Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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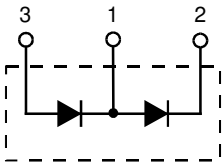
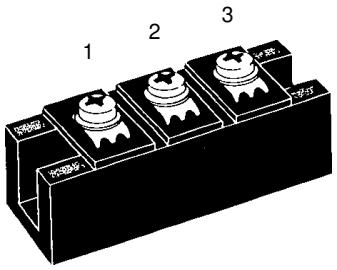
High Power Diode Modules

I_{FRMS} = 2x 300 A
I_{FAVM} = 2x 190 A
V_{RRM} = 800-1800 V

V_{RSM} V	V_{RRM} V	Type
900	800	MDD 172-08N1
1300	1200	MDD 172-12N1
1500	1400	MDD 172-14N1
1700	1600	MDD 172-16N1
1900	1800	MDD 172-18N1





Symbol	Test Conditions		Maximum Ratings	
I_{FRMS}	$T_{VJ} = T_{VJM}$		300	A
I_{FAVM}	T_C = 100°C; 180° sine		190	A
I_{FSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	6600	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	7290	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	5600	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	6200	A
$\int i^2dt$	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	218 000	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	221 000	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	157 000	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	160 000	A^2s
T_{VJ}			-40...+150	°C
T_{VJM}			150	°C
T_{stg}			-40...+125	°C
V_{ISOL}	50/60 Hz, RMS	t = 1 min	3000	V~
	$I_{ISOL} \leq$ 1 mA	t = 1 s	3600	V~
M_d	Mounting torque (M6)		2.25-2.75/20-25	Nm/lb.in.
	Terminal connection torque (M6)		4.5-5.5/40-48	Nm/lb.in.
Weight	Typical including screws		120	g

Symbol	Test Conditions		Characteristic Values	
I_R	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$		20	mA
V_F	I_F = 300 A; T_{VJ} = 25°C		1.15	V
V_{T0}	For power-loss calculations only		0.8	V
r_T	$T_{VJ} = T_{VJM}$		0.8	mΩ
Q_S	T_{VJ} = 125°C; I_F = 300 A, -di/dt = 50 A/µs		550	µC
I_{RM}			235	A
R_{thJC}	per diode; DC current	other values see Fig. 6/7	0.21	K/W
	per module		0.105	K/W
R_{thJK}	per diode; DC current		0.31	K/W
	per module		0.155	K/W
d_S	Creepage distance on surface		12.7	mm
d_A	Strike distance through air		9.6	mm
a	Maximum allowable acceleration		50	m/s^2

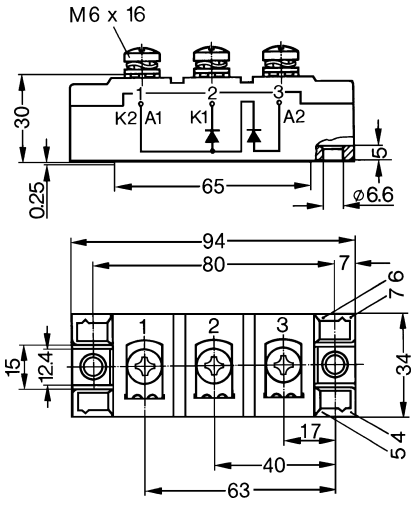
Data according to IEC 60747 and refer to a single diode unless otherwise stated.
IXYS reserves the right to change limits, test conditions and dimensions

Features
- International standard package
- Direct copper bonded Al_2O_3 -ceramic base plate
- Planar passivated chips
- Isolation voltage 3600 V~
- UL registered, E 72873

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")



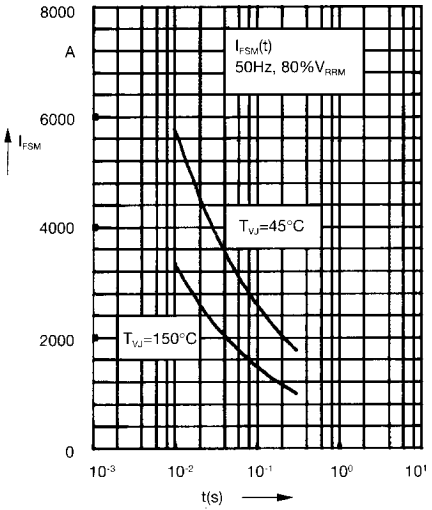


Fig. 1 Surge overload current
I_{FSM}: Crest value, t: duration

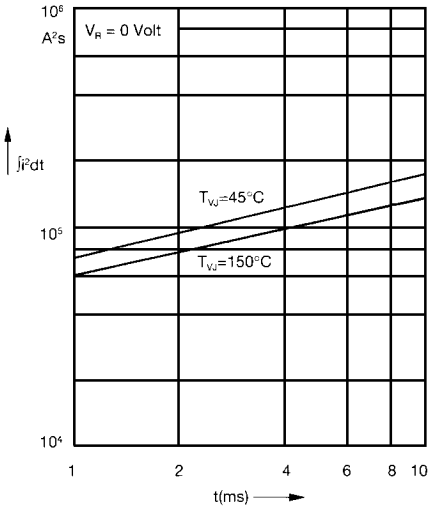


Fig. 2 $\int i^2dt$ versus time (1-10 ms)

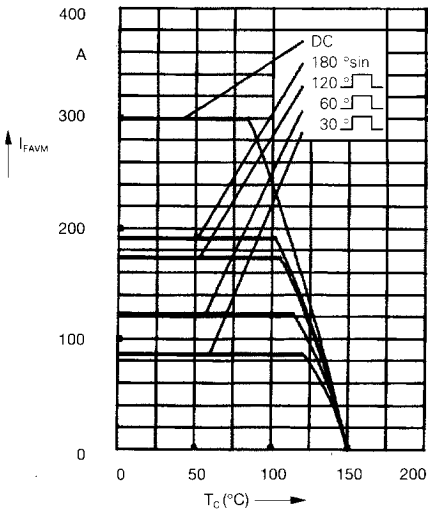


Fig. 2a Maximum forward current at case temperature

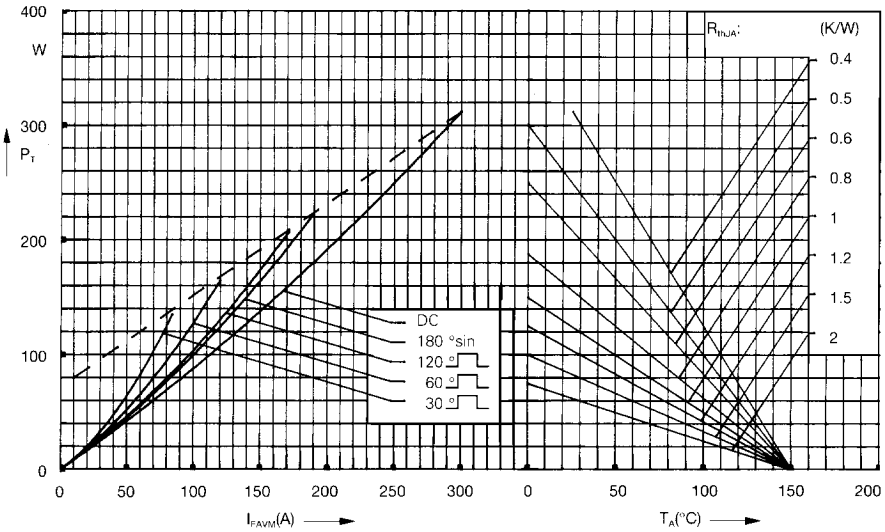


Fig. 3 Power dissipation versus forward current and ambient temperature (per diode)

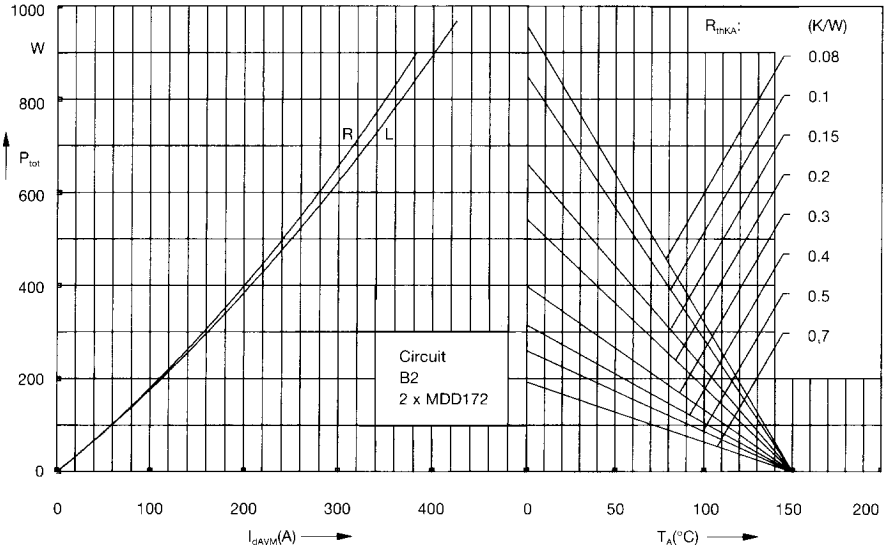


Fig. 4 Single phase rectifier bridge: Power dissipation versus direct output current and ambient temperature
R = resistive load
L = inductive load

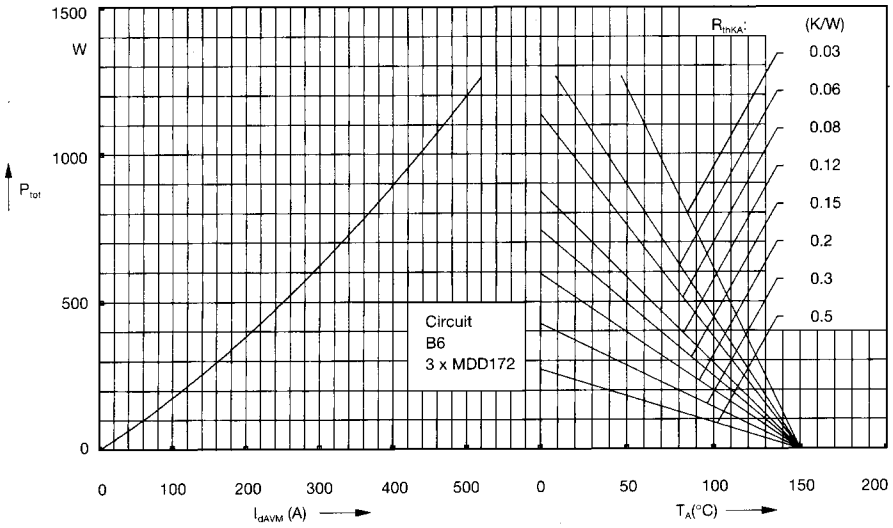


Fig. 5 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

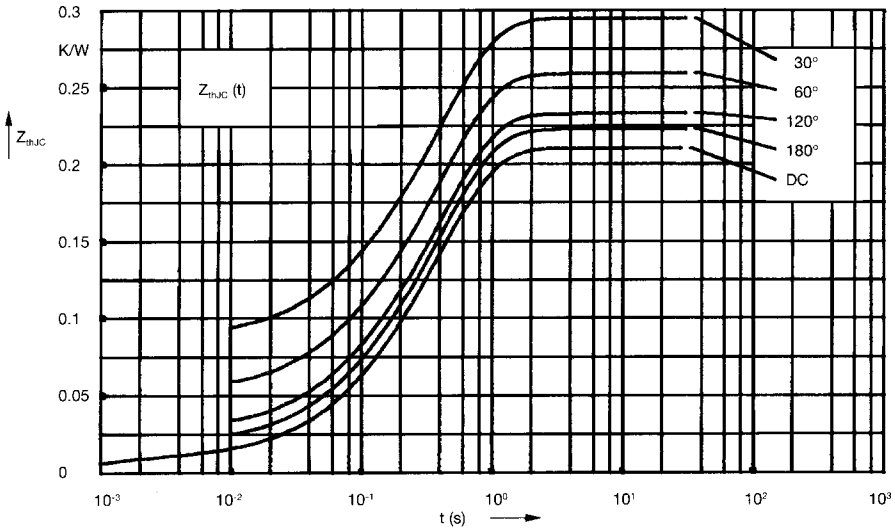


Fig. 6 Transient thermal impedance junction to case (per diode)

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.210
180°	0.223
120°	0.233
60°	0.260
30°	0.295

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0087	0.001
2	0.0163	0.065
3	0.185	0.4

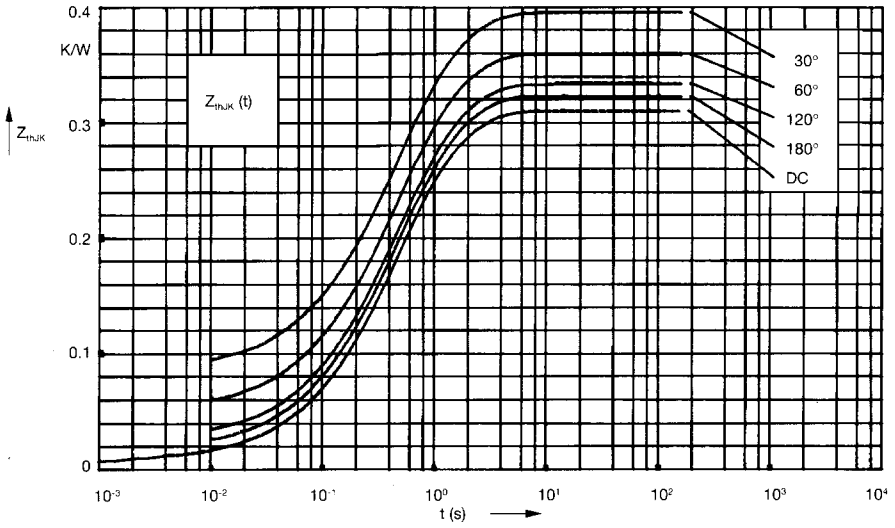


Fig. 7 Transient thermal impedance junction to heatsink (per diode)

R_{thJK} for various conduction angles d:

d	R_{thJK} (K/W)
DC	0.31
180°	0.323
120°	0.333
60°	0.360
30°	0.395

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0087	0.001
2	0.0163	0.065
3	0.185	0.4
4	0.1	1.29