

preliminary

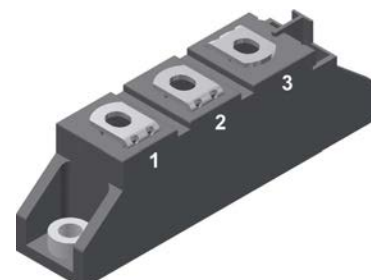
HiPerFRED Module

V_{RRM}	=	600 V
I_{FAV}	= 2x	95 A
t_{rr}	=	35 ns

Common Cathode

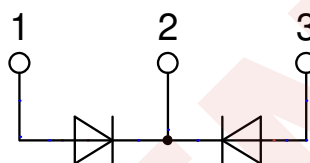
Part number

MPK95-06DA



Backside: isolated

 E72873



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

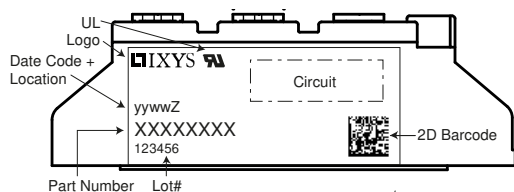
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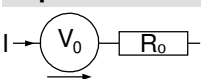
Fast Diode				Ratings				
Symbol	Definition	Conditions		min.	typ.	max.	Unit	
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				600	V	
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				600	V	
I _R	reverse current, drain current	V _R = 600 V	T _{VJ} = 25°C			1,3	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 -di _F /dt = 300 A/μs		T _{VJ} = 25°C	4		A	
				T _{VJ} = 100°C	5,5		A	
t _{rr}	reverse recovery time			T _{VJ} = 25°C	35		ns	
				T _{VJ} = 100°C	tbd		ns	

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Package TO-240AA				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
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
Weight					76		g
M_D	mounting torque			2,5		4	Nm
M_T	terminal torque			2,5		4	Nm
$d_{Spp/Apb}$	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		4800			V
		t = 1 minute	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	4000			V



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	MPK95-06DA	MPK95-06DA	Box	36	501058

Equivalent Circuits for Simulation			* on die level	$T_{VJ} = 150^{\circ}\text{C}$
	Fast Diode			
$V_{0\text{ max}}$	threshold voltage	0,98		V
$R_{0\text{ max}}$	slope resistance *	1,3		mΩ



Outlines TO-240AA

