

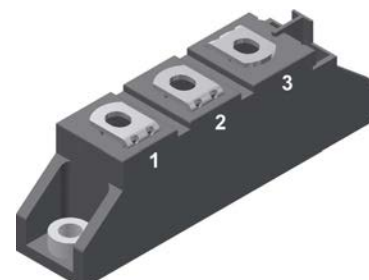
preliminary

HiPerFRED Module

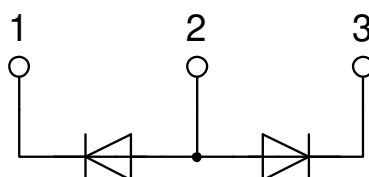
$$\begin{aligned} V_{RRM} &= 600 \text{ V} \\ I_{FAV} &= 2 \times 95 \text{ A} \\ t_{rr} &= 35 \text{ ns} \end{aligned}$$

Common Anode

Part number

MPA95-06DA


Backside: isolated

Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low I_{rm} -values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{rm} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Applications:

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode
- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)

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

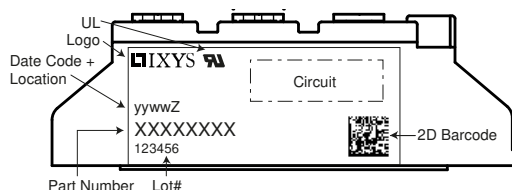
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Fast Diode				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				600	V
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				600	V
I _R	reverse current, drain current	V _R = 600 V	T _{VJ} = 25°C			1,3	mA
		V _R = 600 V	T _{VJ} = 125°C			5	mA
V _F	forward voltage drop	I _F = 50 A	T _{VJ} = 25°C			1,73	V
		I _F = 100 A				1,89	V
		I _F = 50 A	T _{VJ} = 125°C			1,22	V
		I _F = 100 A				1,40	V
I _{FAV}	average forward current	T _C = 110°C rectangular d = 0.5	T _{VJ} = 150°C			95	A
V _{F0}	threshold voltage	} for power loss calculation only		T _{VJ} = 150°C		0,98	V
r _F	slope resistance					2,3	mΩ
R _{thJC}	thermal resistance junction to case					0,58	K/W
R _{thCH}	thermal resistance case to heatsink				0,10		K/W
P _{tot}	total power dissipation		T _C = 25°C			215	W
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		1,20	kA
C _J	junction capacitance	V _R = 600 V f = 1 MHz		T _{VJ} = 25°C	70		pF
I _{RM}	max. reverse recovery current	} I _F = 130 A; V _R = 100 V		T _{VJ} = 25°C	4		A
				T _{VJ} = 100°C	5,5		A
t _{rr}	reverse recovery time	} -di _F /dt = 300 A/μs		T _{VJ} = 25°C	35		ns
				T _{VJ} = 100°C	tbd		ns



preliminary

Package TO-240AA				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
I _{RMS}	<i>RMS current</i>	per terminal				200	A
T _{VJ}	<i>virtual junction temperature</i>			-40		150	°C
T _{op}	<i>operation temperature</i>			-40		125	°C
T _{stg}	<i>storage temperature</i>			-40		125	°C
Weight					76		g
M _D	<i>mounting torque</i>			2,5		4	Nm
M _T	<i>terminal torque</i>			2,5		4	Nm
d _{Spp/App}	<i>creepage distance on surface striking distance through air</i>	<i>terminal to terminal</i>	13,0	9,7			mm
d _{Spb/Apb}		<i>terminal to backside</i>	16,0	16,0			mm
V _{ISOL}	<i>isolation voltage</i>	t = 1 second	50/60 Hz, RMS; I _{ISOL} ≤ 1 mA	4800			V
		t = 1 minute		4000			V

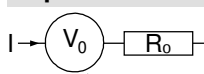


Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	MPA95-06DA	MPA95-06DA	Box	6	

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 150^{\circ}\text{C}$



Fast Diode

$V_{0\max}$ **threshold voltage**

0,98

V

$R_{0\max}$ **slope resistance ***

mΩ

Outlines TO-240AA

