

Rectifier Diodes

Avalanche Diodes

V_{RSM}	$V_{(BR)min}$ ①	V_{RRM}	Anode		Cathode	
V	V	V	on	stud	on	stud
900	-	800	DS	110-08F	DSI	110-08F
1300	-	1200	DS	110-12F	DSI	110-12F
1300	1300	1200	DSA	110-12F	DSAI	110-12F
1700	1750	1600	DSA	110-16F	DSAI	110-16F
1900	1950	1800	DSA	110-18F	DSAI	110-18F

① Only for Avalanche Diodes

Symbol	Test	Conditions	Maximum	Rated
$I_{F(RMS)}$	$T_{(vj)} = T_{(vj)m}$		250	A
$I_{F(AV)M}$	$T_{case} = 100^{\circ}C$; 180° sine		160	A
P_{RSM}	DSA(I) types, $T_{(vj)} = T_{(vj)m}$, $t_p = 10 \mu s$		35	kW
I_{FSM}	$T_{(vj)} = 45^{\circ}C$; $V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	3150	A
		$t = 8.3 \text{ ms (60 Hz), sine}$	3380	A
$I^2 t$	$T_{(vj)} = 45^{\circ}C$; $V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	2800	A
		$t = 8.3 \text{ ms (60 Hz), sine}$	3000	A
$I^2 t$	$T_{(vj)} = 45^{\circ}C$; $V_R = 0$	$t = 10 \text{ ms (50 Hz), sine}$	49 600	A ² s
		$t = 8.3 \text{ ms (60 Hz), sine}$	48 000	A ² s
$T_{(vj)}$	$T_{(vj)m}$		-40...+180	°C
			180	°C
T_{stg}			-40...+180	°C
M_d	Mounting torque		16-20	Nm
			142-177	lb.in.
Weight			130	g

Symbol	Test	Conditions	Characteristic	Values
I_R	$T_{(vj)} = T_{(vj)m}$; $V_R = V_{RRM}$		\leq	10 mA
V_F	$I_F = 500 \text{ A}$; $T_{(vj)} = 25^{\circ}C$		\leq	1.4 V
V_{T0}	For power-loss calculations only			0.85 V
r_T	$T_{(vj)} = T_{(vj)m}$			1.1 mΩ
R_{thJC}	DC current	180° sine		0.35 K/W
		180° sine		0.39 K/W
R_{thJH}	DC current			0.45 K/W
d_s	Creepage distance on surface			4.25 mm
d_A	Strike distance through air			4.25 mm
a	Max. allowable acceleration			100 m/s ²

Data according to IEC 747-2

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IXYS Corporation

3540 Bassett Street, Santa Clara, CA 95054

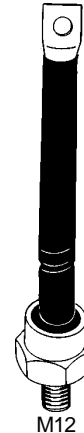
Tel: 408-982-0700 Fax: 408-496-0670

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

$I_{F(RMS)} = 250 \text{ A}$

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

DO-205 AC



A = Anode
C = Cathode

Features

- International standard package, JEDEC DO-205 AC (~DO30)
- Planar glassivated chips

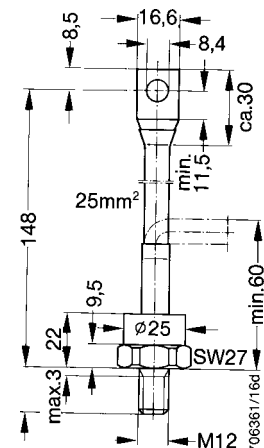
Applications

- High power rectifiers
- DC supplies
- 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")



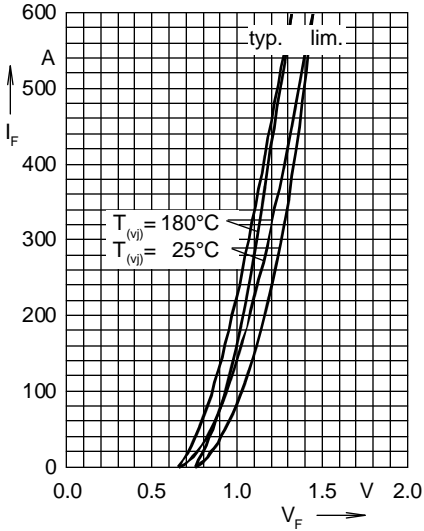


Fig. 1 Forward characteristics

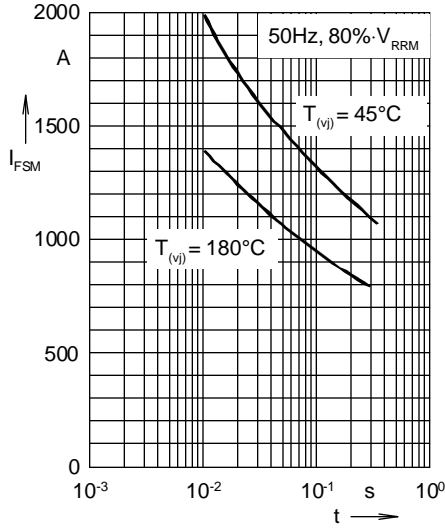


Fig. 2 Surge overload current
 I_{FSM} : Crest value, t : duration

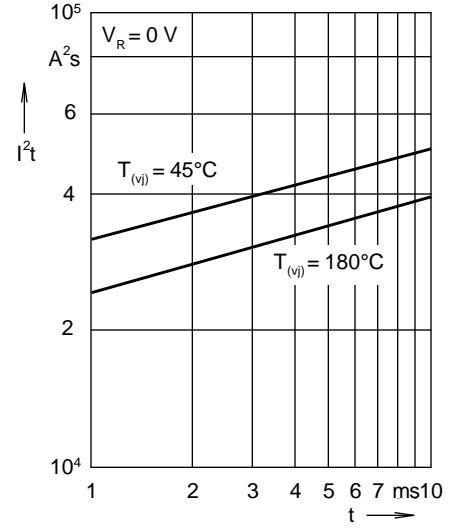


Fig. 3 I^2t versus time (1-10 ms)

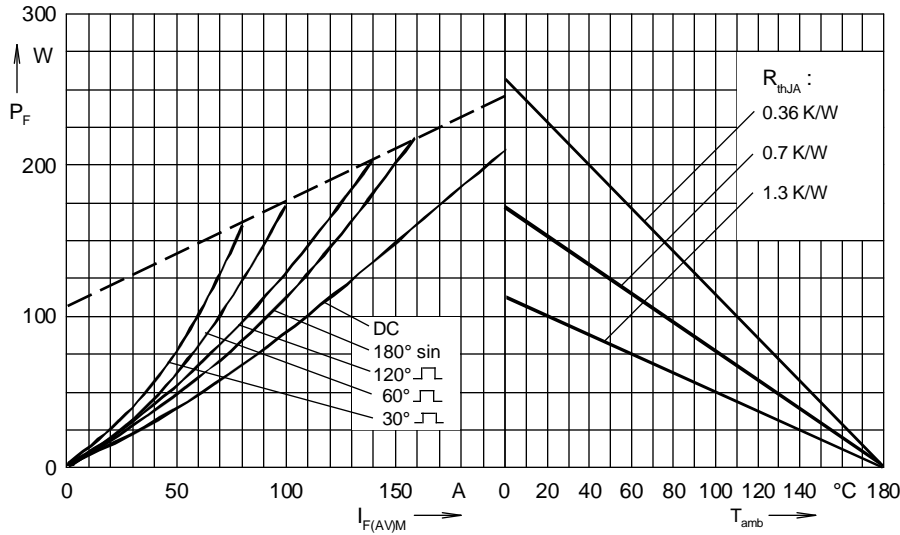


Fig. 4 Power dissipation versus forward current and ambient temperature

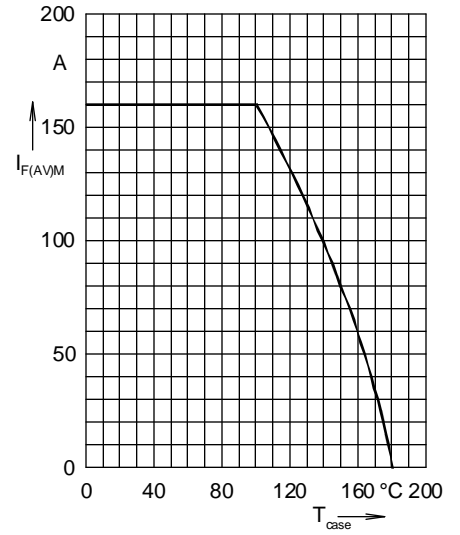


Fig. 5 Max. forward current at case temperature 180° sine

R_{thJH} for various conduction angles d :

d	R_{thJH} (K/W)
DC	0.45
180°	0.516
120°	0.567
60°	0.660
30°	0.733

Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.06713	0.003
2	0.06242	0.094
3	0.22045	3.846
4	0.10	3.2

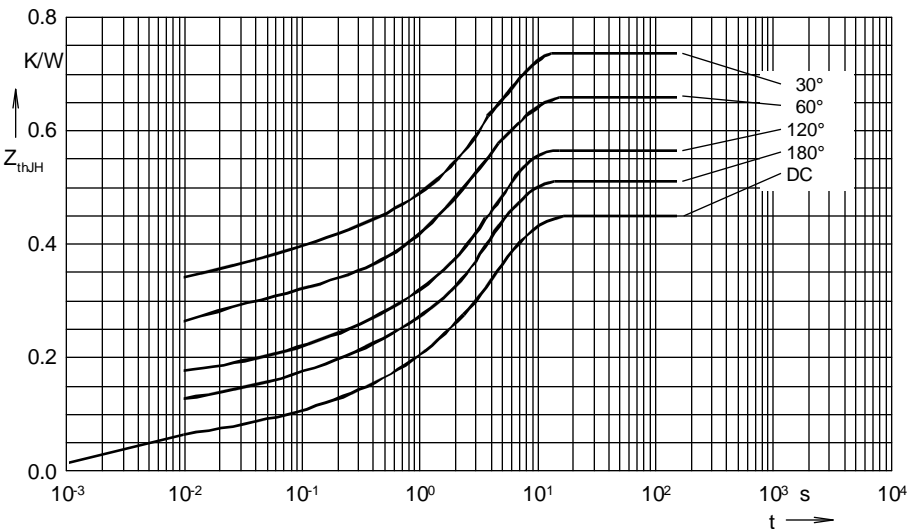


Fig. 6 Transient thermal impedance junction to heatsink

IXYS MOSFETS and IGBTs are covered by one or more of the following U.S. patents:
4,835,592 4,881,106 5,017,508 5,049,961 5,187,117 5,486,715
4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025