

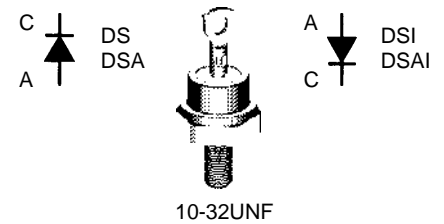
# Rectifier Diode Avalanche Diode

$V_{RRM} = 800-1800 \text{ V}$   
 $I_{F(RMS)} = 40 \text{ A}$   
 $I_{F(AV)M} = 25 \text{ A}$

| $V_{RSM}$<br>V | $V_{(BR)min}$ ①<br>V | $V_{RRM}$<br>V | Anode<br>on stud | Cathode<br>on stud |
|----------------|----------------------|----------------|------------------|--------------------|
| 900            | -                    | 800            | DS 17-08A        | DSI 17-08A         |
| 1300           | -                    | 1200           | DS 17-12A        | DSI 17-12A         |
| 1300           | 1300                 | 1200           | DSA 17-12A       | DSAI 17-12A        |
| 1700           | 1750                 | 1600           | DSA 17-16A       | DSAI 17-16A        |
| 1900           | 1950                 | 1800           | DSA 17-18A       | DSAI 17-18A        |

① Only for Avalanche Diodes

## DO-203 AA



A = Anode    C = Cathode

| Symbol       | Test Conditions   | Maximum Ratings                                     |  |
|--------------|---|---|--|
| $I_{F(RMS)}$ | $T_{VJ} = T_{VJM}$  | 40  | A  |
| $I_{F(AV)M}$ | $T_{case} = 125^{\circ}\text{C}; 180^{\circ}$ sine        | 25  | A  |
| $P_{RSM}$    | DSA(I) types, $T_{VJ} = T_{VJM}$ , $t_p = 10 \mu\text{s}$ | 7   | kW   |
| $I_{FSM}$    | $T_{VJ} = 45^{\circ}\text{C}; V_R = 0$                    | t = 10 ms (50 Hz), sine<br>t = 8.3 ms (60 Hz), sine | 370 A<br>400 A                               |
|              | $T_{VJ} = T_{VJM}; V_R = 0$                               | t = 10 ms (50 Hz), sine<br>t = 8.3 ms (60 Hz), sine | 300 A<br>320 A                               |
| $I^2t$       | $T_{VJ} = 45^{\circ}\text{C}; V_R = 0$                    | t = 10 ms (50 Hz), sine<br>t = 8.3 ms (60 Hz), sine | 680 A <sup>2</sup> s<br>660 A <sup>2</sup> s |
|              | $T_{VJ} = T_{VJM}; V_R = 0$                               | t = 10 ms (50 Hz), sine<br>t = 8.3 ms (60 Hz), sine | 450 A <sup>2</sup> s<br>430 A <sup>2</sup> s |
| $T_{VJ}$     |   | -40...+180  | °C   |
| $T_{VJM}$    |   | 180   | °C   |
| $T_{stg}$    |   | -40...+180  | °C   |
| $M_d$        | Mounting torque   | 2.2-2.8   | Nm   |
|              |   | 19-25   | lb.in.                                       |
| Weight       |   | 6   | g  |

## Features

- International standard package, JEDEC DO-203 AA (DO-4)
- Planar glassivated chips

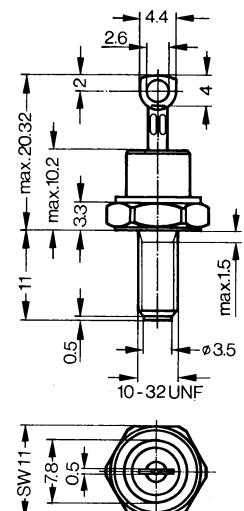
## Applications

- 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")



Data according to IEC 60747

IXYS reserves the right to change limits, test conditions and dimensions

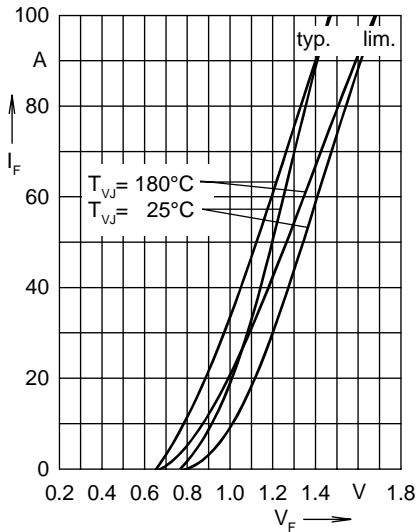


Fig. 1 Forward characteristics

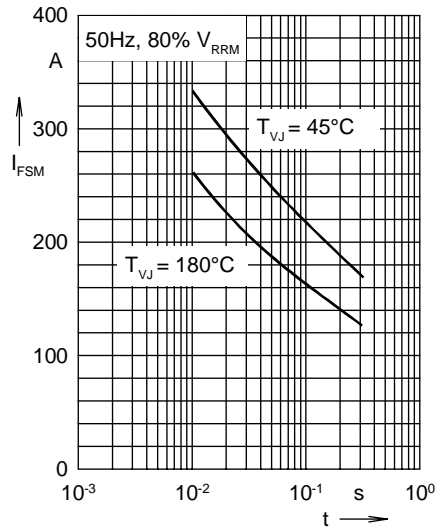


Fig. 2 Surge overload current  
 $I_{FSM}$ : crest value,  $t$ : duration

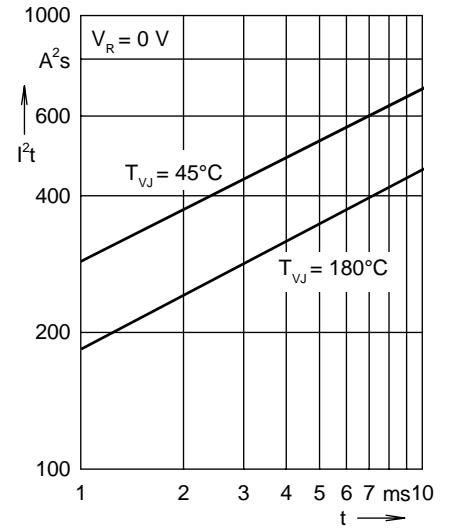


Fig. 3  $I^2t$  versus time (1-10 ms)

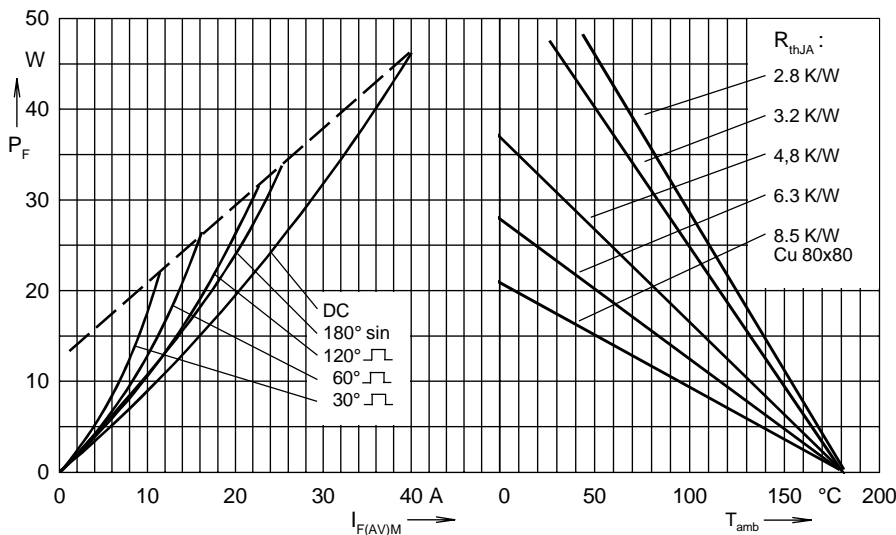


Fig. 4 Power dissipation versus forward current and ambient temperature

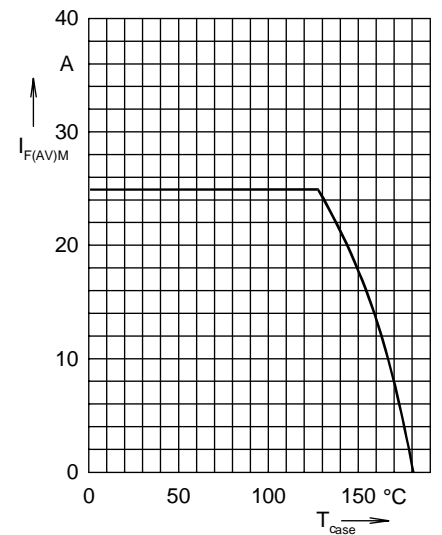


Fig. 5 Max. forward current at case temperature 180° sine

$R_{thJH}$  for various conduction angles d:

| d    | $R_{thJH}$ (K/W) |
|------|------------------|
| DC   | 2.10             |
| 180° | 2.23             |
| 120° | 2.33             |
| 60°  | 2.53             |
| 30°  | 2.72             |

Constants for  $Z_{thJH}$  calculation:

| i | $R_{thi}$ (K/W) | $t_i$ (s) |
|---|-----------------|-----------|
| 1 | 0.1006          | 0.0021    |
| 2 | 0.5311          | 0.0881    |
| 3 | 0.8683          | 2.968     |
| 4 | 0.600           | 3.20      |

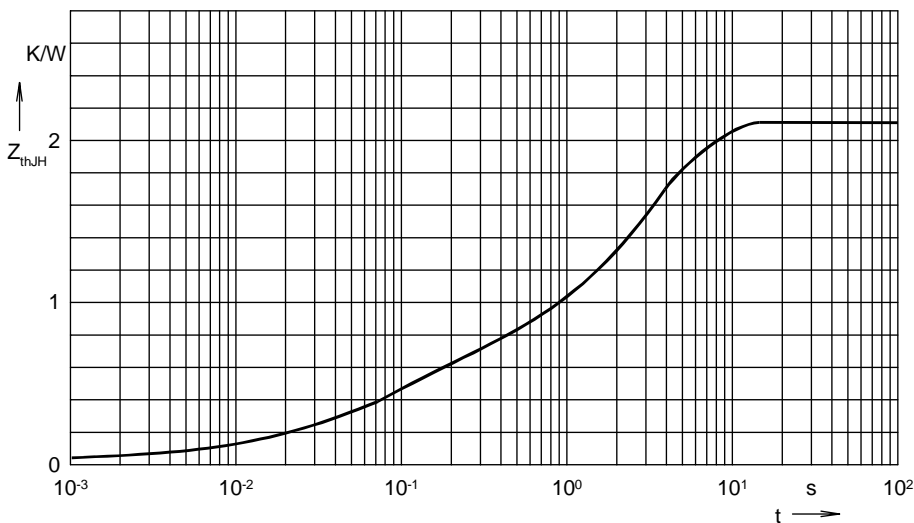


Fig. 6 Transient thermal impedance junction to heatsink