

Rectifier Diode Avalanche Diode

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

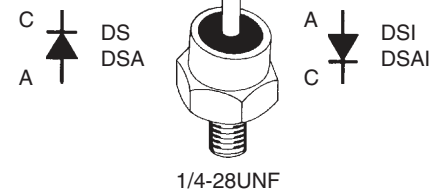
$$I_{F(RMS)} = 160 \text{ A}$$

$$I_{F(AV)M} = 110 \text{ A}$$

V_{RSM} V	$V_{(BR)min}$ ① V	V_{RRM} V	Anode on stud	Cathode on stud
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}	$T_{VJ} = 45^{\circ}\text{C};$		
	$V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	1400 A
		$t = 8.3 \text{ ms (60 Hz), sine}$	1500 A
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms (50 Hz), sine}$	1250 A
I_{pt}	$T_{VJ} = 45^{\circ}\text{C}$	$t = 10 \text{ ms (50 Hz), sine}$	9800 A ² s
	$V_R = 0$	$t = 8.3 \text{ ms (60 Hz), sine}$	9450 A ² s
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms (50 Hz), sine}$	7820 A ² s
	$V_R = 0$	$t = 8.3 \text{ ms (60 Hz), sine}$	7210 A ² s
T_{VJ}		-40...+180	$^{\circ}\text{C}$
T_{VJM}		180	$^{\circ}\text{C}$
T_{stg}		-40...+180	$^{\circ}\text{C}$
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

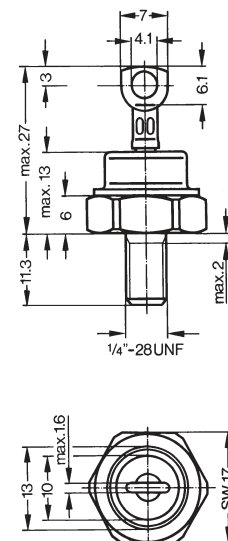
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits

Symbol	Test Conditions	Characteristic Values	
I_R	$T_{VJ} = T_{VJM}, V_R = V_{RRM}$	$\leq$	6 mA
V_F	$I_F = 150 \text{ A}; T_{VJ} = 25^{\circ}\text{C}$	$\leq$	1.17 V
V_{T0}	For power-loss calculations only	0.75	V
r_T	$T_{VJ} = T_{VJM}$	2	m Ω
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

Dimensions in mm (1 mm = 0.0394")



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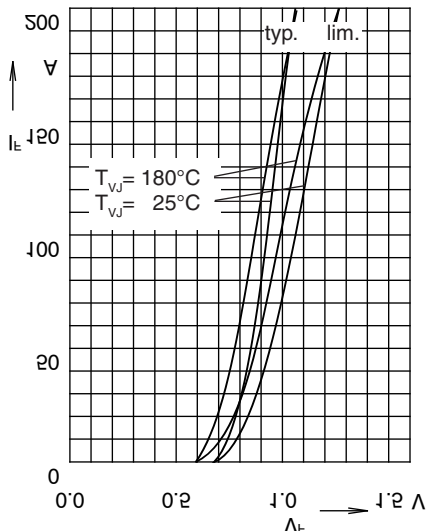


Fig. 1 Forward characteristics

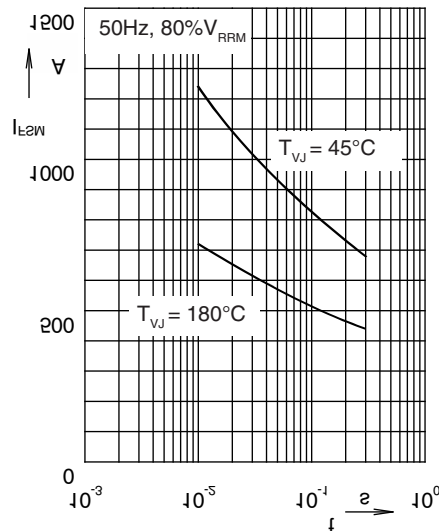


Fig. 2 Surge overload current
 I_{FSM} : crest value, t: duration

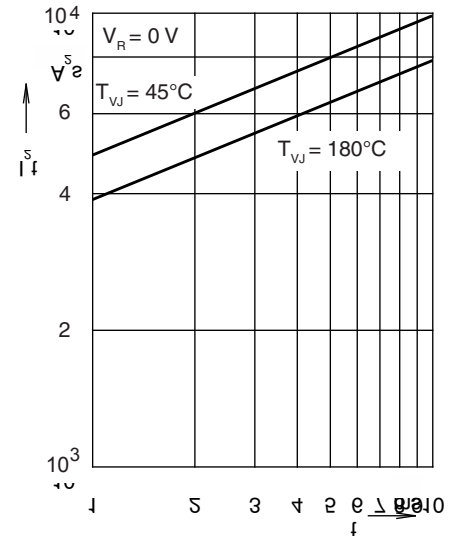


Fig. 3 I^2t versus time (1-10 ms)

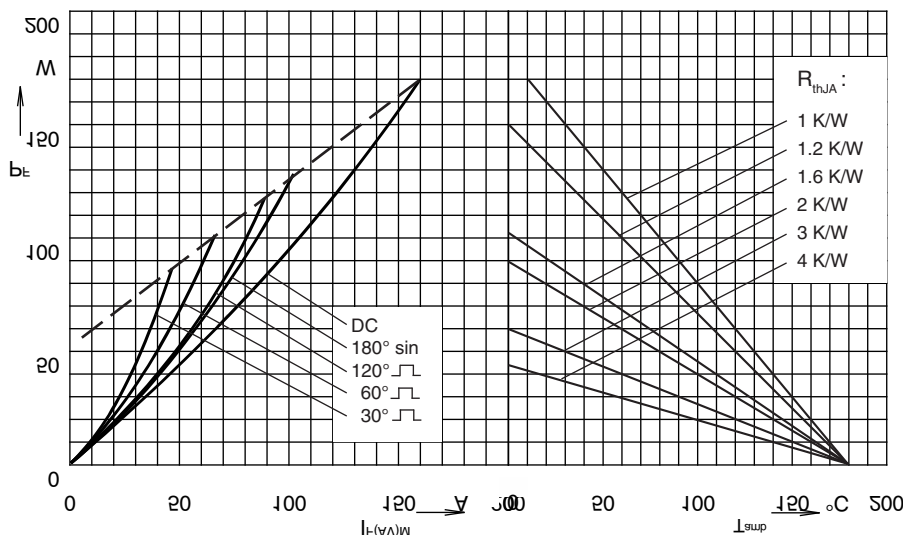


Fig. 4 Power dissipation versus forward current and ambient temperature

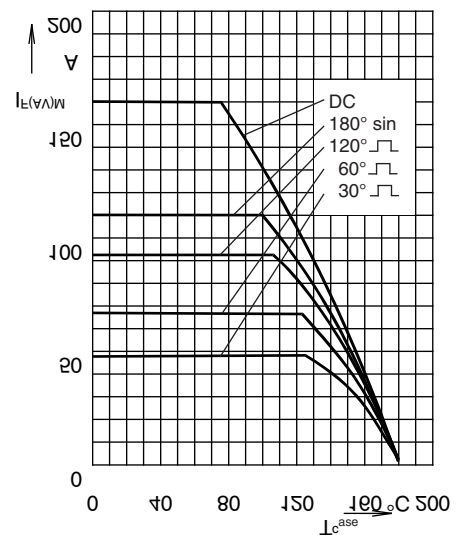


Fig. 5 Max. forward current at case temperature

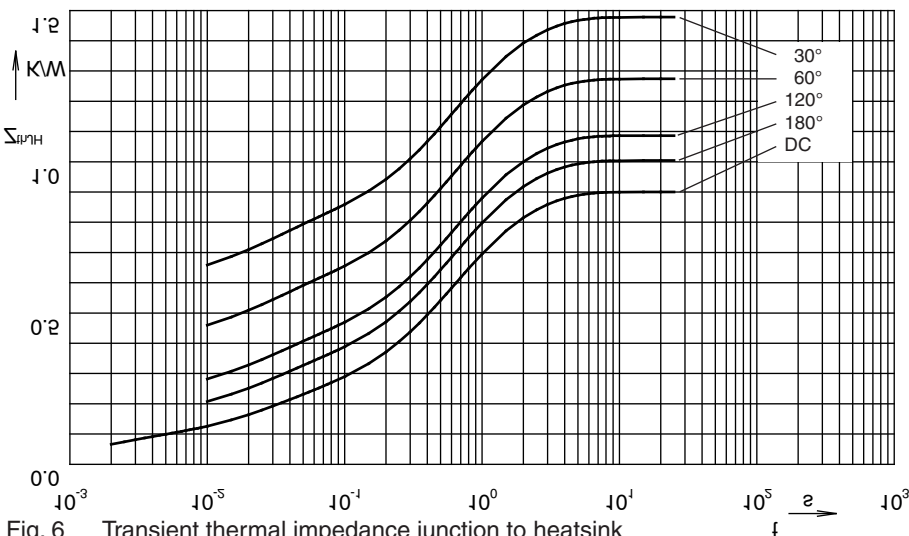


Fig. 6 Transient thermal impedance junction to heatsink

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