

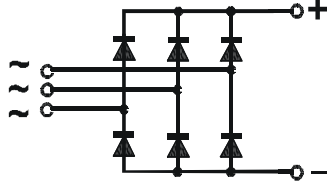
Three Phase Rectifier Bridge

PSD 83

$I_{dAV} = 100 \text{ A}$
 $V_{RRM} = 800-1800 \text{ V}$

Preliminary Data Sheet

| V_{RSM} V_{DSM} (V) | V_{RRM} V_{DRM} (V) | Type |
|-------------------------------|-------------------------------|-----------|
| 800 | 800 | PSD 83/08 |
| 1200 | 1200 | PSD 83/12 |
| 1400 | 1400 | PSD 83/14 |
| 1600 | 1600 | PSD 83/16 |
| 1800 | 1800 | PSD 83/18 |



| Symbol | Test Conditions | Maximum Ratings |
|---------------|--|-------------------------------|
| I_{dAVM} | $T_C = 100 \text{ }^\circ\text{C}$, (per module) | 100 A |
| I_{FSM} | $T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine | 1200 A |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 1300 A |
| | $T_{VJ} = T_{VJM}$ t = 10 ms (50 Hz), sine | 1000 A |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 1100 A |
| $\int i^2 dt$ | $T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine | 7200 A ² s |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 7020 A ² s |
| | $T_{VJ} = T_{VJM}$ t = 10 ms (50 Hz), sine | 5000 A ² s |
| | $V_R = 0$ t = 8.3 ms (60 Hz), sine | 5020 A ² s |
| T_{VJ} | | -40... + 150 $^\circ\text{C}$ |
| T_{VJM} | | 150 $^\circ\text{C}$ |
| T_{stg} | | -40... + 150 $^\circ\text{C}$ |
| V_{ISOL} | 50/60 Hz, RMS t = 1 min | 2500 V~ |
| | $I_{ISOL} \leq 1 \text{ mA}$ t = 1 s | 3000 V~ |
| M_d | Mounting torque (M5) | 5 Nm |
| | Terminal connection torque (M5) | 5 Nm |
| Weight | typ. | 160 g |

Features

-
- Package with screw terminals
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Blocking voltage up to 1800 V
- Low forward voltage drop
- UL registered E 148688

Applications

- Supplies for DC power equipment
- Input rectifier for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

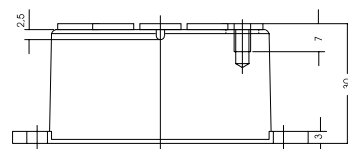
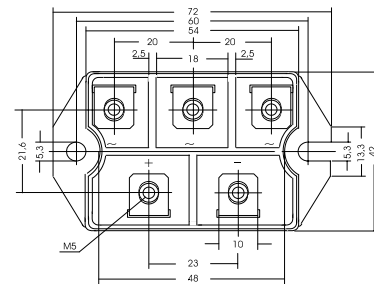
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability

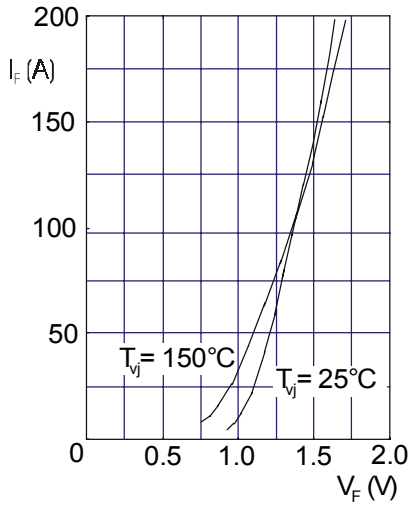
| Symbol | Test Conditions | Characteristic Value |
|------------|--|-----------------------|
| I_R | $V_R = V_{RRM}$, $T_{VJ} = 25 \text{ }^\circ\text{C}$ | $\leq 0.3 \text{ mA}$ |
| | $V_R = V_{RRM}$, $T_{VJ} = T_{VJM}$ | $\leq 5 \text{ mA}$ |
| V_F | $I_F = 100 \text{ A}$, $T_{VJ} = 25 \text{ }^\circ\text{C}$ | $\leq 1.35 \text{ V}$ |
| V_{TO} | For power-loss calculations only | 0.8 V |
| r_T | | 5 m Ω |
| R_{thJC} | per diode; DC current | 0.58 K/W |
| | per module | 0.097 K/W |
| R_{thJK} | per diode; DC current | 0.825 K/W |
| | per module | 0.138 K/W |
| d_s | Creeping distance on surface | 10.0 mm |
| d_A | Creeping distance in air | 9.4 mm |
| a | Max. allowable acceleration | 50 m/s ² |

Data according to IEC 60747 refer to a single diode unless otherwise stated

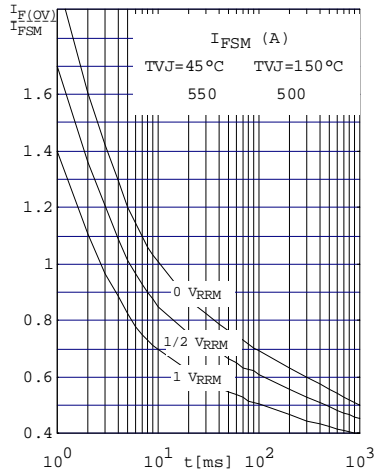
Package style and outline

Dimensions in mm (1mm = 0.0394")

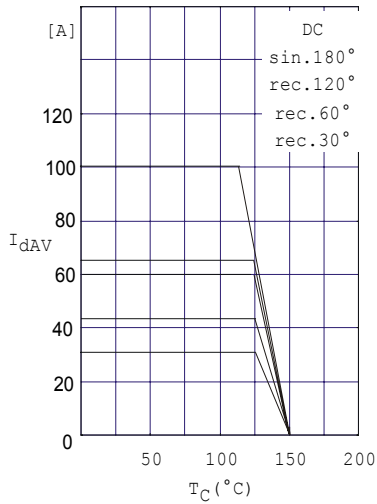




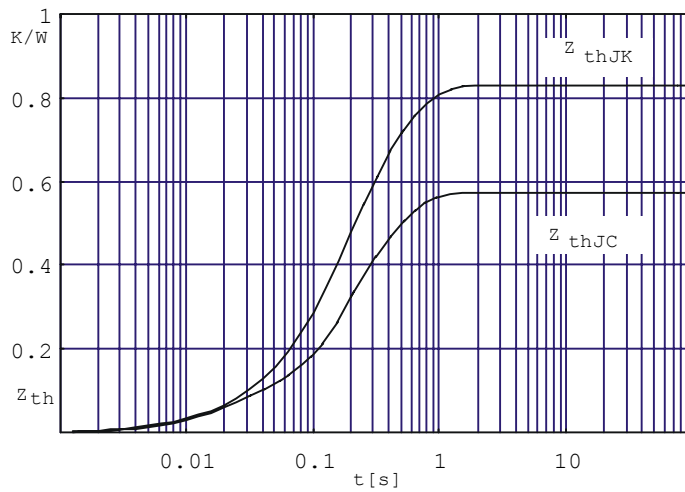
Forward current versus voltage drop per diode



Surge overload current per diode I_{FSM} : Crest value
t: duration



Maximum forward current at case temperature



Transient thermal impedance per diode

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