Chipsmall

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!

Contact us

Standard Rectifier

3~ Rectifier		
V_{RRM} =	1600 V
I_{DAV} =	150 A
I_{FSM} =	800 A

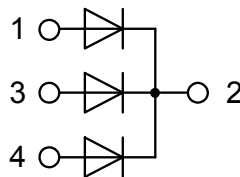Half 3~ Bridge, Common Cathode

Part number

DMA150YC1600NA
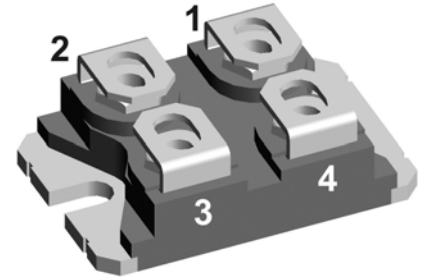
Backside: isolated

E72873

Features / Advantages:
- Planar passivated chips
- Very low leakage current
- Very low forward voltage drop
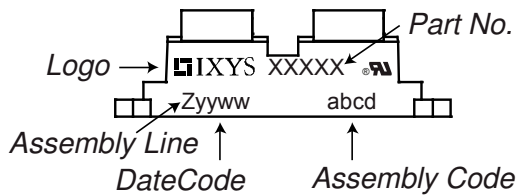- Improved thermal behaviour

Applications:
- Diode for main rectification
- For single and three phase bridge configurations

Package: SOT-227B (minibloc)
- Isolation Voltage: 3000 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Base plate: Copper internally DCB isolated
- Advanced power cycling

IXYS reserves the right to change limits, conditions and dimensions.

Data according to IEC 60747 and per semiconductor unless otherwise specified

20130128a

IXYS

Rectifier

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage		T_{VJ} = 25°C			1700	V
V_{RRM}	max. repetitive reverse blocking voltage		T_{VJ} = 25°C			1600	V
I_R	reverse current	V_R = 1600 V	T_{VJ} = 25°C			100	µA
		V_R = 1600 V	T_{VJ} = 150°C			1.5	mA
V_F	forward voltage drop	I_F = 50 A	T_{VJ} = 25°C			1.21	V
		I_F = 150 A				1.68	V
		I_F = 50 A	T_{VJ} = 125 °C			1.15	V
		I_F = 150 A				1.75	V
I_{DAV}	bridge output current	T_C = 95°C	T_{VJ} = 150°C			150	A
		rectangular d = ⅓					
V_{F0}	threshold voltage	} for power loss calculation only	T_{VJ} = 150°C			0.82	V
r_F	slope resistance					6.3	mΩ
R_{thJC}	thermal resistance junction to case					0.6	K/W
R_{thCH}	thermal resistance case to heatsink				0.10		K/W
P_{tot}	total power dissipation	T_C = 25°C				165	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			800	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			865	A
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			680	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			735	A
I^2t	value for fusing	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			3.20	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			3.12	kA²s
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			2.31	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			2.25	kA²s
C_J	junction capacitance	V_R = 400 V; f = 1 MHz	T_{VJ} = 25°C		25		pF

Package   SOT-227B (minibloc)

Symbol	Definition	Conditions		min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal				150	A
T_{stg}	storage temperature			-40		150	°C
T_{VJ}	virtual junction temperature			-40		150	°C
Weight					30		g
M_D	mounting torque			1.1		1.5	Nm
M_T	terminal torque			1.1		1.5	Nm
$d_{Spp/App}$	creepage distance on surface | striking distance through air	terminal to terminal	10.5	3.2			mm
$d_{Spb/Apb}$		terminal to backside	8.6	6.8			mm
V_{ISOL}	isolation voltage	t = 1 second		3000			V
		t = 1 minute	50/60 Hz, RMS; $I_{ISOL} \le 1$ mA	2500			V

Product Marking

Logo →
IXYS XXXXX ® RU
Part No.
Zyyww   abcd
Assembly Line ↑
DateCode
Assembly Code

Part number

D = Diode
M = Standard Rectifier
A = (up to 1800V)
150 = Current Rating [A]
YC = Half 3~ Bridge, Common Cathode
1600 = Reverse Voltage [V]
NA = SOT-227B (minibloc)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DMA150YC1600NA	DMA150YC1600NA	Tube	10	509174

Similar Part	Package	Voltage class
DMA150YA1600NA	SOT-227B (minibloc)	1600

Equivalent Circuits for Simulation   *on die level* T_{VJ} = 150 °C

I → V₀ — R₀ —
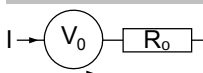
Rectifier

$V_{0\,max}$	threshold voltage	0.82	V
$R_{0\,max}$	slope resistance *	4.4	mΩ

Outlines   SOT-227B (minibloc)

Nut M4 DIN 934
Lens Head
Screw M4x8
DIN 7985
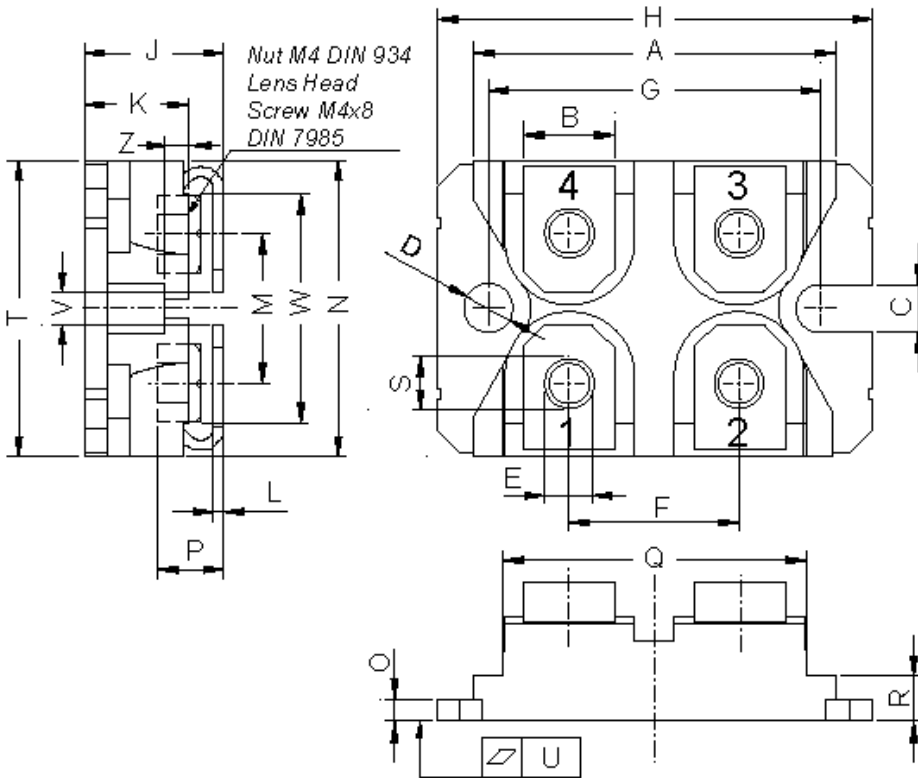
Dim.	Millimeter		Inches	
	min	max	min	max
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.23	1.488	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.74	0.84	0.029	0.033
M	12.50	13.10	0.492	0.516
N	25.15	25.42	0.990	1.001
O	1.95	2.13	0.077	0.084
P	4.95	6.20	0.195	0.244
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.167
S	4.55	4.85	0.179	0.191
T	24.59	25.25	0.968	0.994
U	-0.05	0.10	-0.002	0.004
V	3.20	5.50	0.126	0.217
W	19.81	21.08	0.780	0.830
Z	2.50	2.70	0.098	0.106

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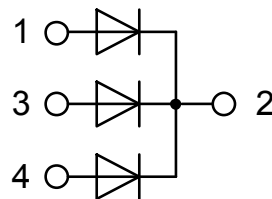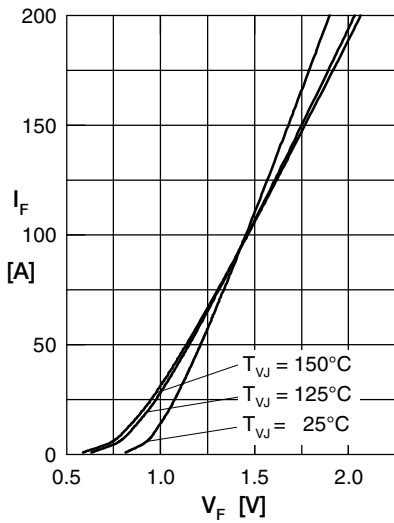
Rectifier
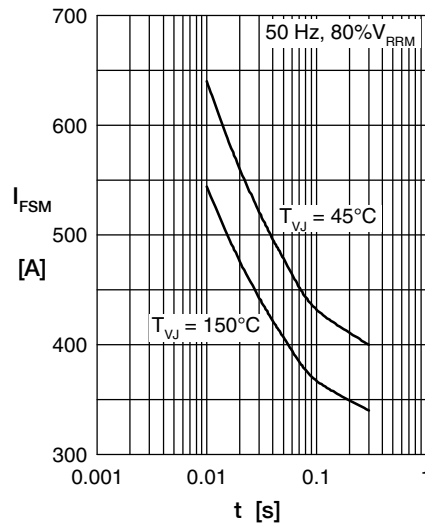
Fig. 1 Forward current versus voltage drop per diode

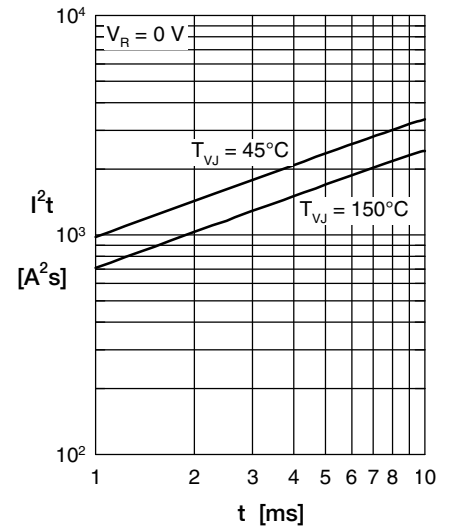Fig. 2 Surge overload current

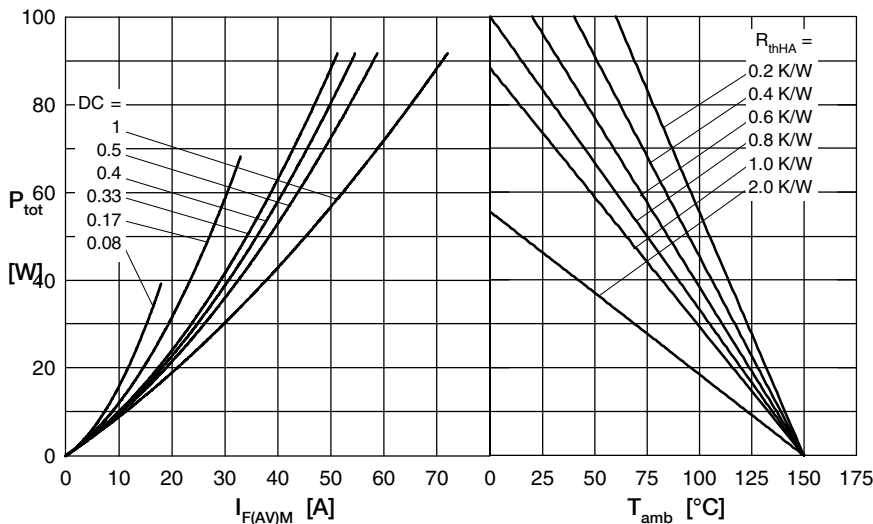Fig. 3 I^2t versus time per diode

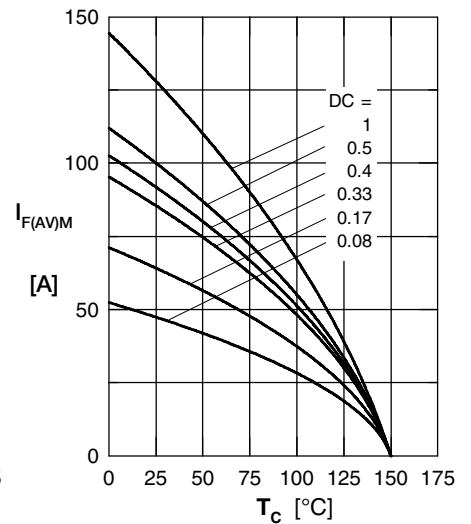Fig. 4 Power dissipation versus direct output current and ambient temperature

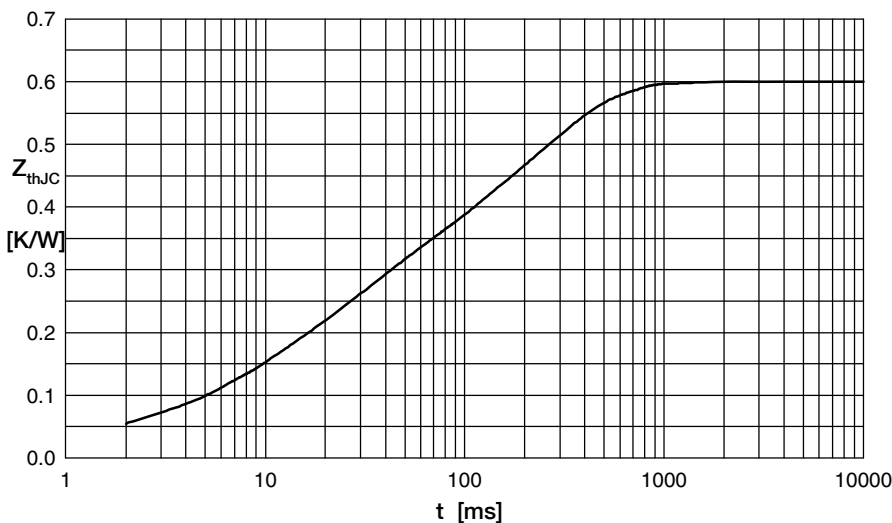Fig. 5 Max. forward current versus case temperature

Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.017	0.01
2	0.013	0.00001
3	0.010	0.01
4	0.04	0.04
5	0.12	0.3