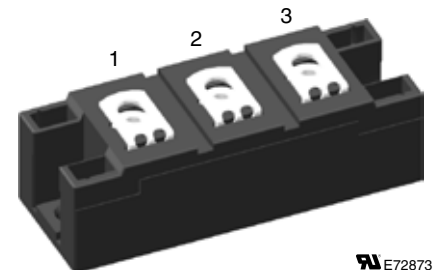
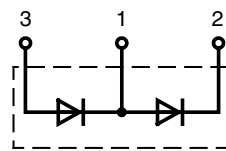


High Power Diode Modules

$I_{FRSM} = 2x\ 350\ A$
 $I_{FAVM} = 2x\ 224\ A$
 $V_{RRM} = 1400-2200\ V$

| V_{RSM} V | V_{RRM} V | Type |
|----------------|----------------|--------------|
| 1500 | 1400 | MDD 200-14N1 |
| 1700 | 1600 | MDD 200-16N1 |
| 1900 | 1800 | MDD 200-18N1 |
| 2300 | 2200 | MDD 200-22N1 |



E72873

| Symbol | Conditions | Maximum Ratings | |
|------------|---|-----------------|------------------|
| I_{FRMS} | $T_{VJ} = T_{VJM}$ | 350 | A |
| I_{FAVM} | $T_C = 100^\circ C; 180^\circ$ sine | 224 | A |
| I_{FSM} | $T_{VJ} = 45^\circ C; t = 10\ ms$ (50 Hz) | 10500 | A |
| | $V_R = 0; t = 8.3\ ms$ (60 Hz) | 11200 | A |
| | $T_{VJ} = T_{VJM}; t = 10\ ms$ (50 Hz) | 9100 | A |
| | $V_R = 0; t = 8.3\ ms$ (60 Hz) | 9700 | A |
| I^2t | $T_{VJ} = 45^\circ C; t = 10\ ms$ (50 Hz) | 551000 | A ² s |
| | $V_R = 0; t = 8.3\ ms$ (60 Hz) | 527000 | A ² s |
| | $T_{VJ} = T_{VJM}; t = 10\ ms$ (50 Hz) | 414000 | A ² s |
| | $V_R = 0; t = 8.3\ ms$ (60 Hz) | 395000 | A ² s |
| T_{VJ} | | -40...+150 | °C |
| T_{VJM} | | 150 | °C |
| T_{stg} | | -40...+125 | °C |
| V_{ISOL} | 50/60 Hz, RMS $t = 1\ min$ | 3000 | V~ |
| | $I_{ISOL} \leq 1\ mA; t = 1\ s$ | 3600 | V~ |
| M_d | Mounting torque (M6) | 2.25 - 2.75 | Nm |
| | Terminal connection torque (M6) | 4.5 - 5.5 | Nm |
| Weight | Typical including screws | 120 | g |

Features

- International standard package
- Direct copper bonded Al_2O_3 ceramic with copper base plate
- Planar passivated chips
- Isolation voltage 3600 V~

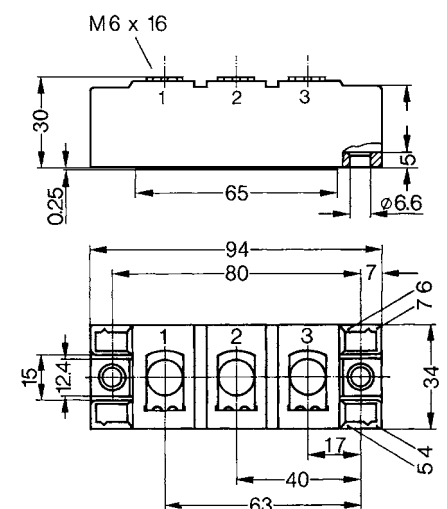
Applications

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

Advantages

- Space and weight savings
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits

Dimensions in mm (1 mm = 0.0394")



| Symbol | Conditions | Characteristics Values | |
|------------|--|------------------------|------------------|
| I_{RRM} | $V_R = V_{RRM}; T_{VJ} = T_{VJM}$ | 20 | mA |
| V_F | $I_F = 300\ A; T_{VJ} = 25^\circ C$ | 1.3 | V |
| V_{T0} | For power-loss calculations only | 0.8 | V |
| r_t | $T_{VJ} = T_{VJM}$ | 0.6 | mΩ |
| R_{thJC} | per diode; DC current | 0.130 | K/W |
| | per module | 0.065 | K/W |
| R_{thJK} | per diode; DC current | 0.230 | K/W |
| | per module | 0.115 | K/W |
| Q_S | $T_{VJ} = 125^\circ C; I_F = 300\ A; -di/dt = 50\ A/\mu s$ | 625 | μC |
| I_{RM} | | 275 | A |
| d_s | Creeping distance on surface | 12.7 | mm |
| d_A | Creepage distance in air | 9.6 | mm |
| a | Maximum allowable acceleration | 50 | m/s ² |

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

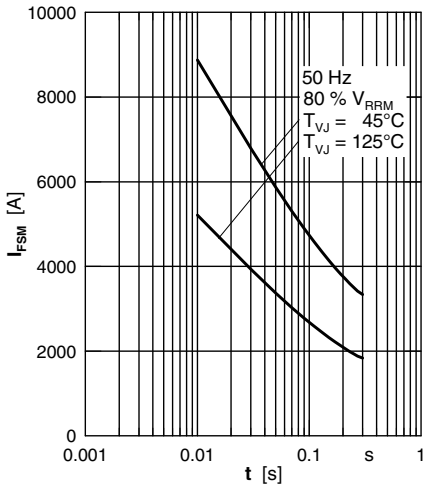


Fig. 1 Surge overload current I_{FSM} : Crest value, t: duration

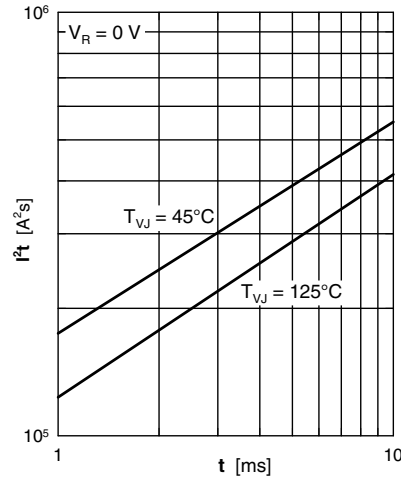


Fig. 2 I^2t versus time (1-10 ms)

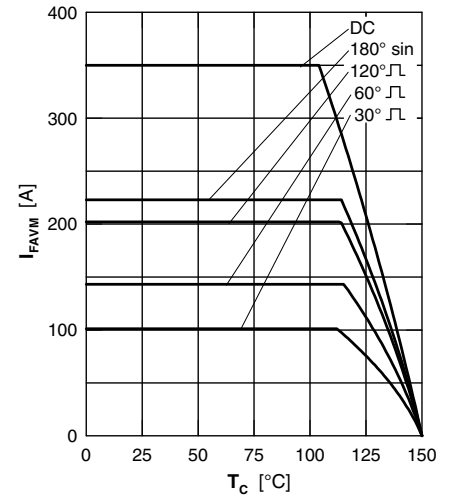


Fig. 3 Maximum forward current at case temperature

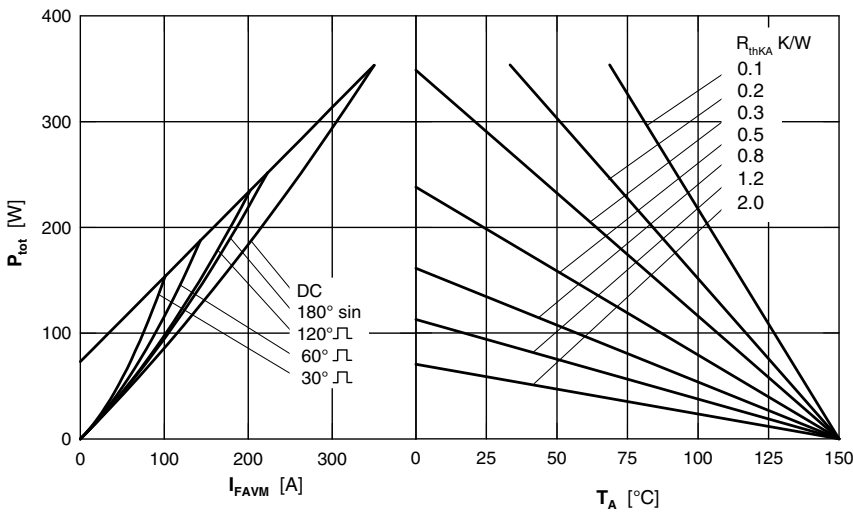


Fig. 4 Power dissipation versus forward current and ambient temperature (per diode)

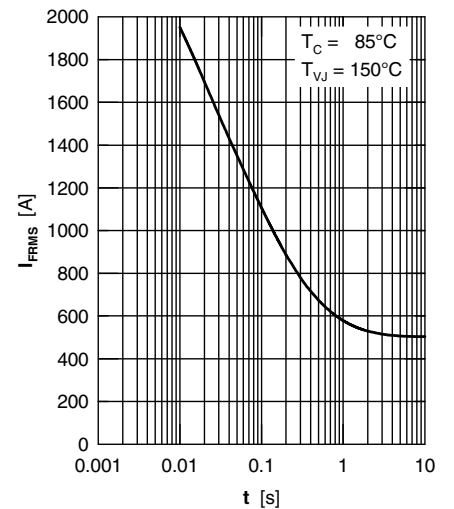


Fig. 5 Rated RMS current versus time (360° conduction)

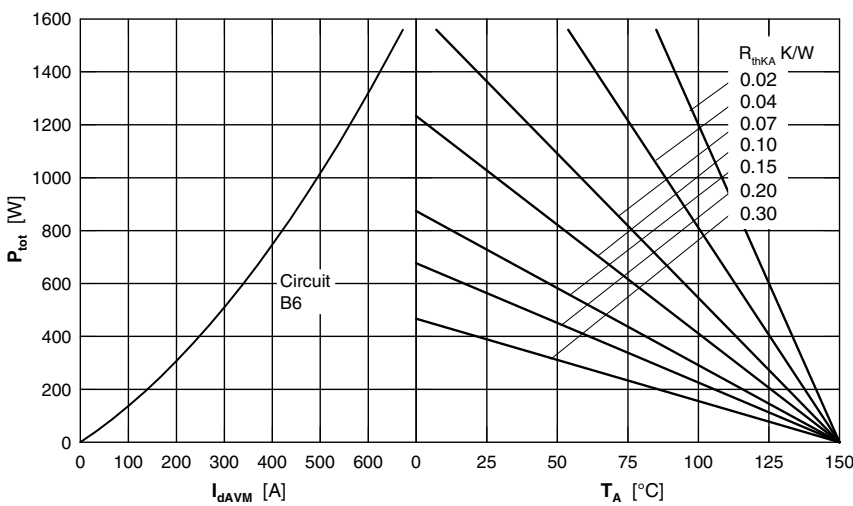


Fig. 6 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

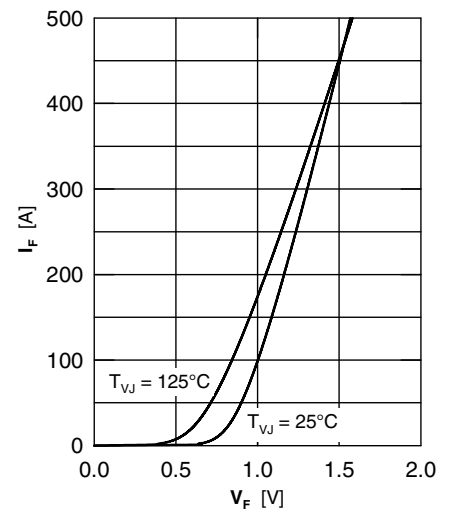


Fig. 7 Forward current versus voltage drop

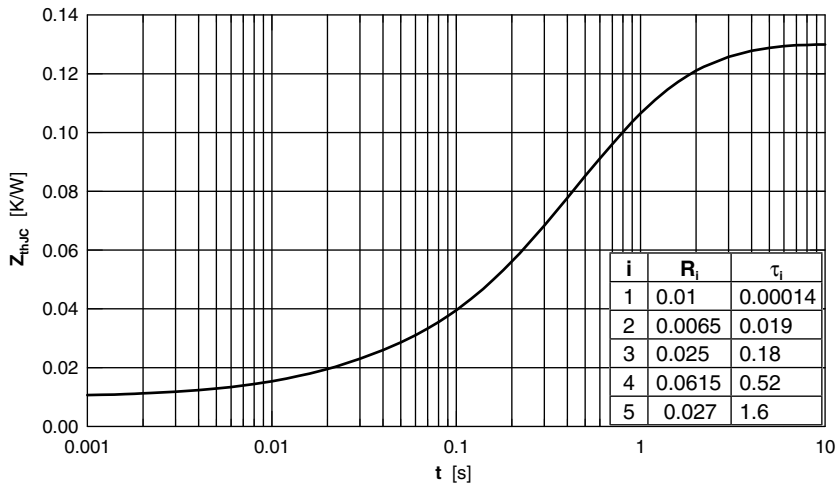


Fig. 8 Transient thermal impedance junction to case