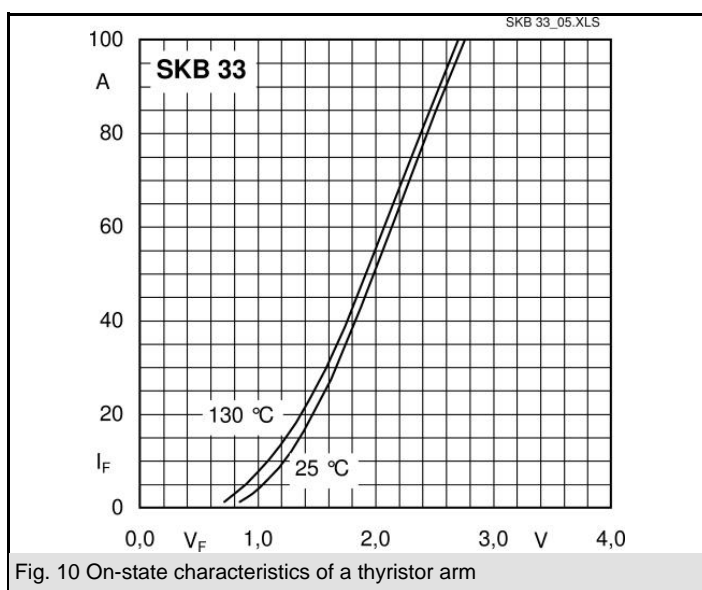
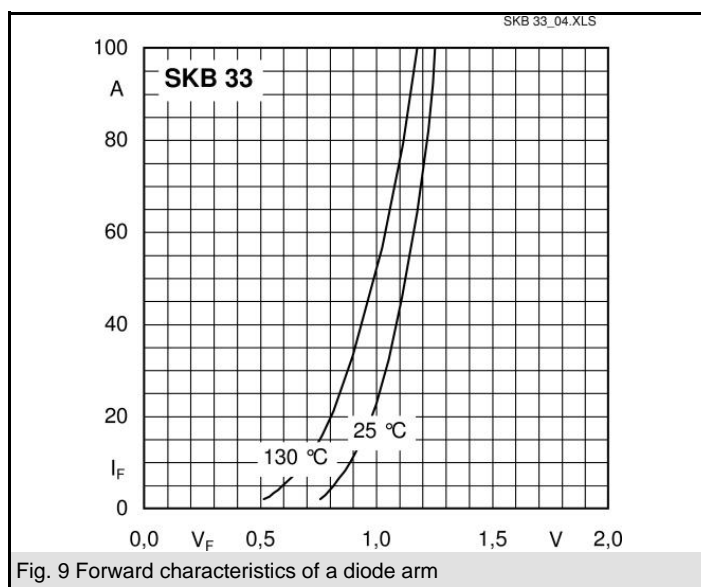
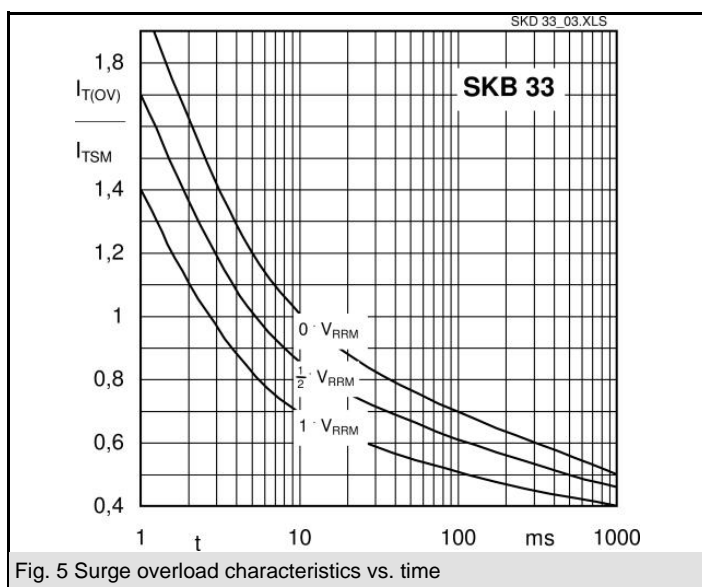
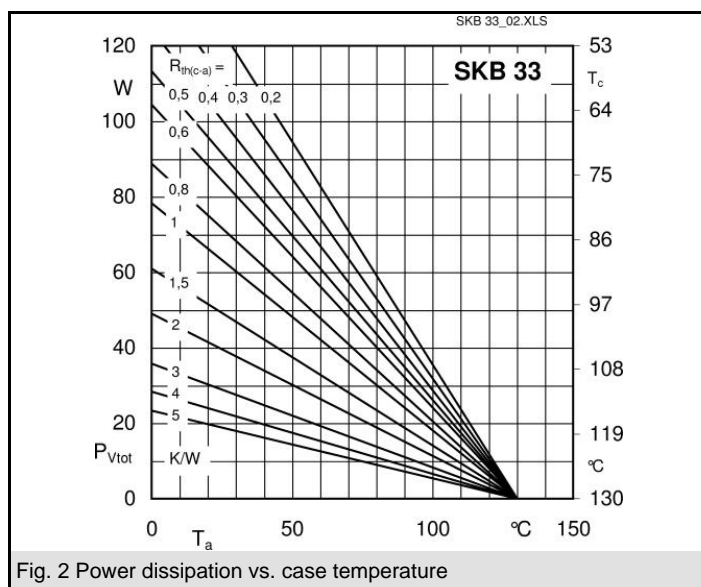
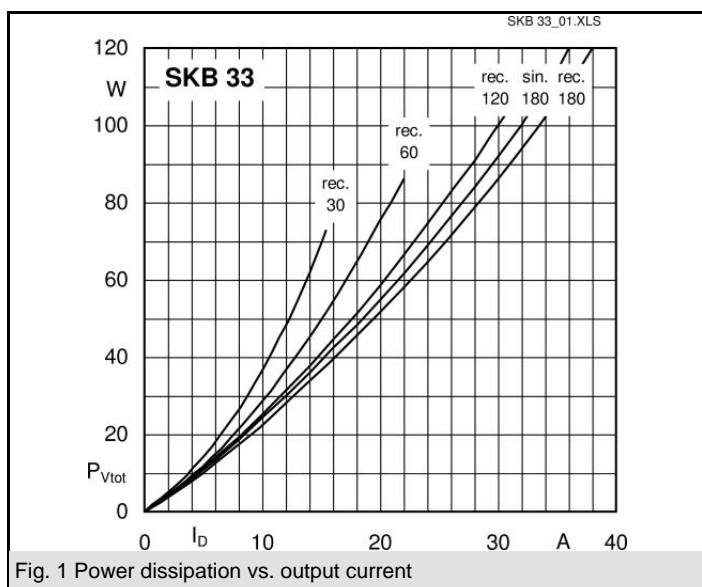
- Power supplies for electronic equipment
- DC motors
- Field rectifiers for DC motors
- Battery charger rectifiers

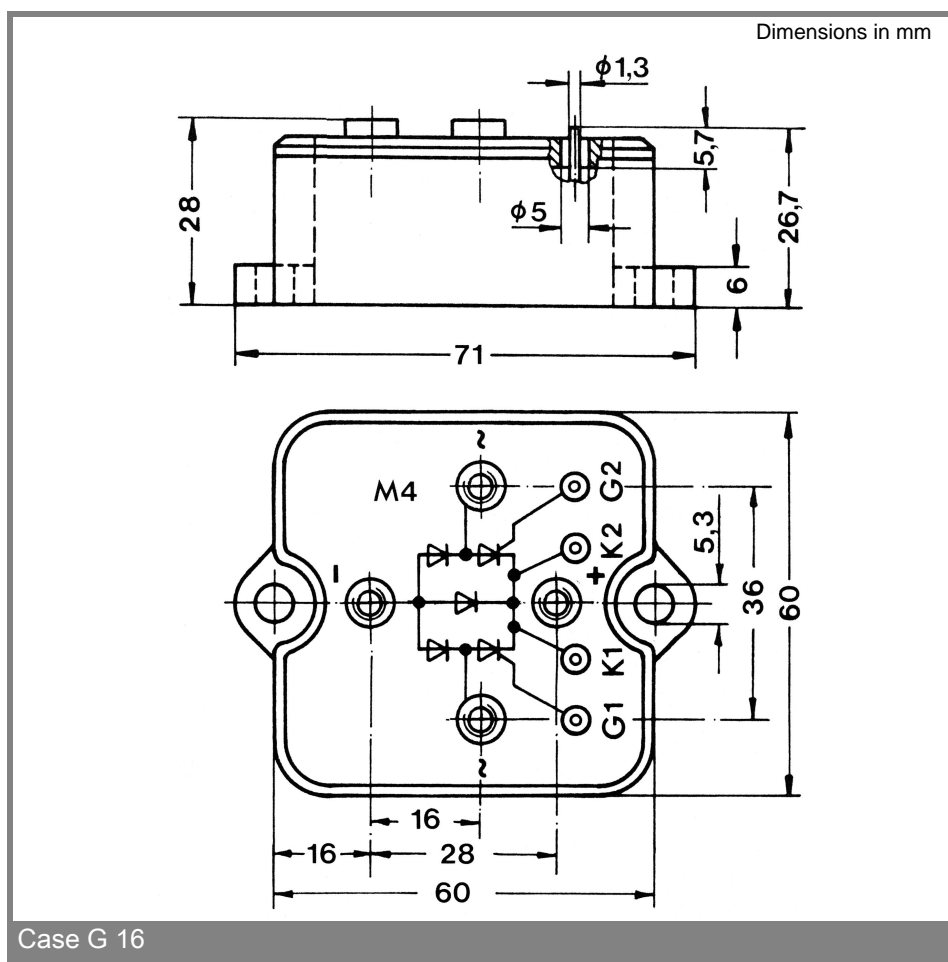
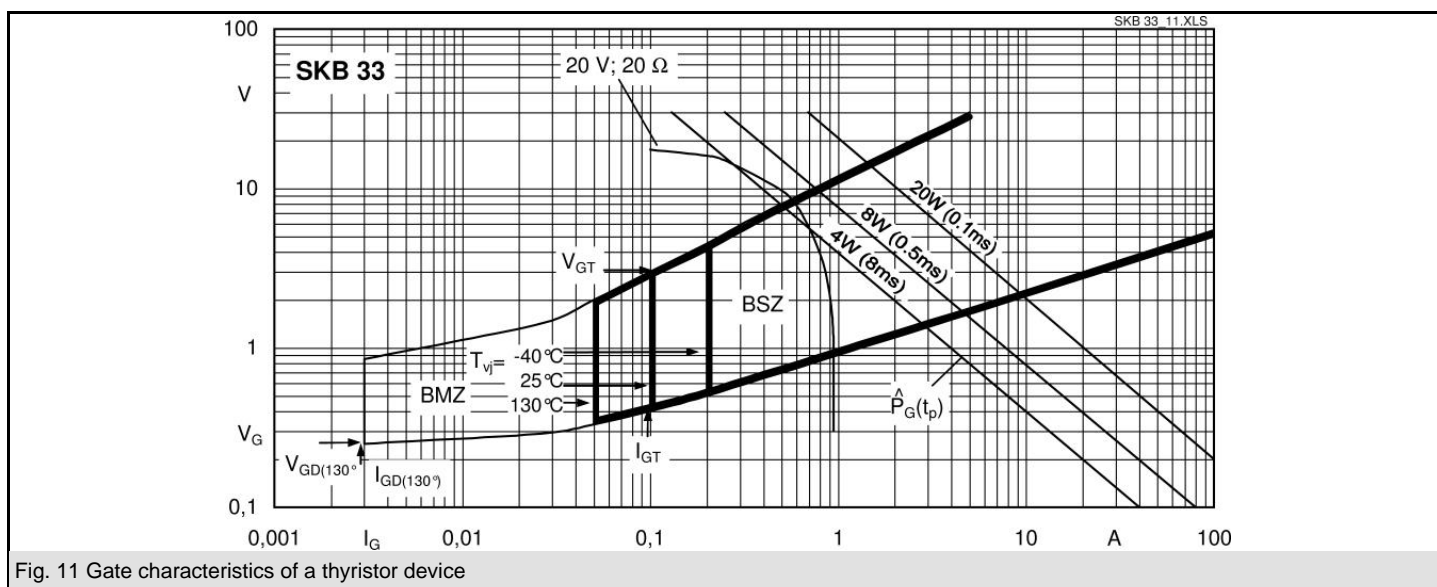
- 1) Freely suspended or mounted on an insulator
- 2) Mounted on a painted metal sheet of min. 250 x 250 x 1 mm

| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_D = 33 \text{ A}$ (full conduction)<br>( $T_c = 62^\circ\text{C}$ ) |
|----------------|-------------------------|--|
| 300            | 200                     | SKB 33/02  |
| 500            | 400                     | SKB 33/04  |
| 700            | 600                     | SKB 33/06  |
| 900            | 800                     | SKB 33/08  |
| 1100           | 1000                    | SKB 33/10  |
| 1300           | 1200                    | SKB 33/12  |

| Symbol             | Conditions  | Values         | Units            |
|--------------------|---|----------------|------------------|
| $I_D$              | $T_a = 45^\circ\text{C}$<br>isolated <sup>1)</sup>                                      | 6,5            | A                |
|                    | $T_a = 45^\circ\text{C}$ ; chassis <sup>2)</sup>  | 14             | A                |
|                    | $T_a = 45^\circ\text{C}$ ; P1A/120  | 24             | A                |
|                    | $T_a = 35^\circ\text{C}$ ; P1A/120 F  | 32             | A                |
| $I_{TSM}, I_{FSM}$ | $T_{vj} = 25^\circ\text{C}$ ; 10 ms   | 370            | A                |
| $i^2t$             | $T_{vj} = 130^\circ\text{C}$ ; 10 ms  | 340            | A                |
|                    | $T_{vj} = 25^\circ\text{C}$ ; 8,3 ... 10 ms   | 680            | A <sup>2</sup> s |
|                    | $T_{vj} = 130^\circ\text{C}$ ; 8,3 ... 10 ms  | 580            | A <sup>2</sup> s |
| $V_T$              | $T_{vj} = 25^\circ\text{C}$ ; $I_T = 75 \text{ A}$                                      | max. 2,4       | V                |
| $V_{T(TO)}$        | $T_{vj} = 130^\circ\text{C}$  | max. 1         | V                |
| $r_T$              | $T_{vj} = 130^\circ\text{C}$  | max. 15        | m $\Omega$       |
| $I_{DD}, I_{RD}$   | $T_{vj} = 130^\circ\text{C}$ ; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$                  | max. 10        | mA               |
| $t_{gd}$           | $T_{vj} = 25^\circ\text{C}$ ; $I_G = 1 \text{ A}$ ; $di_G/dt = 1 \text{ A}/\mu\text{s}$ | 1              | $\mu\text{s}$    |
| $t_{gr}$           | $V_D = 0,67 \cdot V_{DRM}$  | 1              | $\mu\text{s}$    |
| $(dv/dt)_{cr}$     | $T_{vj} = 130^\circ\text{C}$  | max. 200       | V/ $\mu\text{s}$ |
| $(di/dt)_{cr}$     | $T_{vj} = 130^\circ\text{C}$ ; $f = 50 \text{ Hz}$                                      | max. 50        | A/ $\mu\text{s}$ |
| $t_q$              | $T_{vj} = 130^\circ\text{C}$ ; typ.   | 80             | $\mu\text{s}$    |
| $I_H$              | $T_{vj} = 25^\circ\text{C}$ ; typ. / max.   | 20 / 200       | mA               |
| $I_L$              | $T_{vj} = 25^\circ\text{C}$ ; $R_G = 33 \Omega$ ; typ. / max.                           | 80 / 400       | mA               |
| $V_{GT}$           | $T_{vj} = 25^\circ\text{C}$ ; d.c.  | min. 3         | V                |
| $I_{GT}$           | $T_{vj} = 25^\circ\text{C}$ ; d.c.  | min. 100       | mA               |
| $V_{GD}$           | $T_{vj} = 130^\circ\text{C}$ ; d.c.   | max. 0,25      | V                |
| $I_{GD}$           | $T_{vj} = 130^\circ\text{C}$ ; d.c.   | max. 3         | mA               |
| $R_{th(j-c)}$      | per thyristor / diode   | 2,6            | K/W              |
|                    | total   | 0,65           | K/W              |
| $R_{th(c-s)}$      | total   | 0,06           | K/W              |
| $T_{vj}$           |   | - 40 ... + 130 | $^\circ\text{C}$ |
| $T_{stg}$          |   | - 55 ... + 150 | $^\circ\text{C}$ |
| $V_{isol}$         | a. c. 50 Hz; r.m.s.; 1 s / 1 min.   | 3000 ( 2500 )  | V                |
| $M_s$              | to heatsink   | $5 \pm 15 \%$  | Nm               |
| $M_t$              | to terminals  | $3 \pm 15 \%$  | Nm               |
| m                  |   | 250            | g                |
| Case               |   | G 16           |                  |







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