

# FRED Module

Fast Recovery Epitaxial Diode

Common Anode

Preliminary

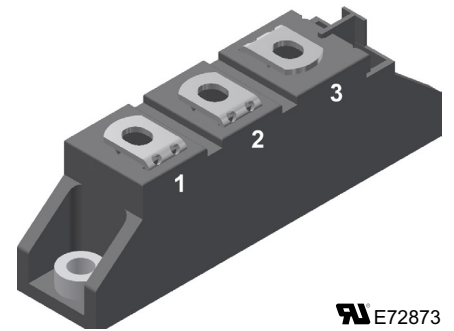
$$V_{RRM} = 600 \text{ V}$$


$$I_{FAV} = 95 \text{ A}$$

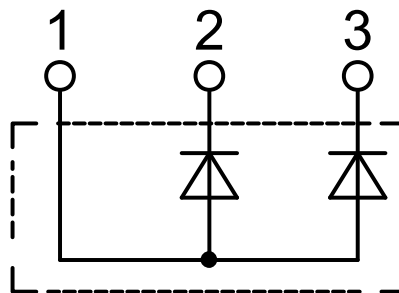
$$t_{rr} = 35 \text{ ns}$$

## Part number

MPA 95-06DA



 E72873



### Features / Advantages:

- Planar passivated chips
- Low switching losses
- Soft recovery behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

### Applications:

- Antiparallel diode for high frequency switching devices
- Free wheeling diode in converters and motor control circuits
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

### 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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Preliminary

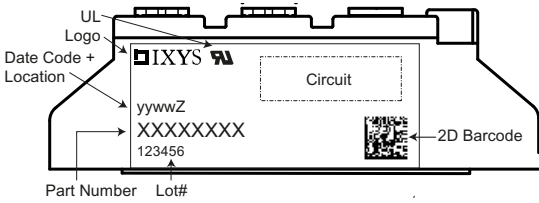
Diode				Ratings		
Symbol	Definitions	Conditions	min.	typ.	max.	
$V_{RSM}$	max. non-repetitive reverse blocking voltage				600	V
$V_{RRM}$	max. repetitive reverse blocking voltage				600	V
$I_{FRMS}$	RMS forward current				200	A
$I_{FAV}$ ①	average forward current	sine 180°			95	A
$I_{FSM}$	max. surge forward current	t = 10 ms (50 Hz), sine			1200	A
$P_{tot}$					215	W
$I_R$	reverse current	$V_R = V_{RRM}$			1.3 5	mA mA
$V_F$	forward voltage	$I_F = 50$ A $I_F = 100$ A			1.73 1.22 1.89 1.40	V V V V
$V_{TO}$	threshold voltage	for power-loss calculations only			0.98	V
$r_T$	slope resistance				2.3	mΩ
$R_{thJC}$	thermal resistance junction to case				0.575	K/W
$R_{thCH}$	thermal resistance junction to heatsink			0.1		K/W
$t_{rr}$	max. reverse recovery current	$I_F = 1$ A; $V_R = 30$ V; $-di/dt = 300$ A/μs			35	ns
$I_{RM}$	reverse recovery time	$I_F = 130$ A; $V_R = 100$ V $-di/dt = 300$ A/μs; L ≤ 0.05 μH			5.5	4.0 6.8 A A

①  $I_{FAVM}$  rating includes reverse blocking losses at  $T_{VJM}$ ,  $V_R = 0.8 V_{RRM}$ , duty cycle d = 0.5



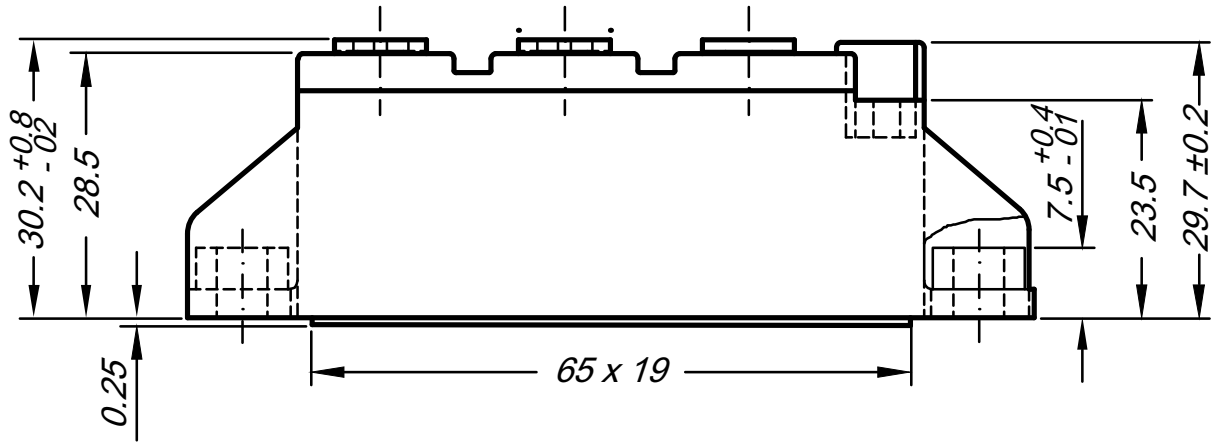
Preliminary

Package TO-240AA		Ratings			
Symbol	Definitions	Conditions	min.	typ.	max.
$I_{RMS}$	RMS current	per terminal			200 A
$T_{VJ}$	virtual junction temperature		-40		150 °C
$T_{op}$	operation temperature		-40		125 °C
$T_{stg}$	storage temperature		-40		125 °C
<b>Weight</b>				76	g
$M_D$	mounting torque		2.5		4 Nm
$M_T$	terminal torque		2.5		4 Nm
$d_{Spp/App}$	creepage distance on surface   striking distance through air	terminal to terminal	13.0	9.7	mm
$d_{Spb/Apb}$		terminal to backside	16.0	16.0	mm
$V_{ISOL}$	isolation voltage	$t = 1$ second	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA		4800 V
		$t = 1$ minute			4000 V



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General tolerance: DIN ISO 2768 class „c“

