

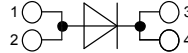
## Standard Rectifier

Single Diode

$$\begin{aligned} V_{RRM} &= 1600 \text{ V} \\ I_{FAV} &= 150 \text{ A} \\ V_F &= 1.13 \text{ V} \end{aligned}$$

Part number

DMA 150 E 1600 NA



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:

- Housing: SOT-227B (minibloc)
- Industry standard outline
- Cu base plate internal DCB isolated
- Isolation Voltage 3000 V
- Epoxy meets UL 94V-0
- RoHS compliant

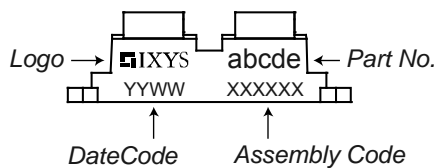
Symbol	Definition	Conditions	Ratings			Unit	
			min.	typ.	max.		
$V_{RRM}$	max. repetitive reverse voltage				1600	V	
$I_R$	reverse current	$V_R = 1600 \text{ V}$			200	$\mu\text{A}$	
		$V_R = 1600 \text{ V}$			3.5	mA	
$V_F$	forward voltage	$I_F = 150 \text{ A}$			1.23	V	
		$I_F = 300 \text{ A}$			1.47	V	
		$I_F = 150 \text{ A}$	$T_{VJ} = 125^\circ\text{C}$			1.13	V
		$I_F = 300 \text{ A}$	$T_{VJ} = 125^\circ\text{C}$			1.43	V
$I_{FAV}$	average forward current	rectangular $d = 0.5$	$T_C = 90^\circ\text{C}$		150	A	
$V_{FO}$	threshold voltage	} for power loss calculation only	$T_{VJ} = 150^\circ\text{C}$		0.83	V	
$r_F$	slope resistance				2	m $\Omega$	
$R_{thJC}$	thermal resistance junction to case				0.25	K/W	
$T_{VJ}$	virtual junction temperature			-40	150	$^\circ\text{C}$	
$P_{tot}$	total power dissipation		$T_C = 25^\circ\text{C}$		500	W	
$I_{FSM}$	max. forward surge current	$t = 10 \text{ ms}; (50 \text{ Hz}), \text{ sine}$	$T_{VJ} = 45^\circ\text{C}$		3.00	kA	
		$t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{ sine}$	$V_R = 0 \text{ V}$		3.24	kA	
		$t = 10 \text{ ms}; (50 \text{ Hz}), \text{ sine}$	$T_{VJ} = 150^\circ\text{C}$		2.55	kA	
		$t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{ sine}$	$V_R = 0 \text{ V}$		2.76	kA	
$I^2t$	value for fusing	$t = 10 \text{ ms}; (50 \text{ Hz}), \text{ sine}$	$T_{VJ} = 45^\circ\text{C}$		45.0	kA $^2\text{s}$	
		$t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{ sine}$	$V_R = 0 \text{ V}$		43.7	kA $^2\text{s}$	
		$t = 10 \text{ ms}; (50 \text{ Hz}), \text{ sine}$	$T_{VJ} = 150^\circ\text{C}$		32.5	kA $^2\text{s}$	
		$t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{ sine}$	$V_R = 0 \text{ V}$		31.6	kA $^2\text{s}$	
$C_J$	junction capacitance	$V_R = 400 \text{ V}; f = 1 \text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		60	pF	

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per pin <sup>1)</sup>			150	A
$R_{thCH}$	thermal resistance case to heatsink			0.10		K/W
$T_{stg}$	storage temperature		-40		150	°C
<b>Weight</b>				30		g
$M_D$	mounting torque		1.1		1.5	Nm
$M_T$	terminal torque		1.1		1.5	Nm
$V_{ISOL}$	isolation voltage	t = 1 second	3000			V
		t = 1 minute	2500			V
$d_s$	creepage distance on surface		8			mm
$d_A$	striking distance through air		4			mm

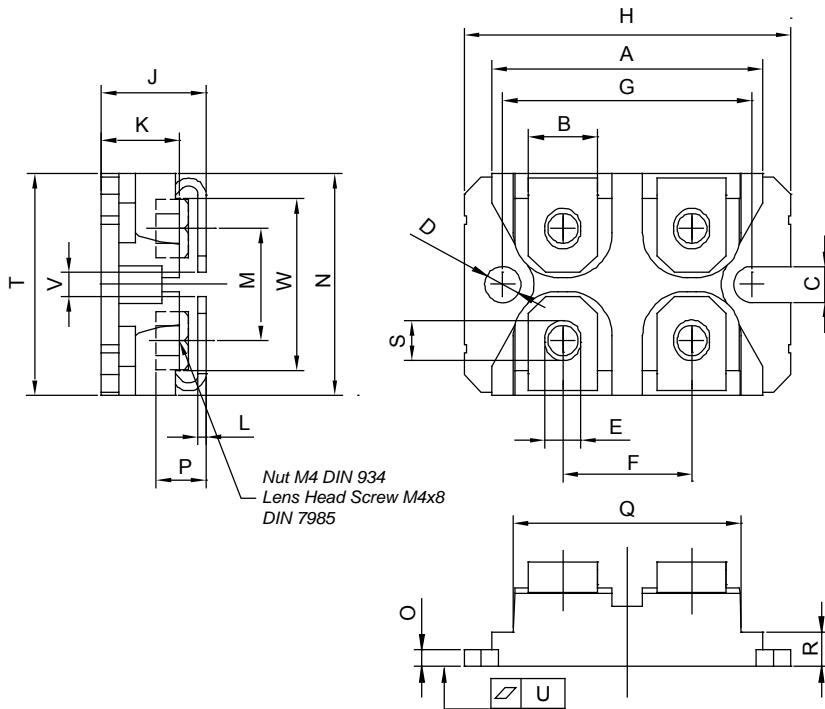
<sup>1)</sup>  $I_{RMS}$  is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.  
 In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

**Part number**

- D = Diode
- M = Standard Rectifier
- A = (up to 1800 V)
- 150 = Current Rating [A]
- E = Single Diode
- 1600 = Reverse Voltage [V]
- NA = SOT-227B (minibloc)

**Product Marking**


Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DMA 150 E 1600 NA	DMA150E1600NA	Tube	10	508942

**Outlines SOT-227B (minibloc)**


SYM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	31.50	31.88	1.240	1.255
B	7.80	8.20	.307	.323
C	4.09	4.29	.161	.169
D	4.09	4.29	.161	.169
E	4.09	4.29	.161	.169
F	14.91	15.11	.587	.595
G	30.12	30.30	1.186	1.193
H	37.80	38.23	1.489	1.505
J	11.68	12.22	.460	.481
K	8.92	9.60	.351	.378
L	0.76	0.84	.030	.033
M	12.60	12.85	.496	.506
N	25.15	25.42	.990	1.001
O	1.98	2.13	.078	.084
P	4.95	5.97	.195	.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	.155	.174
S	4.72	4.85	.186	.191
T	24.59	25.07	.968	.987
U	-.05	.10	-.002	.004
V	3.30	4.57	.130	.180
W	19.81	21.08	.780	.830