

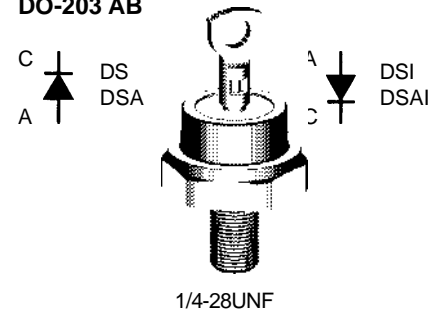
Rectifier Diode Avalanche Diode

$V_{RRM} = 800-1800 \text{ V}$
 $I_{F(RMS)} = 160 \text{ A}$
 $I_{F(AV)M} = 110 \text{ A}$

| V_{RSM} V | $V_{(BR)min}$ ① V | V_{RRM} V | Anode on stud | Cathode on stud |
|----------------|----------------------|----------------|------------------|--------------------|
| 900 | - | 800 | DS75-08B | DSI75-08B |
| 1300 | - | 1200 | DS75-12B | DSI75-12B |
| 1300 | 1300 | 1200 | DSA75-12B | DSAI75-12B |
| 1700 | 1760 | 1600 | DSA75-16B | DSAI75-16B |
| 1900 | 1950 | 1800 | DSA75-18B | DSAI75-18B |

① Only for Avalanche Diodes

DO-203 AB



A = Anode C = Cathode

| Symbol | Test Conditions | Maximum Ratings | |
|--------------|--|---|--|
| $I_{F(RMS)}$ | $T_{VJ} = T_{VJM}$ | 160 | A |
| $I_{F(AV)M}$ | $T_{case} = 100^{\circ}\text{C}; 180^{\circ}$ sine | 110 | A |
| P_{RSM} | DSA(I) types, $T_{VJ} = T_{VJM}, t_p = 10 \mu\text{s}$ | 20 | kW |
| I_{FSM} | $T_{VJ} = 45^{\circ}\text{C}; V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 1400 A 1500 A |
| | $T_{VJ} = T_{VJM}; V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 1250 A 1310 A |
| I^2t | $T_{VJ} = 45^{\circ}\text{C}; V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 9800 A ² s 9450 A ² s |
| | $T_{VJ} = T_{VJM}; V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 7820 A ² s 7210 A ² s |
| 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 AB (DO-5)
- Planar glassivated chips

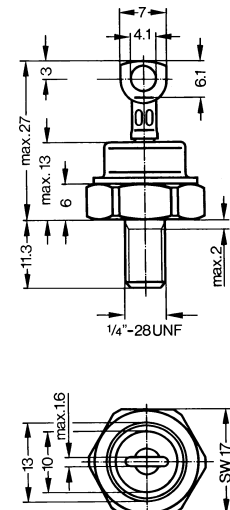
Applications

- 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

Dimensions in mm (1 mm = 0.0394")



| Symbol | Test Conditions | Characteristic Values | |
|------------|--|-----------------------|------------------|
| I_R | $T_{VJ} = T_{VJM}; V_R = V_{RRM}$ | ≤ 6 | mA |
| V_F | $I_F = 150 \text{ A}; T_{VJ} = 25^{\circ}\text{C}$ | ≤ 1.17 | V |
| V_{T0} | 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_A | Strike distance through air | 3.9 | mm |
| a | Max. allowable acceleration | 100 | m/s ² |

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

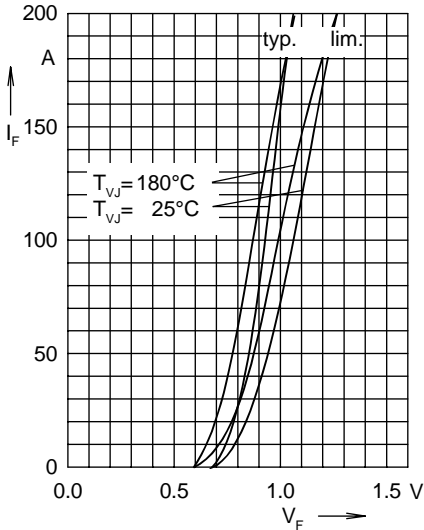


Fig. 1 Forward characteristics

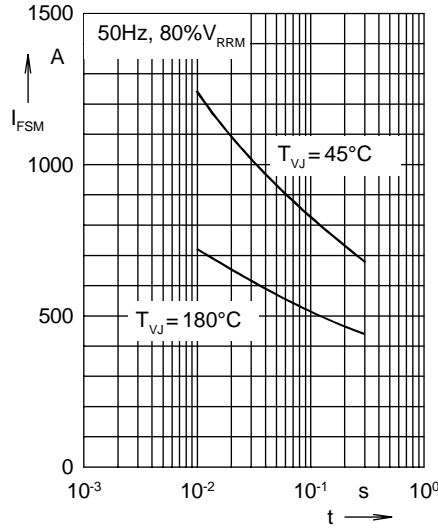


Fig. 2 Surge overload current
 I_{FSM} : crest value, t : duration

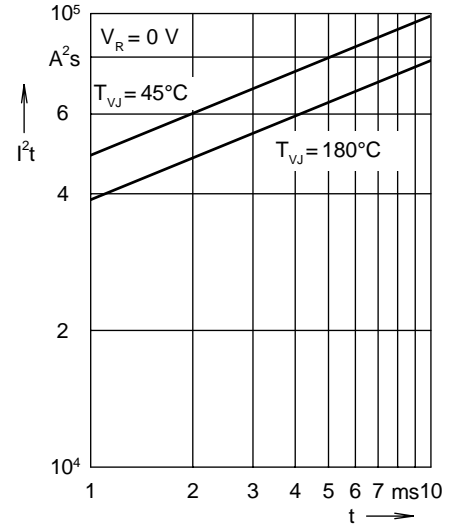


Fig. 3 I^2t versus time (1-10 ms)

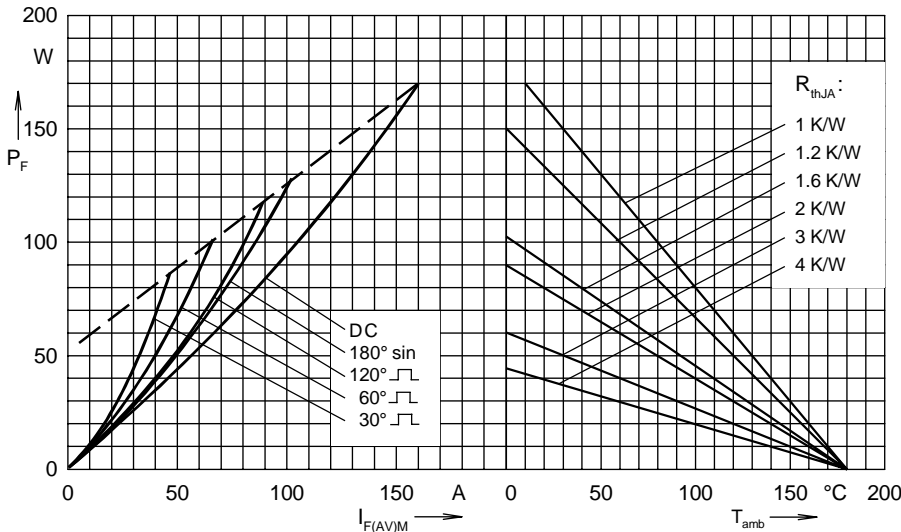


Fig. 4 Power dissipation versus forward current and ambient temperature

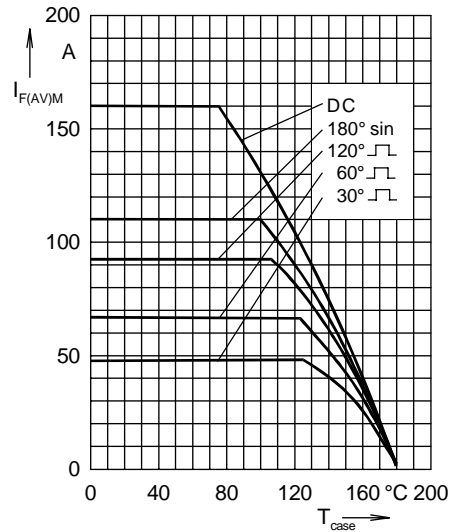


Fig. 5 Max. forward current at case temperature

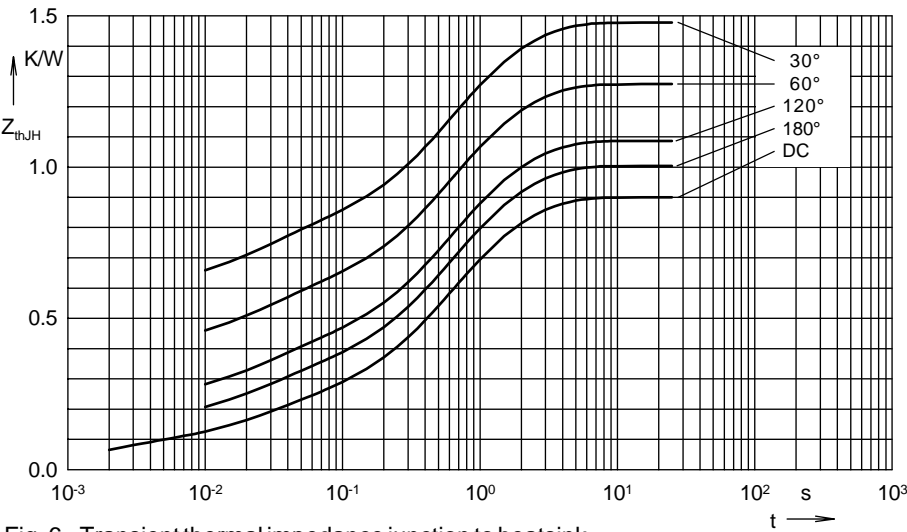


Fig. 6 Transient thermal impedance junction to heatsink

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 |