



SEMIPONT® 2

## Controllable Bridge Rectifiers

### SKDH 100

#### Features

- Fully controlled three phase bridge rectifier
- Robust plastic case with screw terminals
- Large, isolated base plate
- Blocking voltage to 1400V
- High surge currents
- Easy chassis mounting
- UL recognized, file no. E 63 532

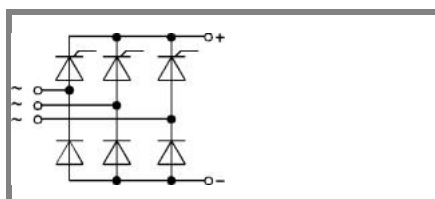
#### Typical Applications

- For DC drives with a fixed direction of rotation
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

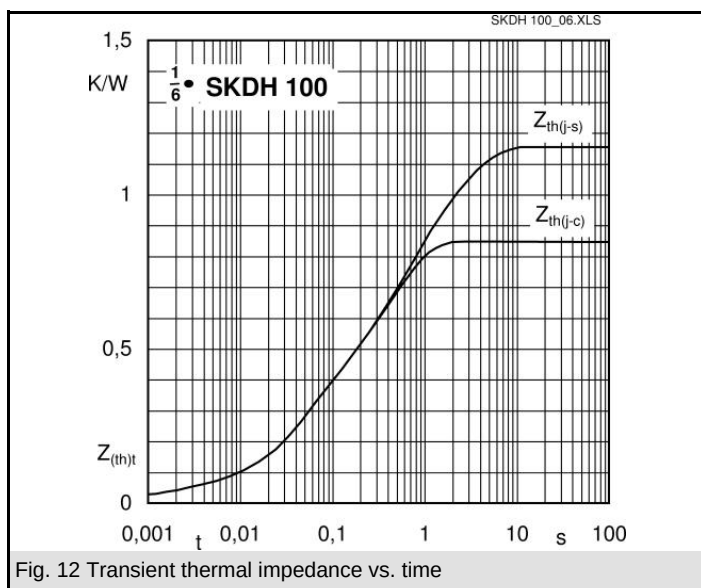
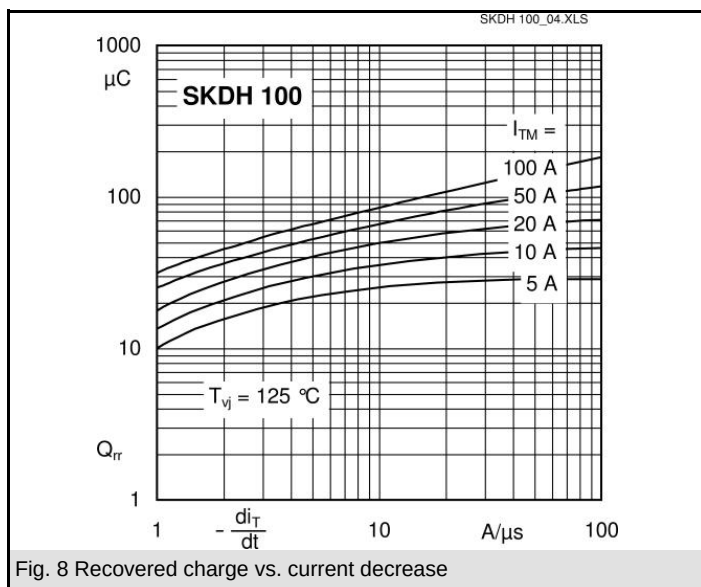
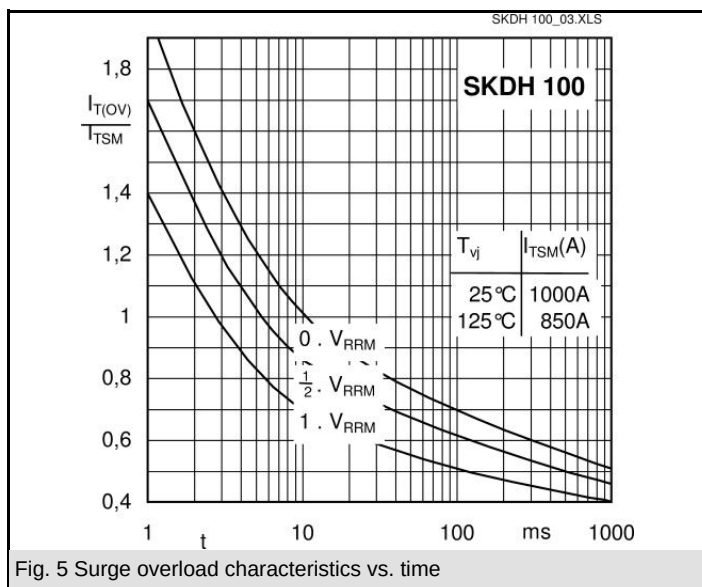
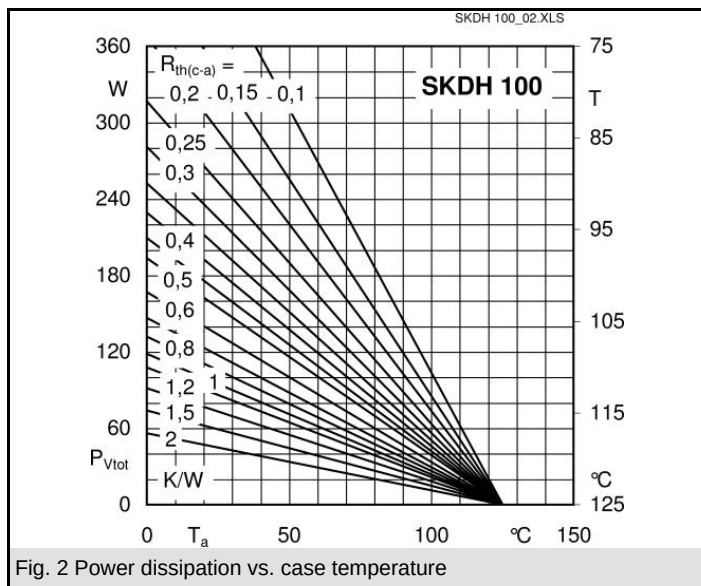
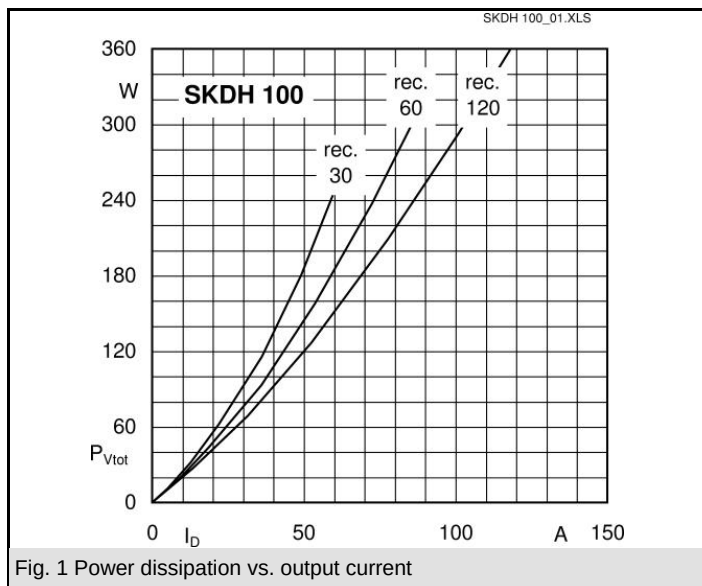
1) Painted metal shield of minimum 250 x 250 x 1 mm:  $R_{th(c-a)} = 1,8 \text{ K/W}$

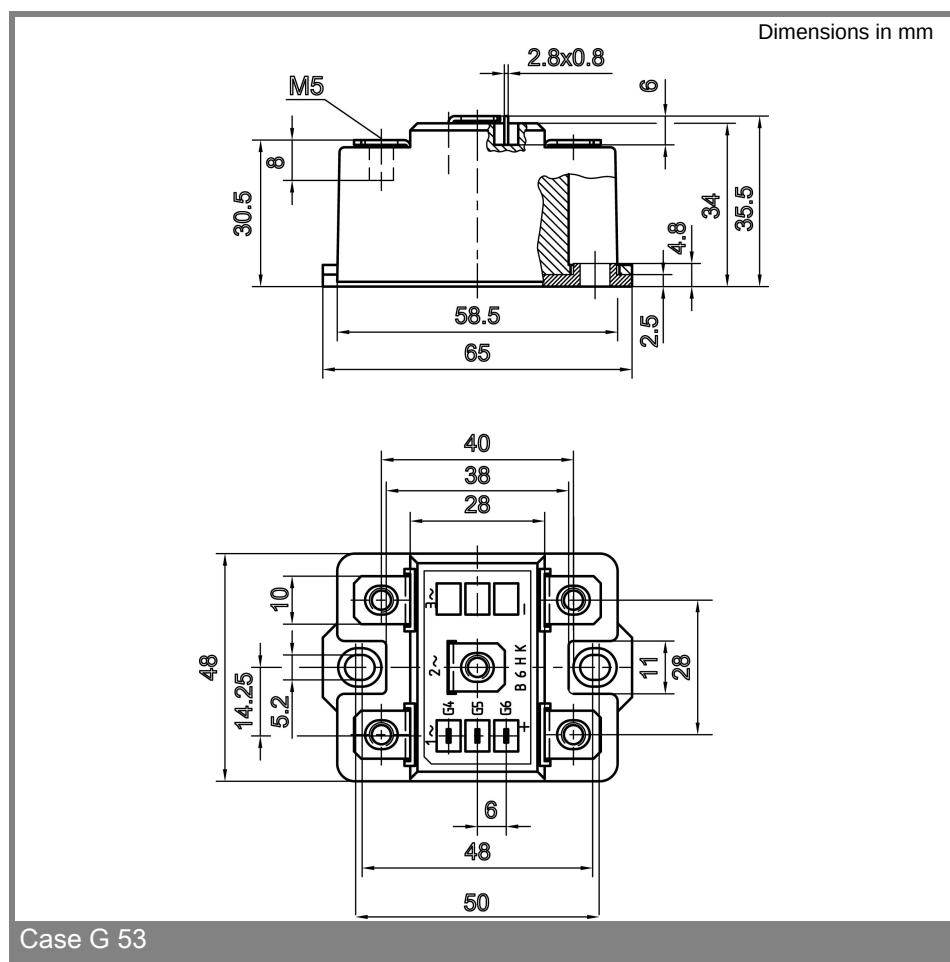
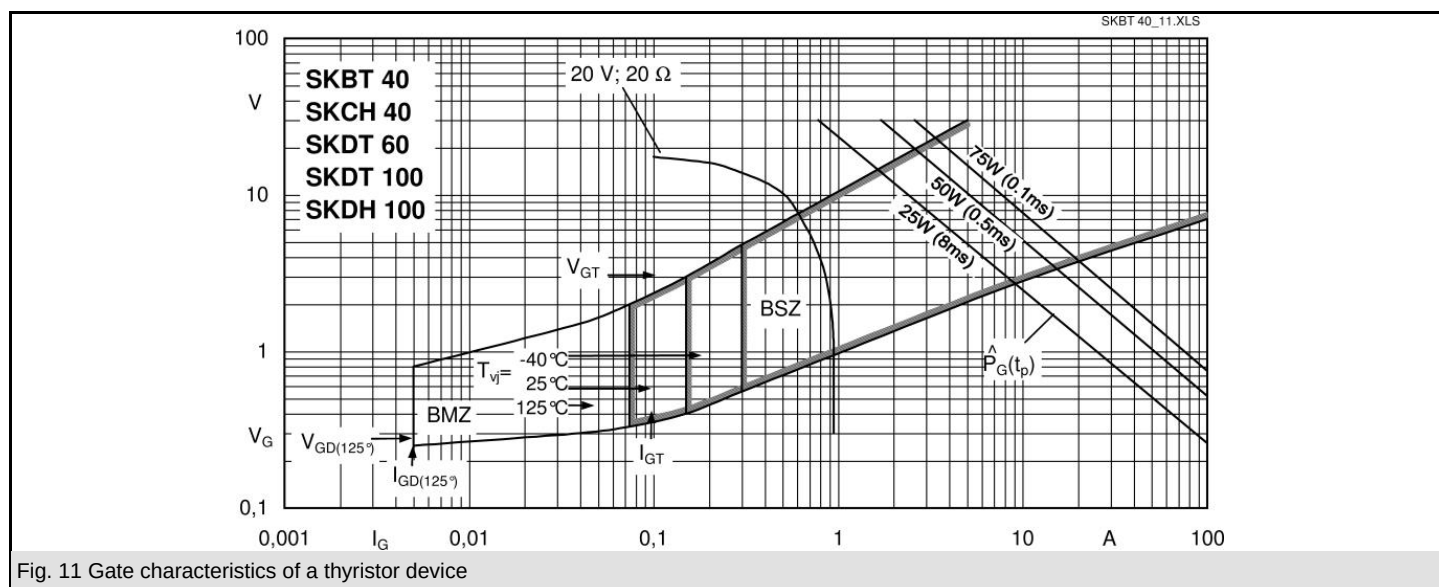
| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_D = 100 \text{ A}$ (full conduction)<br>( $T_c = 84^\circ \text{C}$ ) |
|----------------|-------------------------|--------------------------------------------------------------------------|
| 800            | 800                     | SKDH 100/08                                                              |
| 1200           | 1200                    | SKDH 100/12                                                              |
| 1400           | 1400                    | SKDH 100/14                                                              |

| Symbol             | Conditions                                                                                                                                         | Values               | Units                                |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------|
| $I_D$              | $T_c = 85^\circ \text{C}$<br>$T_a = 45^\circ \text{C}$ ; chassis 1)<br>$T_a = 45^\circ \text{C}$ ; P13A/125<br>$T_a = 45^\circ \text{C}$ ; P1A/120 | 98<br>20<br>25<br>45 | 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                                                                      | 1000<br>850          | 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                                                      | 5000<br>3600         | A <sup>2</sup> s<br>A <sup>2</sup> s |
| $V_T$              | $T_{vj} = 25^\circ \text{C}$ ; $I_T = 200 \text{ A}$                                                                                               | max. 1,95            | V                                    |
| $V_{T(TO)}$        | $T_{vj} = 125^\circ \text{C}$                                                                                                                      | max. 1               | V                                    |
| $r_T$              | $T_{vj} = 125^\circ \text{C}$                                                                                                                      | max. 4,5             | mΩ                                   |
| $I_{DD}, I_{RD}$   | $T_{vj} = 125^\circ \text{C}$ ; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$                                                                            | max. 15              | mA                                   |
| $t_{gd}$           | $T_{vj} = 25^\circ \text{C}$ ; $I_G = 1 \text{ A}$ ; $di_G/dt = 1 \text{ A/μs}$                                                                    | 1                    | μs                                   |
| $t_{gr}$           | $V_D = 0,67 \cdot V_{DRM}$                                                                                                                         | 1                    | μs                                   |
| $(dv/dt)_{cr}$     | $T_{vj} = 125^\circ \text{C}$                                                                                                                      | max. 500             | V/μs                                 |
| $(di/dt)_{cr}$     | $T_{vj} = 125^\circ \text{C}$ ; $f = 50 \text{ Hz}$                                                                                                | max. 50              | A/μs                                 |
| $t_q$              | $T_{vj} = 125^\circ \text{C}$ ; typ.                                                                                                               | 80                   | μs                                   |
| $I_H$              | $T_{vj} = 25^\circ \text{C}$ ; typ. / max.                                                                                                         | 100 / 200            | mA                                   |
| $I_L$              | $T_{vj} = 25^\circ \text{C}$ ; $R_G = 33 \Omega$                                                                                                   | 250 / 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. 150             | 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. 5               | mA                                   |
| $R_{th(j-c)}$      | per thyristor / diode                                                                                                                              | 0,85                 | K/W                                  |
|                    | total                                                                                                                                              | 0,141                | K/W                                  |
| $R_{th(c-s)}$      | total                                                                                                                                              | 0,05                 | K/W                                  |
| $T_{vj}$           |                                                                                                                                                    | - 40 ... + 125       | °C                                   |
| $T_{stg}$          |                                                                                                                                                    | - 40 ... + 125       | °C                                   |
| $V_{isol}$         | a. c. 50 Hz; r.m.s.; 1 s / 1 min.                                                                                                                  | 3600 ( 3000 )        | V                                    |
| $M_s$              | to heatsink                                                                                                                                        | 5                    | Nm                                   |
| $M_t$              | to terminals                                                                                                                                       | 3                    | Nm                                   |
| m                  |                                                                                                                                                    | 165                  | g                                    |
| Case               | SKDH                                                                                                                                               | G 53                 |                                      |



SKDH





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