



**SEMITOP® 2**

## Bridge Rectifier

### SK 55 B 06 F

Preliminary Data

### Features

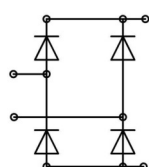
- Compact design
- One screw mounting
- Heat transfer and insulation through direct copper bonded aluminium oxide ceramic (DCB)
- Fast and soft recovery CAL (Controlled Axial Lifetime) diode
- UL recognized, file no. E 63 532

### Typical Applications\*

- General power switching applications
- UPS
- SMPS

|                |                         |                                                    |
|----------------|-------------------------|----------------------------------------------------|
| $V_{RSM}$<br>V | $V_{RRM}, V_{DRM}$<br>V | $I_D = 54$ A (full conduction)<br>( $T_s = 80$ °C) |
|                | 600                     | SK 55 B 06 F                                       |

| Symbol        | Conditions                                             | Values        | Units |
|---------------|--------------------------------------------------------|---------------|-------|
| $I_D$         | $T_s = 80$ °C                                          | 54            | A     |
| $I_{RRM}$     | $T_{vj} = 125$ °C (See Fig. 6)                         | 30            | A     |
| $Q_{rr}$      | $T_{vj} = 25$ (125) °C (See Fig. 6)                    | typ. 1 (3)    | µC    |
| $I_R$         | $T_{vj} = 25$ (125) °C; $V_R = V_{RRM}$                | 0,1 (4)       | mA    |
| $I_{FSM}$     | $T_{vj} = 150$ °C; 10 ms                               | 440           | A     |
| $i^2t$        | $T_{vj} =$ °C; ms                                      | 970           | A     |
|               | $T_{vj} = 150$ °C; 10 ms                               |               | A²s   |
|               | $T_{vj} =$ °C; ms                                      |               | A²s   |
| $V_F$         | $T_{vj} = 25$ °C; $I_F = 50$ A                         | max. 1,7      | V     |
| $V_{(TO)}$    | $T_{vj} = 125$ °C                                      | max. 0,9      | V     |
| $r_T$         | $T_{vj} = 125$ °C                                      | max. 16       | mΩ    |
| $I_{RD}$      | $T_{vj} =$ °C; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$ |               | mA    |
|               |                                                        |               | mA    |
| $R_{th(j-s)}$ | per diode                                              | 1,2           | K/W   |
|               | per module                                             | 0,3           | K/W   |
| $T_{solder}$  | terminals, 10s                                         | 260           | °C    |
| $T_{vj}$      |                                                        | -40...+150    | °C    |
| $T_{stg}$     |                                                        | -40...+125    | °C    |
| $V_{isol}$    | a. c. 50 Hz; r.m.s.; 1 s / 1 min.                      | 3000 ( 2500 ) | V     |
| $M_s$         | mounting torque to heatsink                            | 2             | Nm    |
| $M_t$         |                                                        |               |       |
| $m$           | approx. weight                                         | 19            | g     |
| Case          | SEMITOP® 2                                             | T 6           |       |



**B**

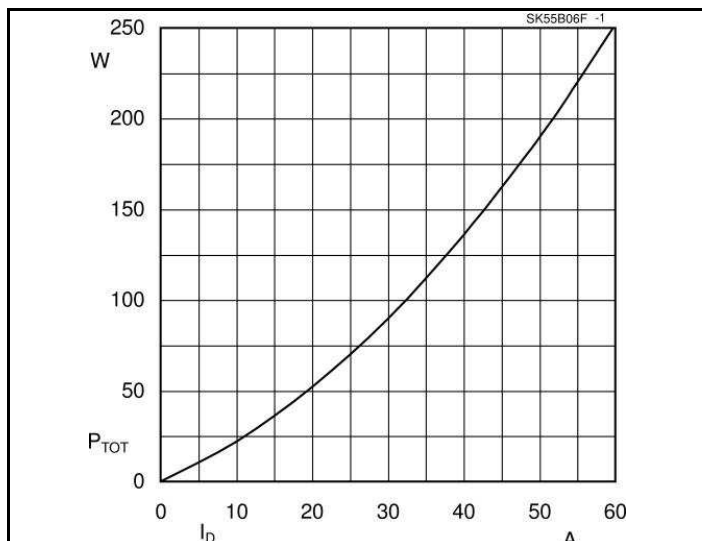


Fig. 1 Power dissipation vs. Output current

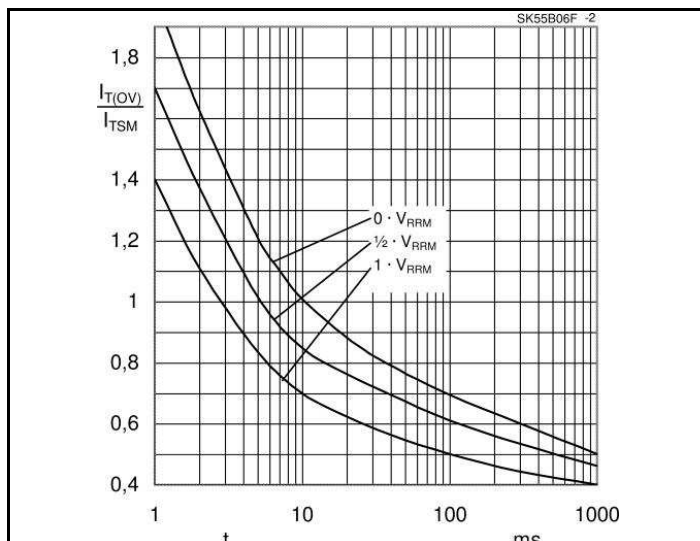


Fig. 2 Surge overload current vs. time

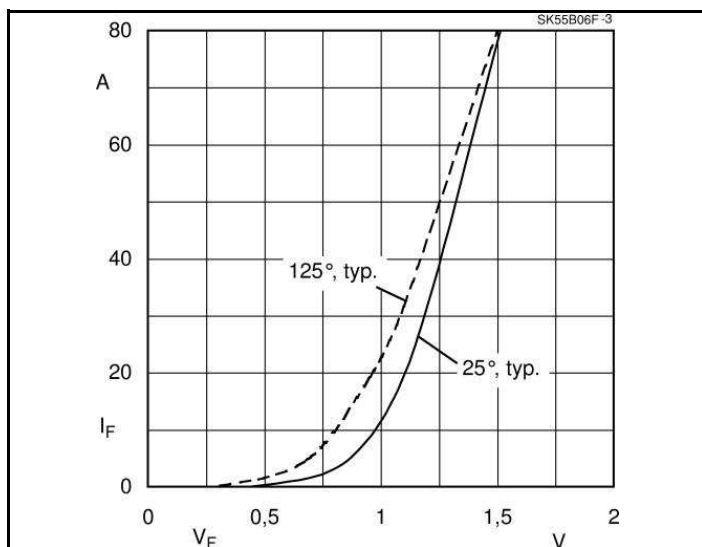


Fig. 3 Forward characteristics of single diode

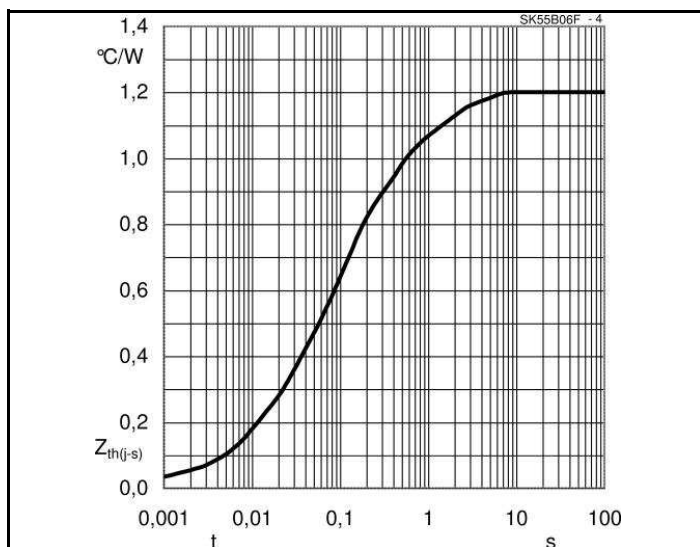


Fig. 4 Thermal transient impedance vs. time

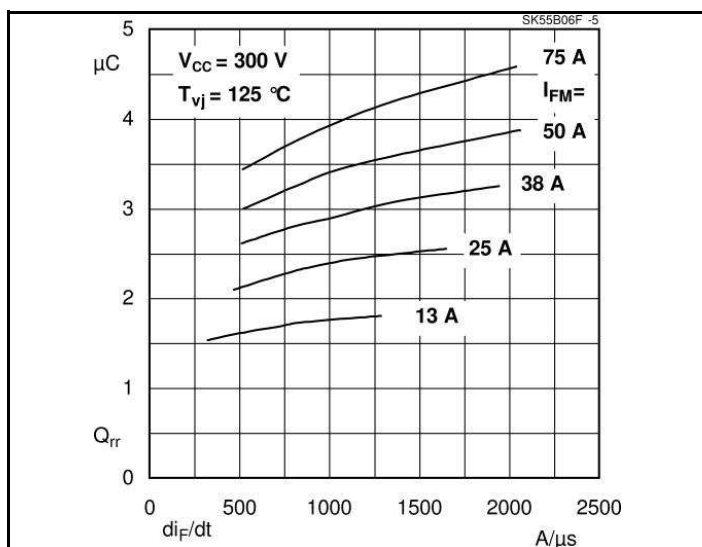
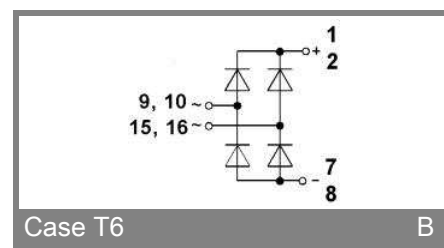
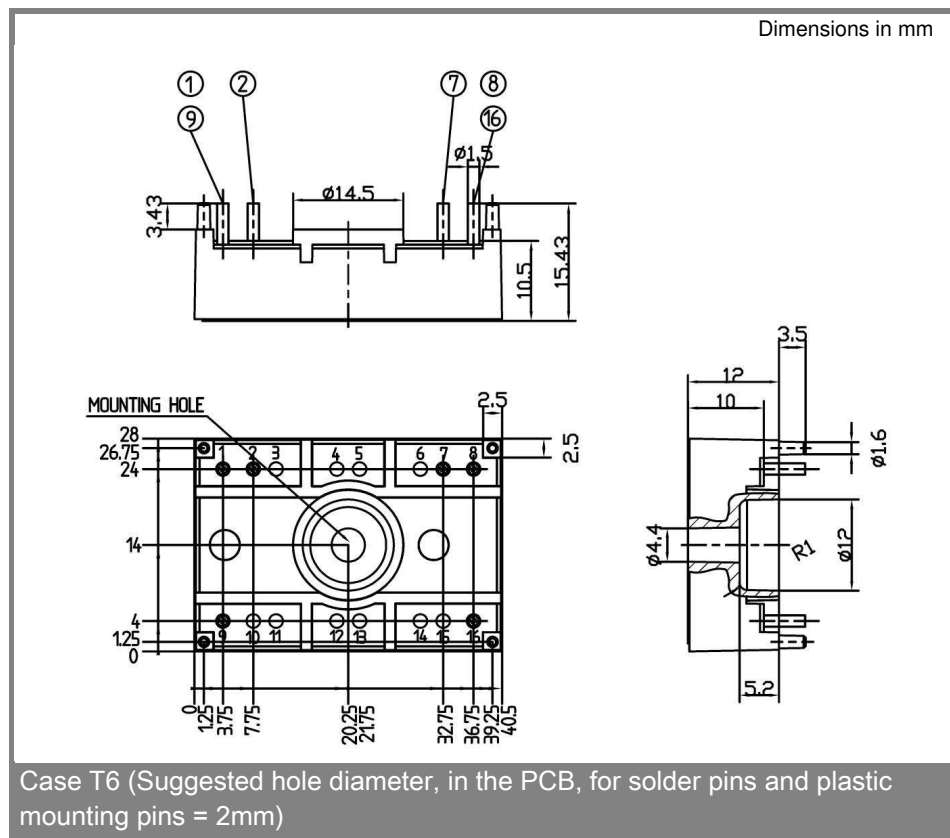


Fig. 5 Typ. reverse recovery charge  $Q_{rr} = f(di_F/dt)$

**Measurement conditions for switching parameters:**

$I_F = 50 \text{ A}$   
 $V_R = 300 \text{ V}$   
 $-di/dt = 500 \text{ A/}\mu\text{s}$

Fig. 6



\* 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.