

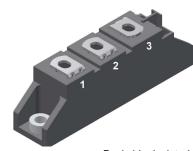
## **Standard Rectifier Module**

$V_{\text{RRM}}$	<i>=</i> 2x 1200 V			
I <sub>FAV</sub>	=	85 A		
VF	=	1.1 V		

Phase leg

Part number

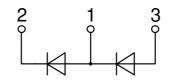
**MDMA85P1200TG** 



Backside: isolated



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### Features / Advantages:

- Package with DCB ceramic
- Improved temperature and power cycling
- Planar passivated chips
- Very low forward voltage drop
- Very low leakage current

### **Applications:**

- Diode for main rectification
- For single and three phase
- bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

### Package: TO-240AA

- Isolation Voltage: 4800 V~
- Industry standard outline
- RoHS compliant
- Height: 30 mm
- Base plate: DCB ceramic
- Reduced weight
- Advanced power cycling

#### **Disclaimer Notice**

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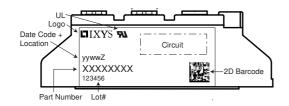
Rectifier					Rating	S	
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V <sub>RSM</sub>	max. non-repetitive reverse bloc	king voltage	$T_{VJ} = 25^{\circ}C$			1300	V
V <sub>RRM</sub>	max. repetitive reverse blocking	voltage	$T_{VJ} = 25^{\circ}C$			1200	V
I <sub>R</sub>	reverse current	V <sub>R</sub> = 1200 V	$T_{VJ} = 25^{\circ}C$			100	μA
		$V_{R}$ = 1200 V	$T_{vJ} = 150^{\circ}C$			2	mA
V <sub>F</sub>	forward voltage drop	I <sub>F</sub> = 85 A	$T_{VJ} = 25^{\circ}C$			1.15	V
		I <sub>F</sub> = 170 A				1.38	V
		I <sub>F</sub> = 85 A	T <sub>vJ</sub> = 125 °C			1.10	V
		$I_{F} = 170 \text{ A}$				1.39	V
FAV	average forward current	T <sub>c</sub> = 100°C	T <sub>vJ</sub> = 150°C			85	Α
		rectangular d = 0.5					
V <sub>F0</sub>	threshold voltage		T <sub>vj</sub> = 150°C			0.79	V
r <sub>F</sub>	slope resistance } for power	loss calculation only				3.5	mΩ
$\mathbf{R}_{thJC}$	thermal resistance junction to ca	ase				0.35	K/W
R <sub>thCH</sub>	thermal resistance case to heats	sink			0.2		K/W
P <sub>tot</sub>	total power dissipation		$T_c = 25^{\circ}C$			350	W
I <sub>FSM</sub>	max. forward surge current	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45^{\circ}C$			1.50	kA
		t = 8,3 ms; (60 Hz), sine	$V_{R} = 0 V$			1.62	kA
		t = 10 ms; (50 Hz), sine	T <sub>vj</sub> = 150°C			1.28	kA
		t = 8,3 ms; (60 Hz), sine	$V_{R} = 0 V$			1.38	kA
l²t	value for fusing	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45^{\circ}C$			11.3	kA²s
		t = 8,3 ms; (60 Hz), sine	$V_{R} = 0 V$			10.9	kA²s
		t = 10 ms; (50 Hz), sine	T <sub>vJ</sub> = 150°C			8.13	kA <sup>2</sup> s
		t = 8,3 ms; (60 Hz), sine	$V_{R} = 0 V$			7.87	kA²s
C	junction capacitance	$V_{R} = 400 \text{ V}; \text{ f} = 1 \text{ MHz}$	$T_{VJ} = 25^{\circ}C$		60		pF

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Package	Package TO-240AA				Ratings			
Symbol	Definition	Conditions			min.	typ.	max.	Unit
I <sub>RMS</sub>	RMS current	per terminal					200	Α
$\mathbf{T}_{v_J}$	virtual junction temperature				-40		150	°C
T <sub>op</sub>	operation temperature				-40		125	°C
T <sub>stg</sub>	storage temperature				-40		125	°C
Weight						76		g
M <sub>D</sub>	mounting torque				2.5		4	Nm
M <sub>T</sub>	terminal torque				2.5		4	Nm
d <sub>Spp/App</sub>	creepage distance on surface   striking distance through		terminal to terminal	13.0	9.7			mm
d <sub>Spb/Apb</sub>	creepage distance on surface   st	nking distance through an	terminal to backside	16.0	16.0			mm
V	isolation voltage	t = 1 second			4800			V
	t = 1 mir		50/60 Hz, RMS; liso∟ ≤ 1 mA		4000			v



### Part description

- M = Module
- D = Diode M = Standard Rectifier
- A = (up to 1800V) 85 = Current Rating [A]
- P = Phase leg 1200 = Reverse Voltage [V] TG = TO-240AA

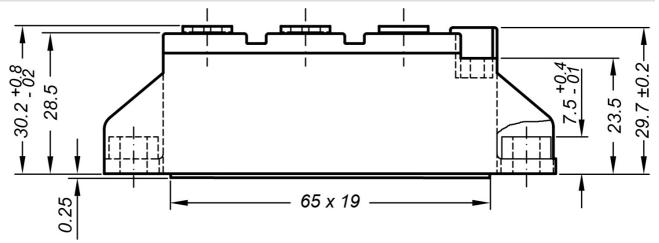
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	MDMA85P1200TG	MDMA85P1200TG	Box	36	513015

Equiva	alent Circuits for	Simulation	* on die level	$T_{VJ} = 150^{\circ}C$
	) Ro	Rectifier		
V <sub>0 max</sub>	threshold voltage	0.79		V
$\mathbf{R}_{0 \max}$	slope resistance *	2.3		mΩ

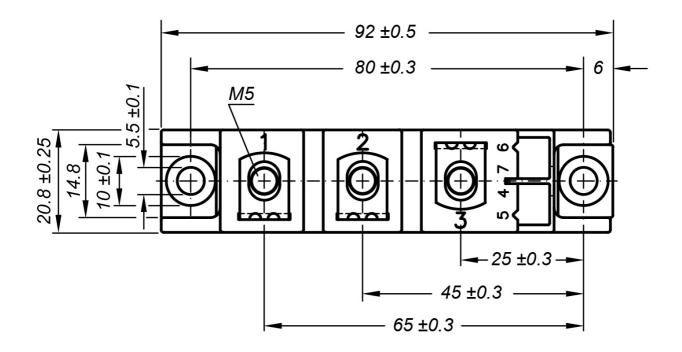
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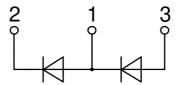


### Outlines TO-240AA



General tolerance: DIN ISO 2768 class "c"





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