

# Rectifier Diode Avalanche Diode

$$V_{RRM} = 800-1800 \text{ V}$$

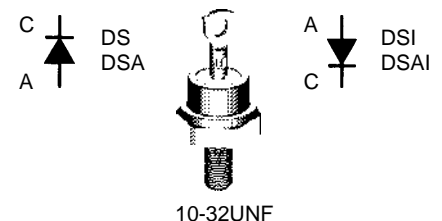
$$I_{F(RMS)} = 40 \text{ A}$$

$$I_{F(AV)M} = 25 \text{ A}$$

$V_{RSM}$ V	$V_{(BR)min}$ ① V	$V_{RRM}$ V	Anode on stud	Cathode 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
$I_{F(AV)M}$	$T_{case} = 125^{\circ}C$ ; 180° sine	25	A
$P_{RSM}$	DSA(I) types, $T_{VJ} = T_{VJM}$ , $t_p = 10 \mu s$	7	kW
$I_{FSM}$	$T_{VJ} = 45^{\circ}C$ ; $V_R = 0$	370	A
	$t = 10 \text{ ms}$ (50 Hz), sine	400	A
$I_{FSM}$	$T_{VJ} = T_{VJM}$ ; $V_R = 0$	300	A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	320	A
$I^2t$	$T_{VJ} = 45^{\circ}C$ ; $V_R = 0$	680	A <sup>2</sup> s
	$t = 10 \text{ ms}$ (50 Hz), sine	660	A <sup>2</sup> s
$I^2t$	$T_{VJ} = T_{VJM}$ ; $V_R = 0$	450	A <sup>2</sup> s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	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

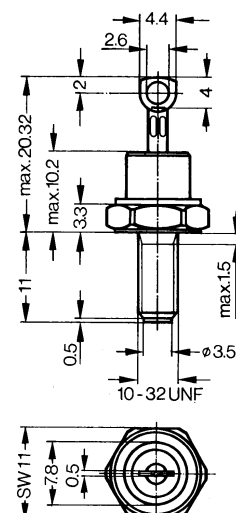
## Applications

- 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

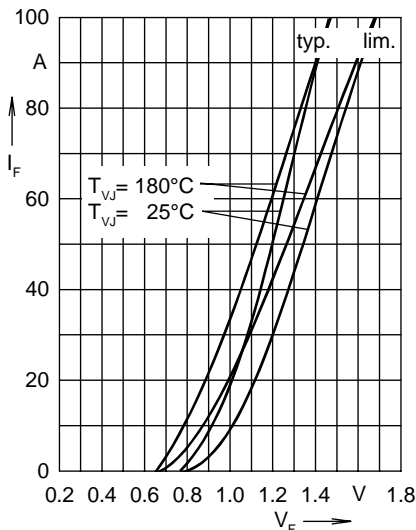


Fig. 1 Forward characteristics

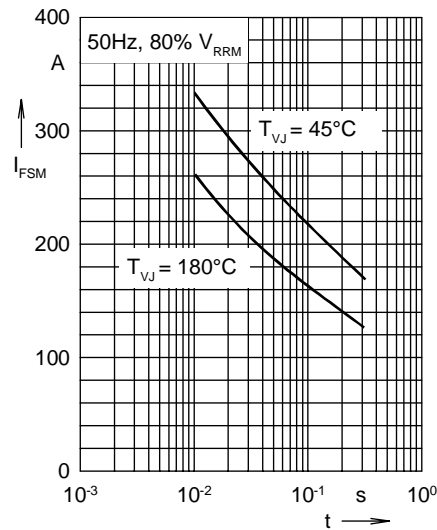


Fig. 2 Surge overload current  
 $I_{FSM}$ : crest value, t: duration

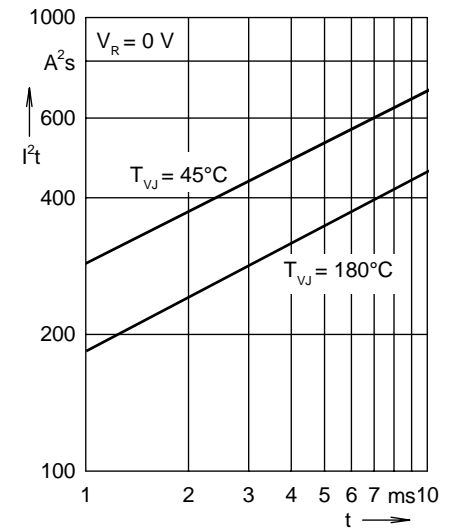


Fig. 3  $I^2t$  versus time (1-10 ms)

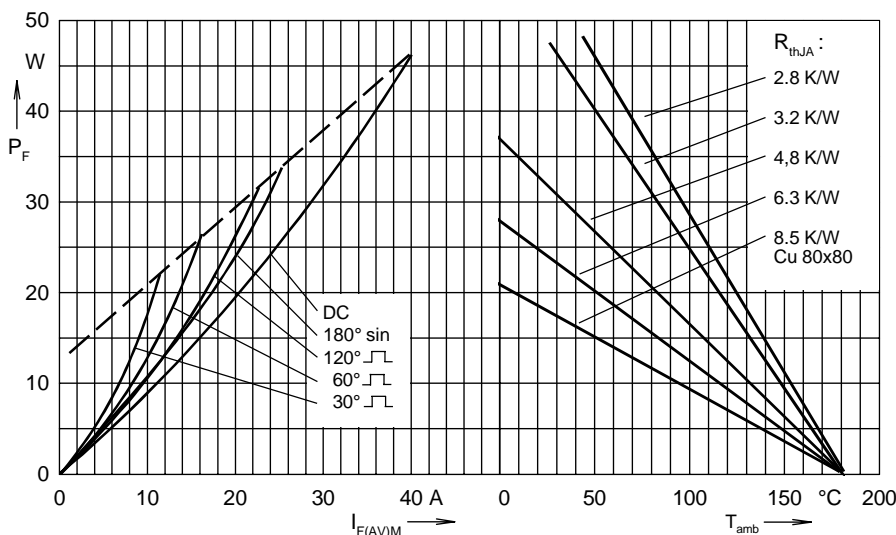


Fig. 4 Power dissipation versus forward current and ambient temperature

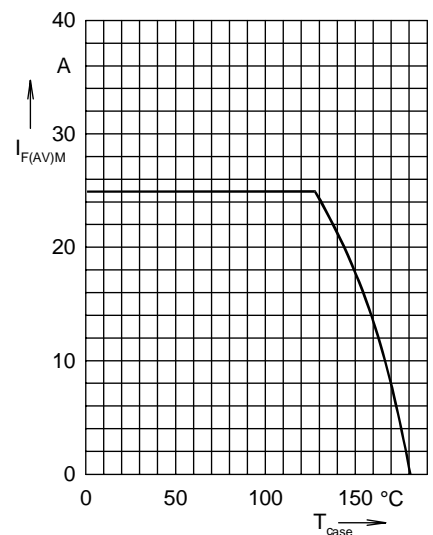


Fig. 5 Max. forward current at case temperature 180° sine

$R_{thJH}$  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

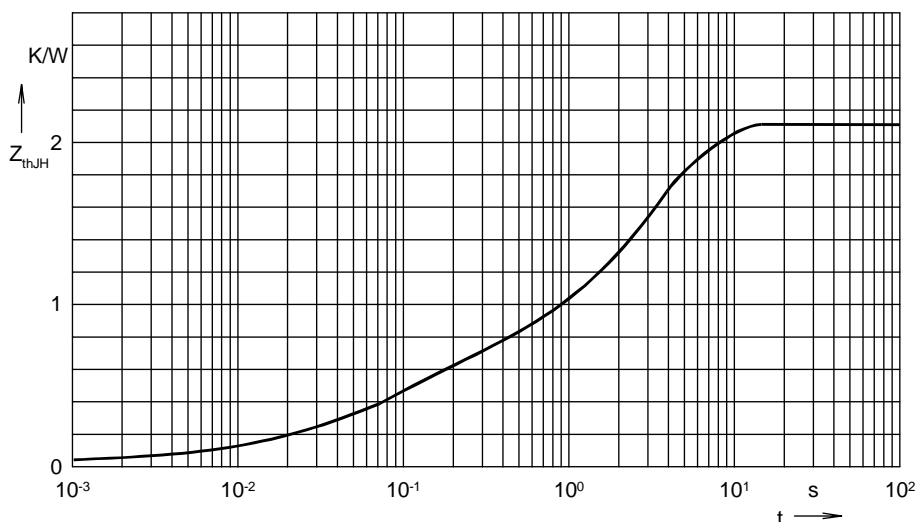


Fig. 6 Transient thermal impedance junction to heatsink