preliminary

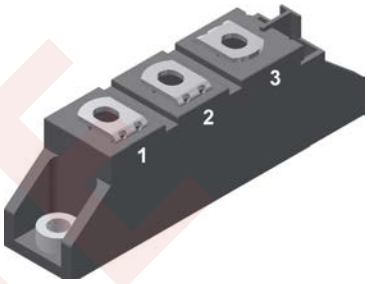
HiPerFRED Module

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

Common Cathode

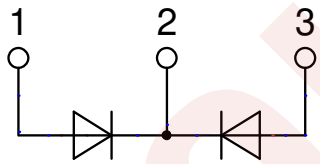
Part number

MPK95-06DA



Backside: isolated

E72873



Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low Irm-values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low Irm 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

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

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Fast Diode

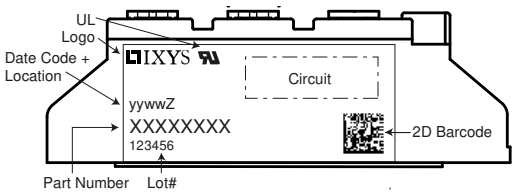
Symbol	Definition	Conditions		Ratings min.	typ.	max.	Unit
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			600	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			600	V
I_R	*reverse current, drain current*	V_R = 600 V	T_{VJ} = 25°C			1,3	mA
		V_R = 600 V	T_{VJ} = 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	T_{VJ} = 150°C			95	A
		rectangular d = 0.5					
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*		T_{VJ} = 25°C		4		A
		I_F = 130 A; V_R = 100 V	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

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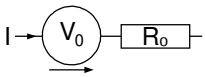
Package TO-240AA				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per terminal				200	A
T_{VJ}	*virtual junction temperature*			-40		150	°C
T_{op}	*operation temperature*			-40		125	°C
T_{stg}	*storage temperature*			-40		125	°C
Weight					76		g
M_D	*mounting torque*			2,5		4	Nm
M_T	*terminal torque*			2,5		4	Nm
$d_{Spp/App}$	*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} ≤ 1 mA	4800			V
		t = 1 minute		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°C

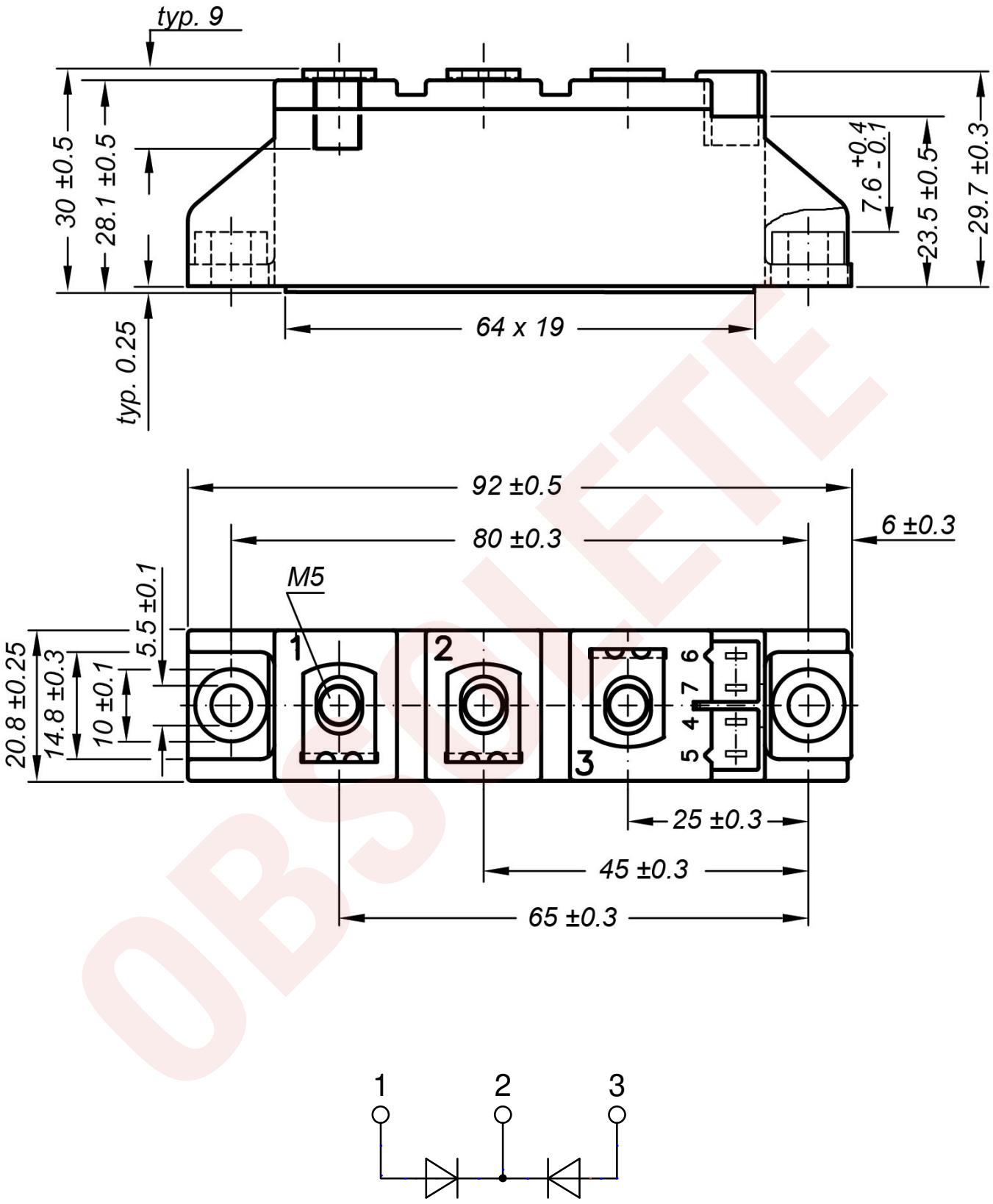


		Fast Diode	
$V_{0\ max}$	*threshold voltage*	0,98	V
$R_{0\ max}$	*slope resistance **	1,3	mΩ

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Outlines TO-240AA



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