

# Standard Rectifier

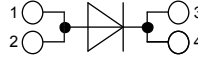
## Single Diode

$$V_{RRM} = 1600 \text{ V}$$

$$I_{FAV} = 150 \text{ A}$$

$$V_F = 1.13 \text{ V}$$

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

**Ratings**

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
		$I_F = 150 \text{ A}$			1.13	V
		$I_F = 300 \text{ A}$			1.43	V
$I_{FAV}$	average forward current	rectangular d = 0.5			150	A
$V_{F0}$	threshold voltage	} for power loss calculation only			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				500	W
$I_{FSM}$	max. forward surge current	t = 10 ms; (50 Hz), sine			3.00	kA
		t = 8,3 ms; (60 Hz), sine			3.24	kA
		t = 10 ms; (50 Hz), sine			2.55	kA
		t = 8,3 ms; (60 Hz), sine			2.76	kA
$I^2t$	value for fusing	t = 10 ms; (50 Hz), sine			45.0	kA <sup>2</sup> s
		t = 8,3 ms; (60 Hz), sine			43.7	kA <sup>2</sup> s
		t = 10 ms; (50 Hz), sine			32.5	kA <sup>2</sup> s
		t = 8,3 ms; (60 Hz), sine			31.6	kA <sup>2</sup> s
$C_J$	junction capacitance	$V_R = 400 \text{ V}; f = 1 \text{ MHz}$		60		pF

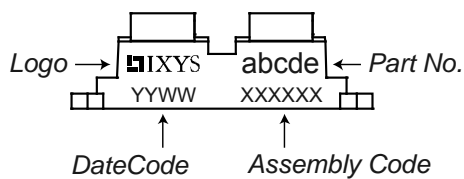
Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per pin <sup>1)</sup>			150	A
$R_{thCH}$	thermal resistance case to heatsink			0.10		K/W
$T_{stg}$	storage temperature		-40		150	°C
<b>Weight</b>				30		g
$M_D$	mounting torque		1.1		1.5	Nm
$M_T$	terminal torque		1.1		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.

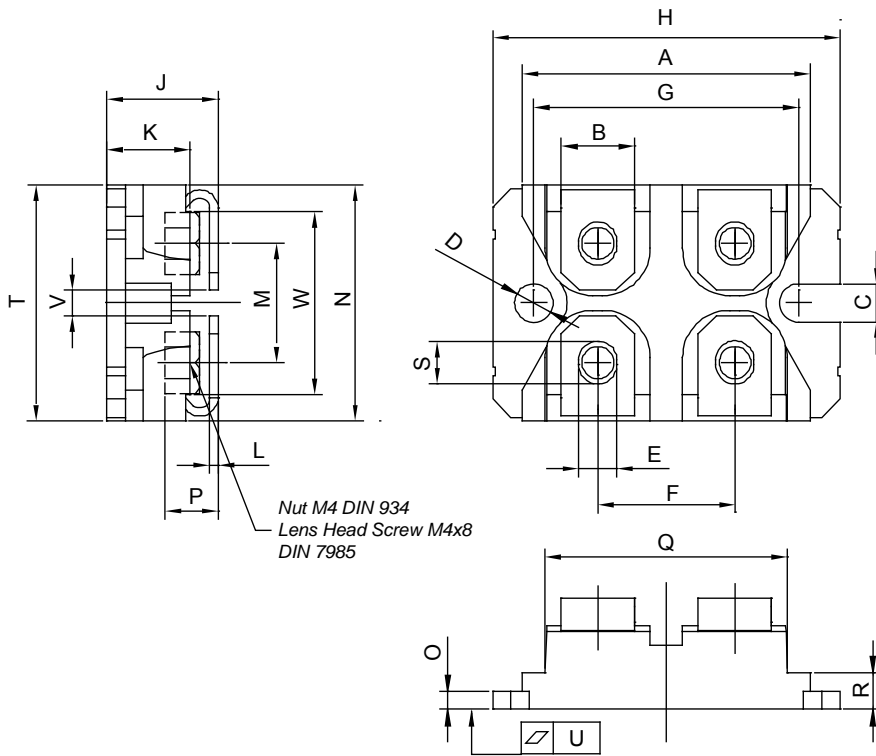
In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

**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