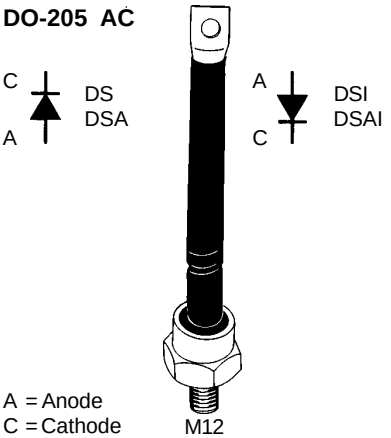
Rectifier Diodes
Avalanche Diodes

V_{RRM} = 800 - 1800 V
$I_{F(RMS)}$ = 250 A
$I_{F(AV)M}$ = 160 A

V_{RSM} V	$V_{(BR)min}$ ① V	V_{RRM} V	Anode on stud	Cathode 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

DO-205 AC



Symbol	Test Conditions	Maximum Ratings	
$I_{F(RMS)}$	$T_{(vj)} = T_{(vj)m}$	250	A
$I_{F(AV)M}$	T_{case} = 100°C; 180° sine	160	A
P_{RSM}	DSA(I) types, $T_{(vj)} = T_{(vj)m}$, t_p = 10 µs	35	kW
I_{FSM}	$T_{(vj)}$ = 45°C; t = 10 ms (50 Hz), sine	3150	A
	V_R = 0 t = 8.3 ms (60 Hz), sine	3380	A
	$T_{(vj)} = T_{(vj)m}$ t = 10 ms (50 Hz), sine	2800	A
	V_R = 0 t = 8.3 ms (60 Hz), sine	3000	A
I^2t	$T_{(vj)}$ = 45°C t = 10 ms (50 Hz), sine	49 600	A^2s
	V_R = 0 t = 8.3 ms (60 Hz), sine	48 000	A^2s
	$T_{(vj)} = T_{(vj)m}$ t = 10 ms (50 Hz), sine	39 200	A^2s
	V_R = 0 t = 8.3 ms (60 Hz), sine	37 800	A^2s
$T_{(vj)}$		-40...+180	°C
$T_{(vj)m}$		180	°C
T_{stg}		-40...+180	°C
M_d	Mounting torque	16-20	Nm
		142-177	lb.in.
Weight		130	g

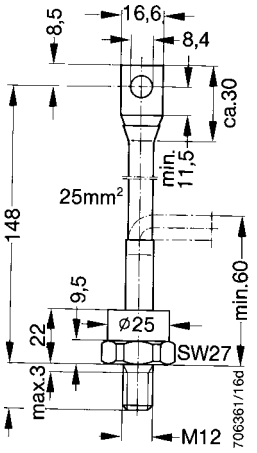
Symbol	Test Conditions	Characteristic Values		
I_R	$T_{(vj)} = T_{(vj)m}$; $V_R = V_{RRM}$	≤	10	mA
V_F	I_F = 500 A; $T_{(vj)}$ = 25°C	≤	1.4	V
V_{T0}	For power-loss calculations only		0.85	V
r_T	$T_{(vj)} = T_{(vj)m}$		1.1	mΩ
R_{thJC}	DC current		0.35	K/W
	180° sine		0.39	K/W
R_{thJH}	DC current		0.45	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

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")



Data according to IEC 747-2
IXYS reserves the right to change limits, test conditions and dimensions

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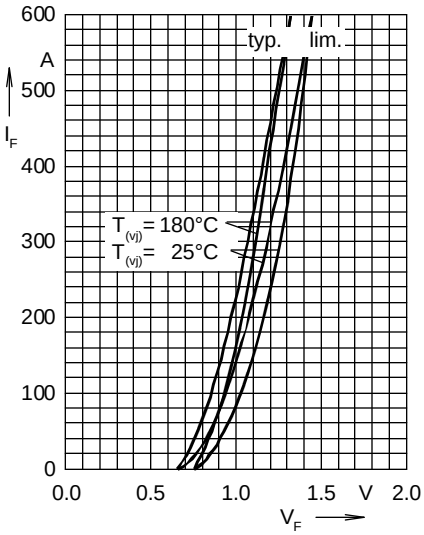

Fig. 1 Forward characteristics

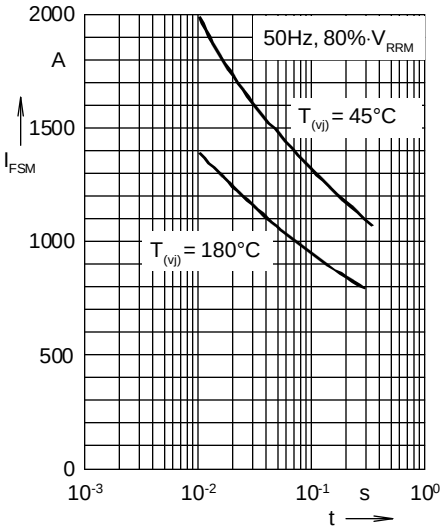

Fig. 2 Surge overload current
I_{FSM}: Crest value, t: duration

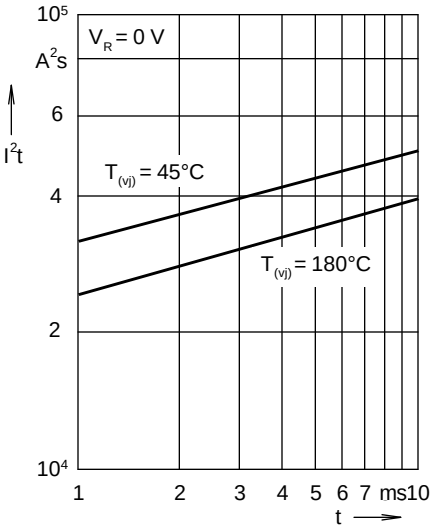

Fig. 3 I^2t versus time (1-10 ms)

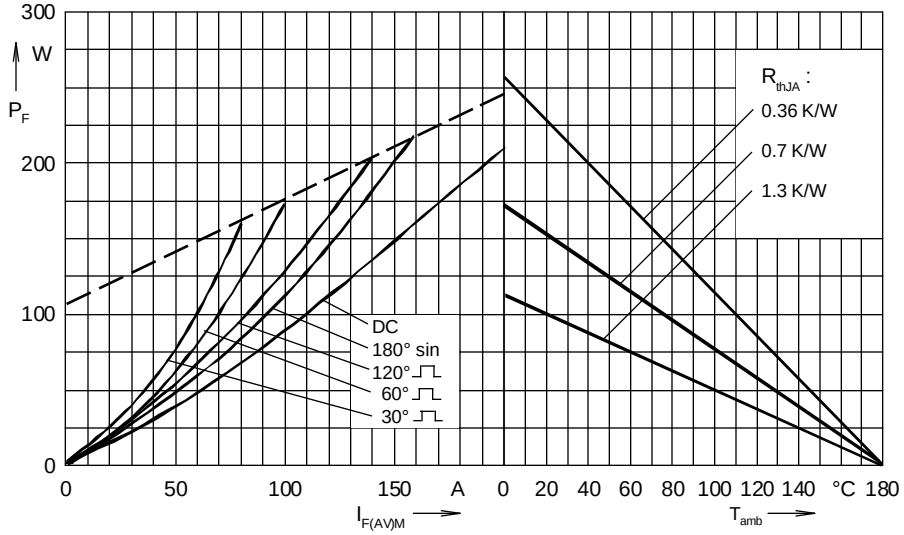

Fig. 4 Power dissipation versus forward current and ambient temperature

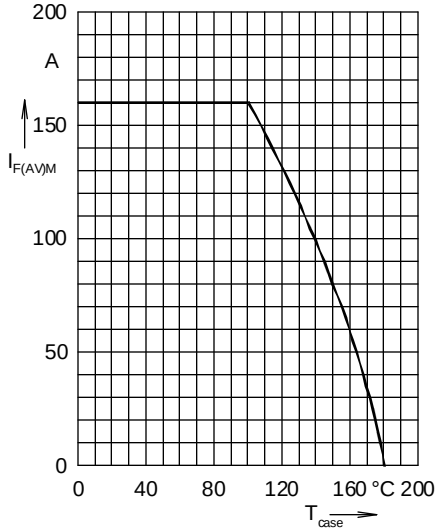

Fig. 5 Max. forward current at case temperature 180° sine

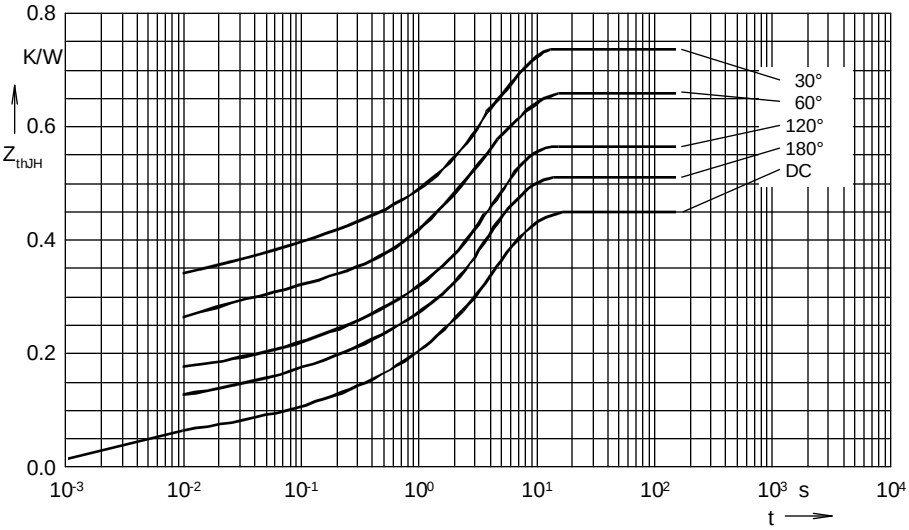

Fig. 6 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d:

d	R_{thJH} (K/W)
DC	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