

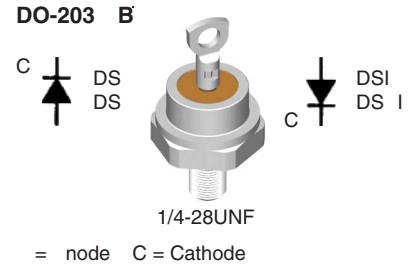
Rectifier Diode valanche Diode

Replacements see page 3

$V_{RRM} = 1200-1800 V$
 $I_{F(RMS)} = 160$
 $I_{F(V)M} = 110$

| V_{RSM} V | $V_{(BR)min}$ ① V | V_{RRM} V | node on stud | Cathode on stud |
|----------------|----------------------|----------------|-----------------|--------------------|
| 1300 | - | 1200 | DS 75-12B | DSI 75-12B |
| 1300 | 1300 | 1200 | DS 75-12B | DS 175-12B |
| 1700 | 1760 | 1600 | DS 75-16B | DS 175-16B |
| 1900 | 1950 | 1800 | DS 75-18B | DS 175-18B |

① Only for valanche Diodes



| Symbol | Test Conditions | Maximum Ratings | |
|--------------|---|---|--------------------------|
| $I_{F(RMS)}$ | $T_{VJ} = T_{VJM}$ | 160 | |
| $I_{F(V)M}$ | $T_{case} = 100^{\circ}C$; 180° sine | 110 | |
| P_{RSM} | DS (I) types, $T_{VJ} = T_{VJM}$, $t_p = 10 \mu s$ | 20 kW | |
| I_{FSM} | $T_{VJ} = 45^{\circ}C$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 1400 1500 |
| | $T_{VJ} = T_{VJM}$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 1250 1310 |
| I^2t | $T_{VJ} = 45^{\circ}C$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 9800 2s 9450 2s |
| | $T_{VJ} = T_{VJM}$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 7820 2s 7210 2s |
| T_{VJ} | | -40...+180 °C | |
| T_{VJM} | | 180 °C | |
| T_{stg} | | -40...+180 °C | |
| M_d | Mounting torque | 2.4-4.5 Nm 21-40 lb.in. | |
| Weight | | 21 g | |

Features

- International standard package, JEDEC DO-203 B (DO-5)
- Planar glassivated chips

Applications

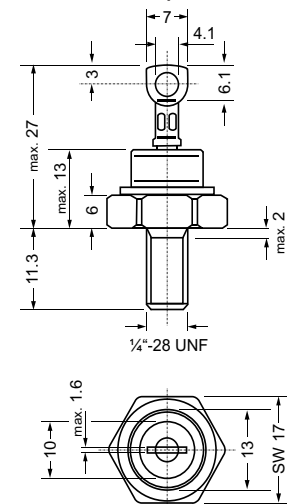
- High power rectifiers
- Field supply for DC motors
- Power supplies

Advantages

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

| Symbol | Test Conditions | Characteristic Values |
|------------|--------------------------------------|-----------------------|
| I_R | $T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$ | ≤ 6 m |
| V_F | $I_F = 150$; $T_{VJ} = 25^{\circ}C$ | ≤ 1.17 V |
| V_{TO} | For power-loss calculations only | 0.75 V |
| r_T | $T_{VJ} = T_{VJM}$ | 2 mΩ |
| R_{thJC} | DC current | 0.5 K/W |
| R_{thJH} | DC current | 0.9 K/W |
| d_s | Creepage distance on surface | 4.05 mm |
| d | Strike distance through air | 3.9 mm |
| a | Max. allowable acceleration | 100 m/s ² |

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747
 IXYS reserves the right to change limits, test conditions and dimensions

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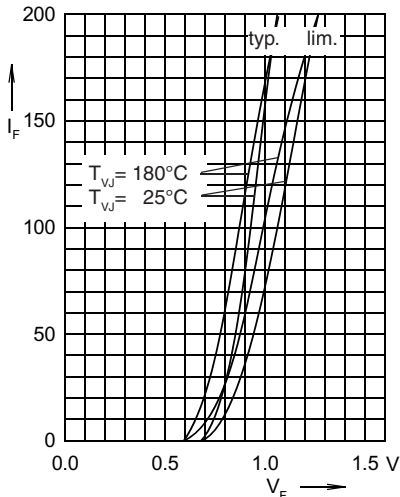


Fig. 1 Forward characteristics

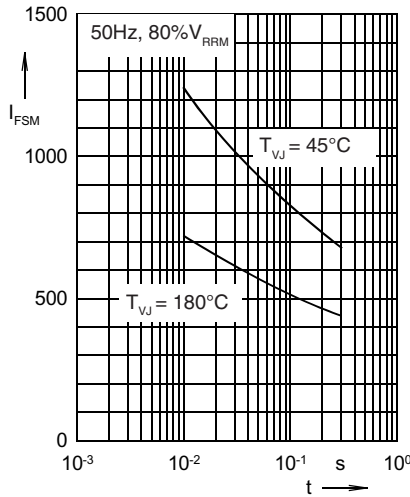


Fig. 2 Surge overload current
 I_{FSM} : crest value, t : duration

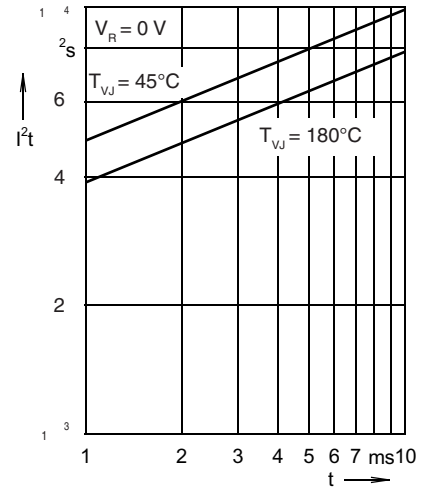


Fig. 3 I^2t versus time (1-10 ms)

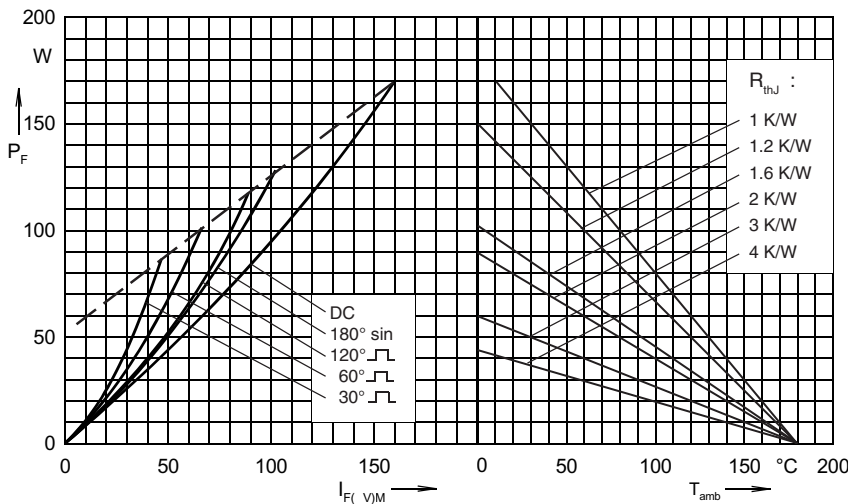


Fig. 4 Power dissipation versus forward current and ambient temperature

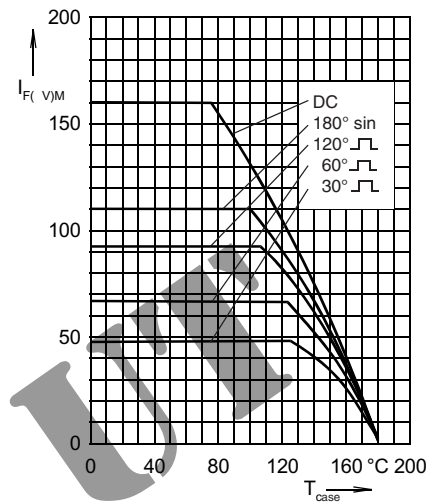


Fig. 5 Max. forward current at case temperature

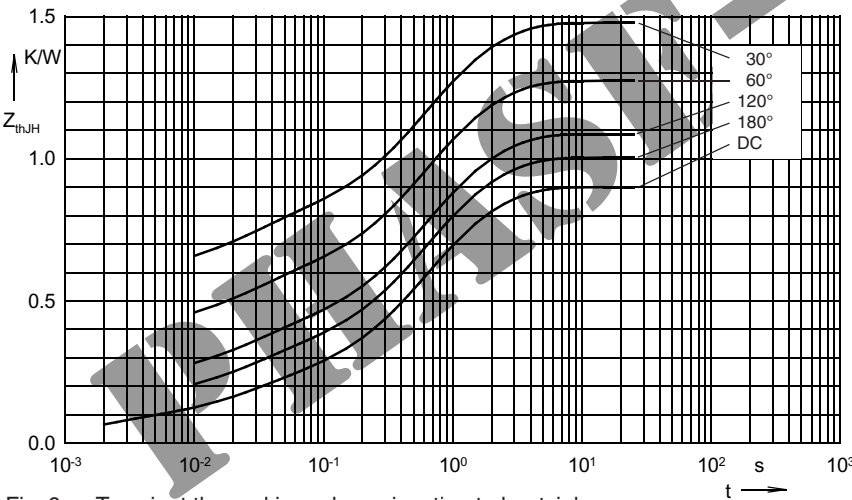


Fig. 6 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d :

| d | R_{thJH} (K/W) |
|------|------------------|
| DC | 0.900 |
| 180° | 1.028 |
| 120° | 1.085 |
| 60° | 1.272 |
| 30° | 1.476 |

Constants for Z_{thJH} calculation:

| i | R_{thi} (K/W) | t_i (s) |
|-----|-----------------|-----------|
| 1 | 0.0731 | 0.0015 |
| 2 | 0.1234 | 0.0237 |
| 3 | 0.4035 | 0.4838 |
| 4 | 0.3000 | 1.5 |

| Type | Replacements |
|-------------------|---|
| DSI75-12B | DM 200X1600N ; DM 200X 1600N |
| DS I75-12B | DM 200X1600N ; DM 200X 1600N ; D 200X1800N ; D 200X 1800N |
| DS I75-16B | DM 200X1600N ; DM 200X 1600N ; D 200X1800N ; D 200X 1800N |
| DS I75-18B | D 200X1800N ; D 200X 1800N |
| DS75-12B | DM 200X1600N ; DM 200X 1600N |
| DS 75-12B | DM 200X1600N ; DM 200X 1600N ; D 200X1800N ; D 200X 1800N |
| DS 75-16B | DM 200X1600N ; DM 200X 1600N ; D 200X1800N ; D 200X 1800N |
| DS 75-18B | D 200X1800N ; D 200X 1800N |

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