

Rectifier Diode Avalanche Diode

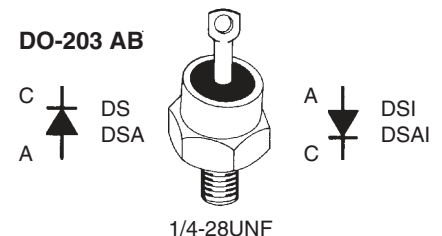
$$V_{RRM} = 1200-1800 \text{ V}$$

$$I_{F(RMS)} = 80 \text{ A}$$

$$I_{F(AV)M} = 49 \text{ A}$$

V_{RSM} V	$V_{(BR)min}$ ① V	V_{RRM} V	Anode on stud	Cathode on stud
1300	-	1200	DS 35-12A	DSI 35-12A
1300	1300	1200	DSA 35-12A	DSAI 35-12A
1700	1750	1600	DSA 35-16A	DSAI 35-16A
1900	1950	1800	DSA 35-18A	DSAI 35-18A

① Only for Avalanche Diodes



A = Anode C = Cathode

Symbol	Test Conditions	Maximum Ratings	
$I_{F(RMS)}$	$T_{VJ} = T_{VJM}$	80	A
$I_{F(AVM)}$	$T_{case} = 100^{\circ}C; 180^{\circ} \text{ sine}$	49	A
P_{RSM}	DSA(I) types, $T_{VJ} = T_{VJM}, t_p = 10 \mu s$	11	kW
I_{FSM}	$T_{VJ} = 45^{\circ}C; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	650 A
		$t = 8.3 \text{ ms (60 Hz), sine}$	690 A
	$T_{VJ} = T_{VJM}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	600 A
		$t = 8.3 \text{ ms (60 Hz), sine}$	640 A
I^2t	$T_{VJ} = 45^{\circ}C; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	2100 A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$	2000 A ² s
	$T_{VJ} = T_{VJM}; V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	1800 A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$	1700 A ² s
T_{VJ}		-40...+180	°C
T_{VJM}		180	°C
T_{stg}		-40...+180	°C
M_d	Mounting torque	4.5-5.5	Nm
		40-49	lb.in.
Weight		15	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

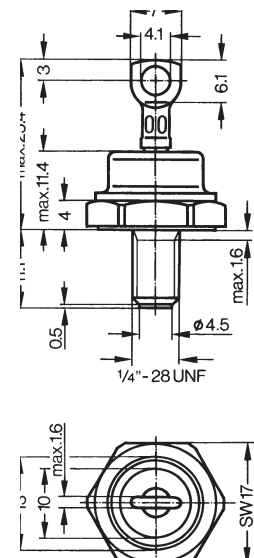
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits

Symbol	Test Conditions	Characteristic Values	
I_R	$T_{VJ} = T_{VJM}; V_R = V_{RRM}$	$\leq$	4 mA
V_F	$I_F = 150 \text{ A}; T_{VJ} = 25^{\circ}C$	$\leq$	1.55 V
V_{T0}	For power-loss calculations only	0.85	V
r_T	$T_{VJ} = T_{VJM}$	4.5	mΩ
R_{thJC}	DC current	1.05	K/W
R_{thJH}	DC current	1.25	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

Dimensions in mm (1 mm = 0.0394")



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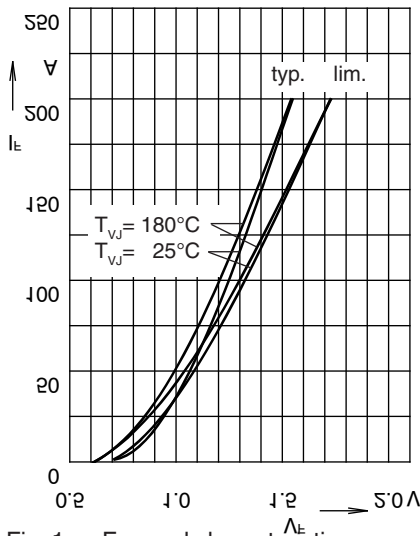


Fig. 1 Forward characteristics

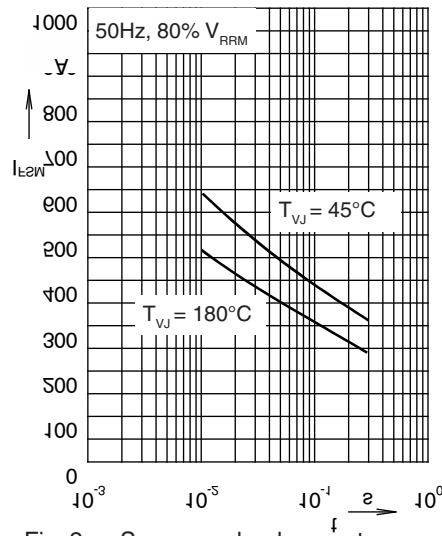


Fig. 2 Surge overload current
 I_{FSM} : crest value, t: duration

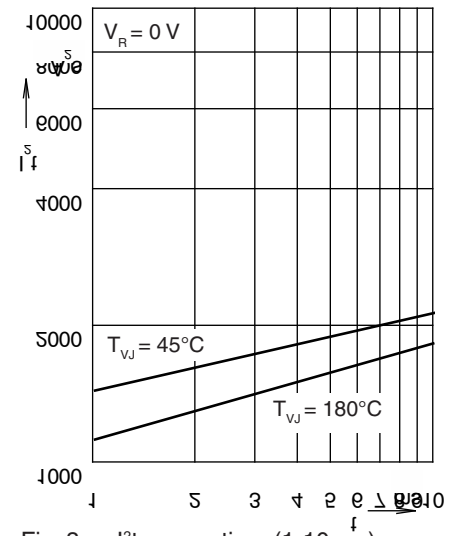


Fig. 3 I^2t versus time (1-10 ms)

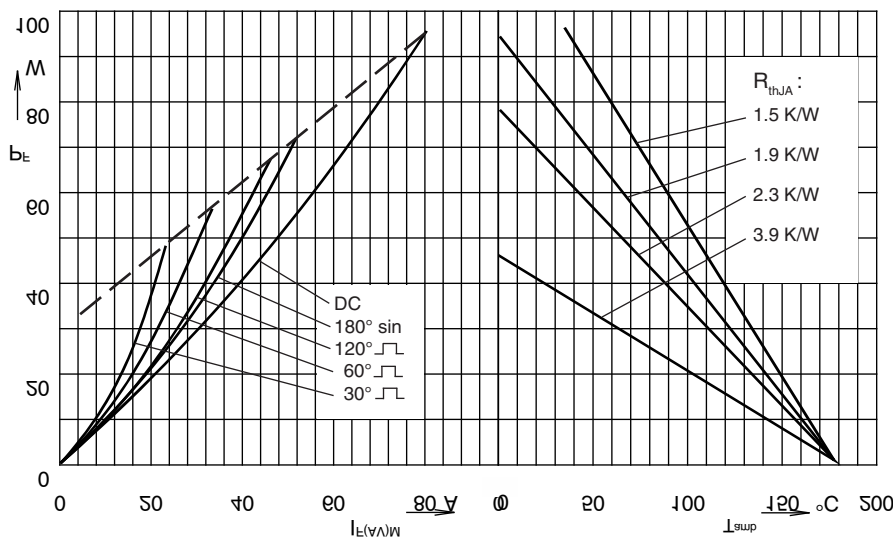


Fig. 4 Power dissipation versus forward current and ambient temperature

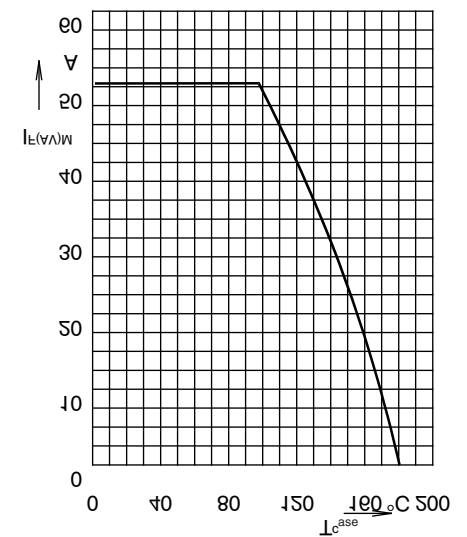


Fig. 5 Max. forward current at case temperature 180° sine

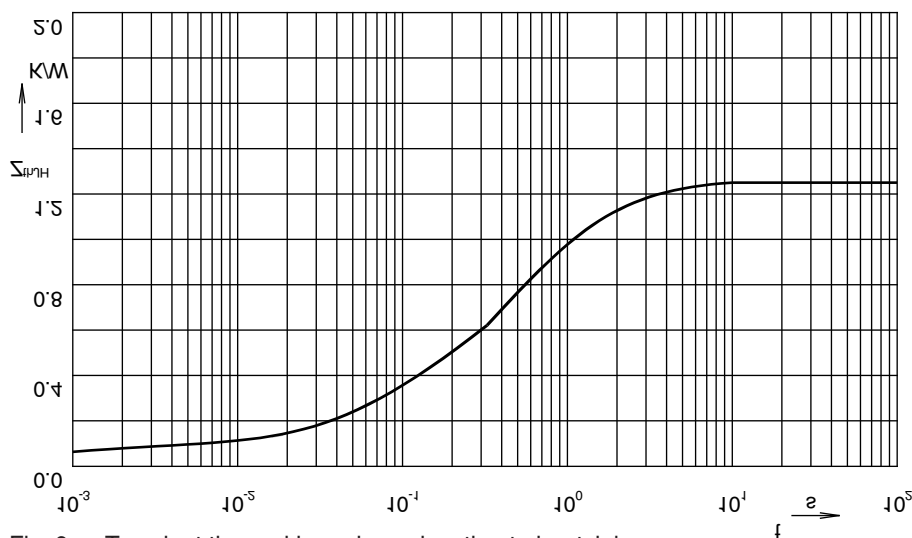


Fig. 6 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d :

d	R_{thJH} (K/W)
DC	1.25
180°	1.37
120°	1.47
60°	1.74
30°	2.08

Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.10	0.0012
2	0.25	0.1181
3	0.70	0.6540
4	0.20	2.0