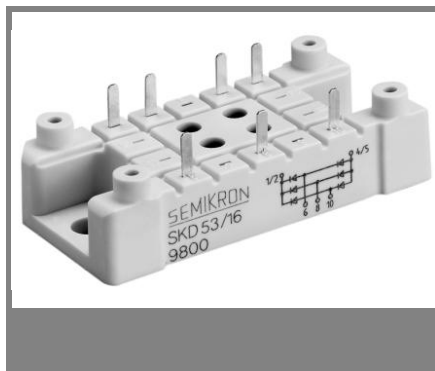




## Power Bridge Rectifiers

### SKD 83

#### Features

- Glass passivated silicon chips
- Low thermal impedance through use of direct copper bonded aluminum substrate (DCB) base plate
- Blocking voltage up to 1800 V
- Suitable for PCB mounting and wave soldering
- For applications with high vibrations we recommend to fasten the bridge to the pcb with 4 selftapping screw

#### Typical Applications

- Three phase rectifiers for power supplies
- Input rectifiers for variable frequency drives
- Rectifiers for DC motor field supplies
- Battery charger rectifiers

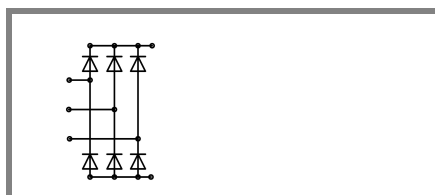
1) Freely suspended or mounted on an insulator

2) Mounted on a painted metal sheet of min. 250 x 250 x 1 mm

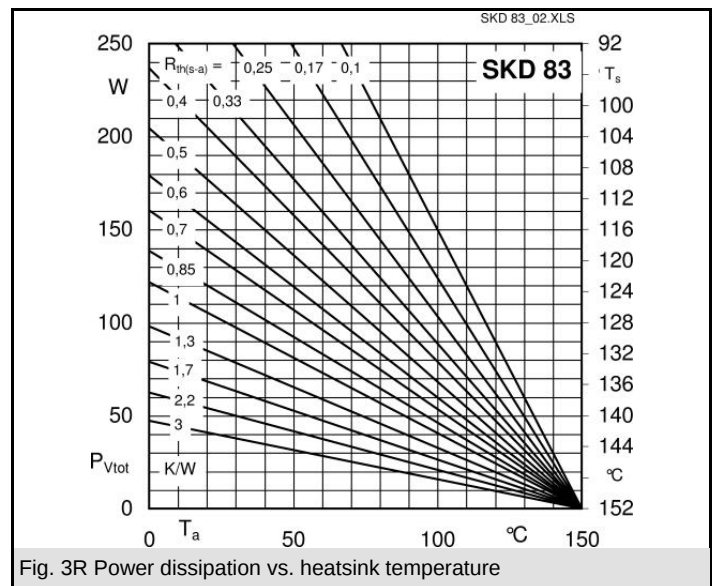
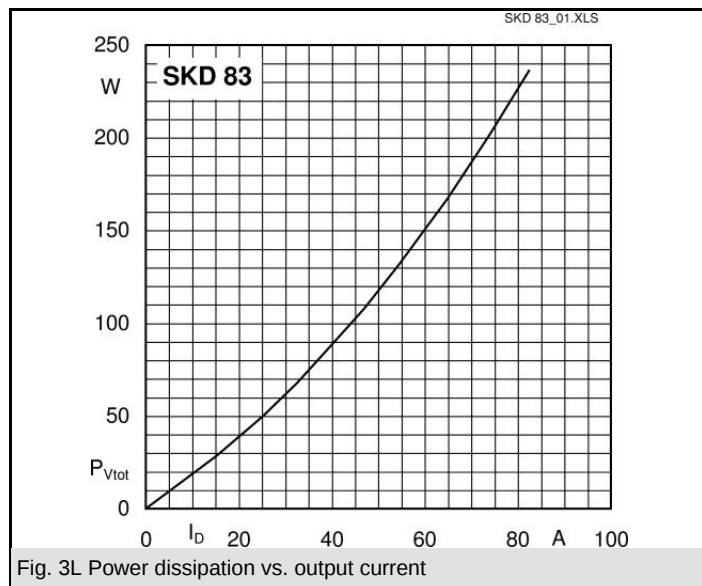
3)  $T_{\text{solder}} = 250 \pm 10 \text{ }^{\circ}\text{C}$  (10 s)

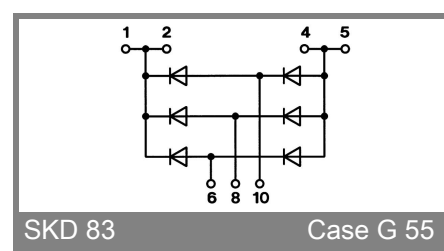
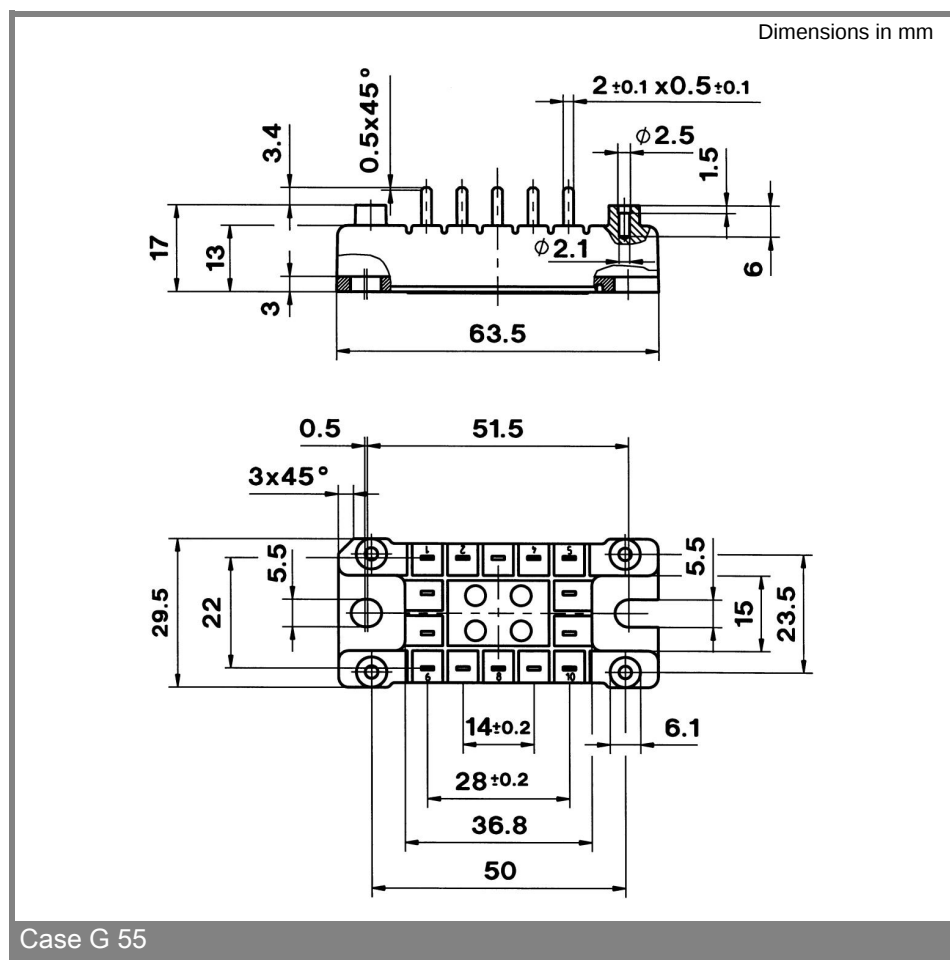
| $V_{\text{RSM}}$<br>V | $V_{\text{RRM}}, V_{\text{DRM}}$<br>V | $I_D = 83 \text{ A}$ (full conduction)<br>( $T_s = 95 \text{ }^{\circ}\text{C}$ ) |
|-----------------------|---------------------------------------|-----------------------------------------------------------------------------------|
| 500                   | 400                                   | SKD 83/04                                                                         |
| 900                   | 800                                   | SKD 83/08                                                                         |
| 1300                  | 1200                                  | SKD 83/12                                                                         |
| 1600                  | 1400                                  | SKD 83/14                                                                         |
| 1700                  | 1600                                  | SKD 83/16                                                                         |
| 1900                  | 1800                                  | SKD 83/18                                                                         |

| Symbol               | Conditions                                                                                                          | Values                       | Units              |
|----------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------|
| $I_D$                | $T_s = 95 \text{ }^{\circ}\text{C}$                                                                                 | 83                           | A                  |
|                      | $T_a = 45 \text{ }^{\circ}\text{C}$ ; isolated <sup>1)</sup>                                                        | 4                            | A                  |
|                      | $T_a = 45 \text{ }^{\circ}\text{C}$ ; chassis <sup>2)</sup>                                                         | 20                           | A                  |
|                      | $T_a = 45 \text{ }^{\circ}\text{C}$ ; P5A/100 (R4A/120)                                                             | 32 (34)                      | A                  |
|                      | $T_a = 35 \text{ }^{\circ}\text{C}$ ; P1A/120F                                                                      | 83                           | A                  |
| $I_{\text{FSM}}$     | $T_{\text{vj}} = 25 \text{ }^{\circ}\text{C}$ ; 10 ms                                                               | 700                          | A                  |
| $i^2t$               | $T_{\text{vj}} = 150 \text{ }^{\circ}\text{C}$ ; 10 ms                                                              | 560                          | A                  |
|                      | $T_{\text{vj}} = 25 \text{ }^{\circ}\text{C}$ ; 8,3 ... 10 ms                                                       | 2450                         | A <sup>2</sup> s   |
|                      | $T_{\text{vj}} = 150 \text{ }^{\circ}\text{C}$ ; 8,3 ... 10 ms                                                      | 1570                         | A <sup>2</sup> s   |
| $V_F$                | $T_{\text{vj}} = 25 \text{ }^{\circ}\text{C}$ ; $I_F = 80 \text{ A}$                                                | max. 1,45                    | V                  |
| $V_{(T0)}$           | $T_{\text{vj}} = 150 \text{ }^{\circ}\text{C}$                                                                      | max. 0,8                     | V                  |
| $r_T$                | $T_{\text{vj}} = 150 \text{ }^{\circ}\text{C}$                                                                      | max. 7,5                     | mΩ                 |
| $I_{\text{RD}}$      | $T_{\text{vj}} = 25 \text{ }^{\circ}\text{C}$ ; $V_{\text{DD}} = V_{\text{DRM}}$ ; $V_{\text{RD}} = V_{\text{RRM}}$ | max. 0,2                     | mA                 |
|                      | $T_{\text{vj}} = 150 \text{ }^{\circ}\text{C}$ ; $V_{\text{RD}} = V_{\text{RRM}}$                                   | 4                            | mA                 |
| $R_{\text{th(j-s)}}$ | per diode                                                                                                           | 1,4                          | K/W                |
| $R_{\text{th(j-a)}}$ | total                                                                                                               | 0,233                        | K/W                |
|                      | isolated <sup>1)</sup>                                                                                              | 14,83                        | K/W                |
|                      | chassis <sup>2)</sup>                                                                                               | 2,83                         | K/W                |
| $T_{\text{vj}}$      |                                                                                                                     | - 40 ... + 150               | $^{\circ}\text{C}$ |
| $T_{\text{stg}}$     |                                                                                                                     | - 40 ... + 125 <sup>3)</sup> | $^{\circ}\text{C}$ |
| $V_{\text{isol}}$    | a. c. 50 Hz; r.m.s.; 1 s / 1 min.                                                                                   | 3600 ( 3000 )                | V                  |
| $M_s$                | to heatsink; SI units                                                                                               | $2 \pm 15 \%$                | Nm                 |
| $M_t$                |                                                                                                                     |                              |                    |
| a                    |                                                                                                                     | 5 * 9,81                     | m/s <sup>2</sup>   |
| m                    |                                                                                                                     | 30                           | g                  |
| Case                 |                                                                                                                     | G 55                         |                    |



SKD





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