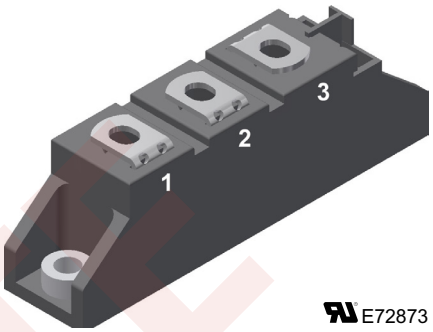
FRED Module

V_{RRM} = 1200 V
I_{FAV} = 75 A
t_{rr} = 230 ns

Fast Recovery Epitaxial Diode

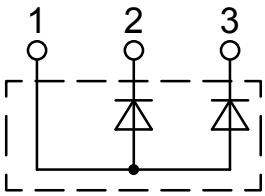
Part number

MEA 75-12DA
MEK 75-12DA
MEE 75-12DA



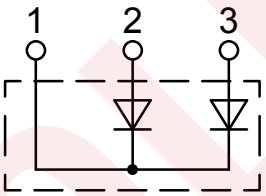
E72873
Backside: isolated

Common Anode



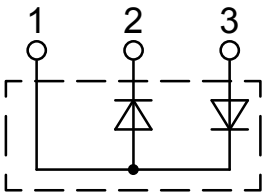
MEA 75-12DA

Common Cathode



MEK 75-12DA

Phase-Leg



MEE 75-12DA

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

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 Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

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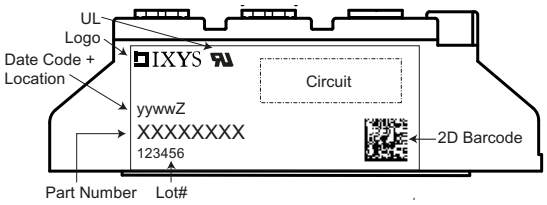
Diode				Ratings			
Symbol	**Definitions**	**Conditions**		**min.**	**typ.**	**max.**	
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			1200	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			1200	V
I_R	*reverse current*	$V_R = V_{RRM}$	T_{VJ} = 25°C			2	mA
		$V_R = 0.8 \cdot V_{RRM}$	T_{VJ} = 25°C			0.5	mA
		$V_R = 0.8 \cdot V_{RRM}$	T_{VJ} = 125°C			34	mA
V_F	*forward voltage*	I_F = 100 A	T_{VJ} = 25°C			2.17	V
			T_{VJ} = 125°C			1.85	V
		I_F = 300 A	T_{VJ} = 25°C			2.64	V
			T_{VJ} = 125°C			2.58	V
I_{FRMS}	*RMS forward current*		T_C = 75°C			107	A
I_{FAV} ①	*average forward current*	T_C = 75°C rectangular, d = 0.5	T_{VJ} = 150°C			75	A
V_{T0}	*threshold voltage*	for power-loss calculations only	$T_{VJ} = T_{VJM}$			1.48	V
r_T	*slope resistance*					3.65	mΩ
R_{thJC}	*thermal resistance junction to case*					0.45	K/W
R_{thCH}	*thermal resistance junction to heatsink*				0.10		K/W
P_{tot}			T_C = 25°C			280	W
I_{FSM}	*max. surge forward current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			1200	A
		t = 8.3 ms (60 Hz), sine				1300	A
		t = 10 ms (50 Hz), sine	T_{VJ} = 150°C			1080	A
		t = 8.3 ms (60 Hz), sine				1170	A
I^2t	*I^2t value for fusing*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			7200	A^2s
		t = 8.3 ms (60 Hz), sine				7100	A^2s
		t = 10 ms (50 Hz), sine	T_{VJ} = 150°C			5800	A^2s
		t = 8.3 ms (60 Hz), sine				5700	A^2s
t_{rr}	*max. reverse recovery current*	I_F = 70 A; V_R = 600 V	T_{VJ} = 25°C		140	200	ns
			T_{VJ} = 100°C		230	300	ns
I_{RM}	*reverse recovery time*	-di/dt = 400 A/µs; L ≤ 0.05 µH	T_{VJ} = 25°C		25	30	A
			T_{VJ} = 100°C		33	40	A

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

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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
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; $I_{ISOL} \leq 1$ mA			4800			V
		t = 1 minute				4000			V

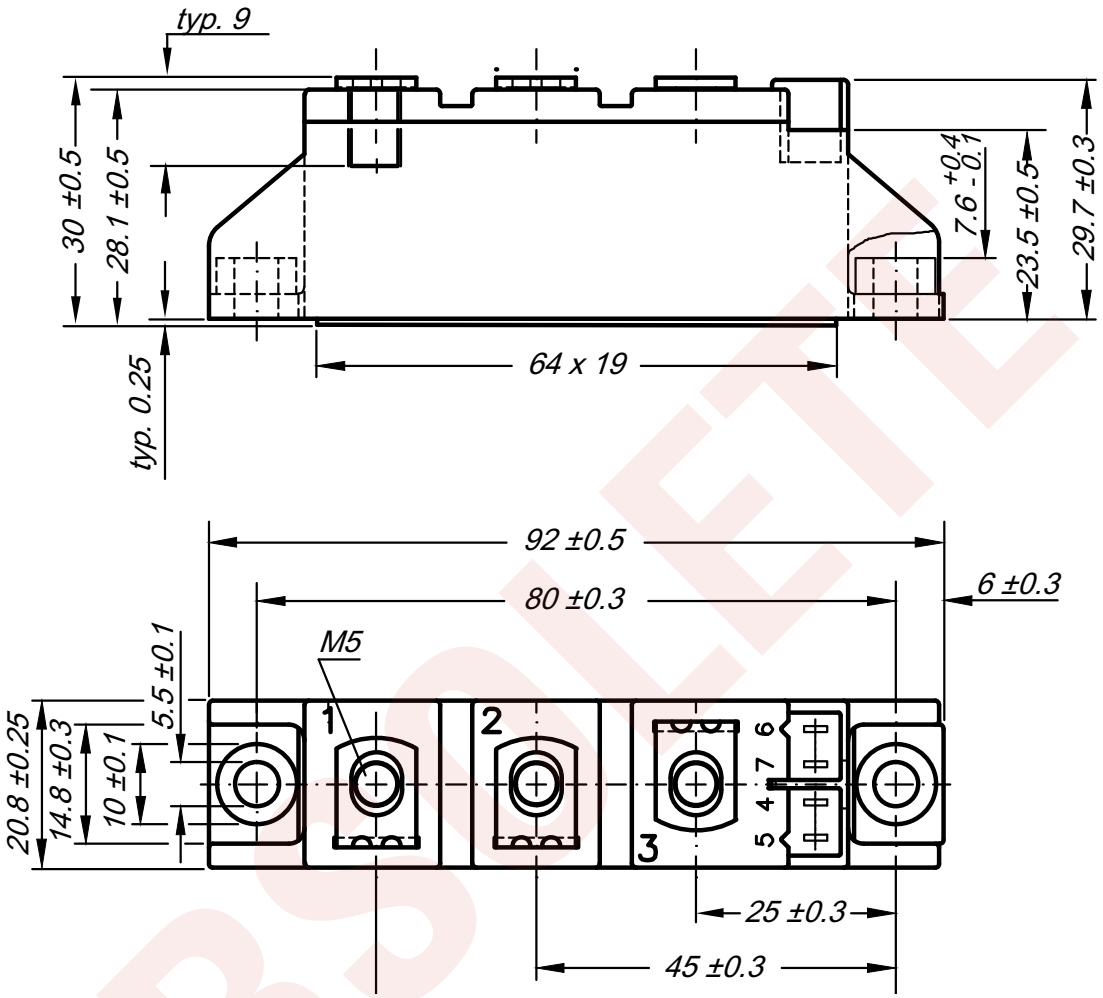


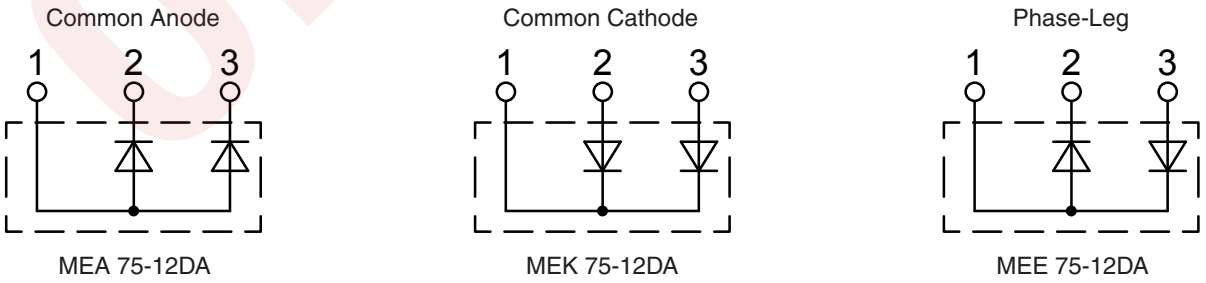
Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	MEA 75-12DA	MEA 75-12DA	Box	36	469130
Standard	MEK 75-12DA	MEK 75-12DA	Box	36	468541
Standard	MEE 75-12DA	MEE 75-12DA	Box	36	469297

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Outlines TO-240AA





MEA 75-12DA MEK 75-12DA MEE 75-12DA

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Curves

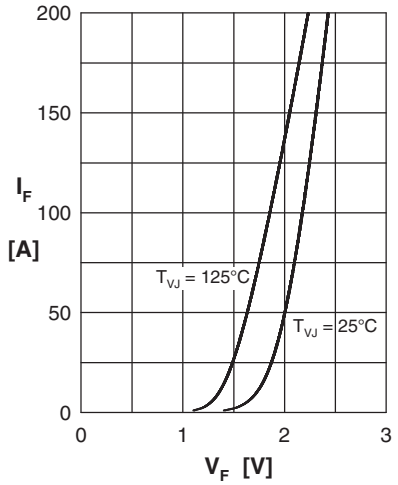


Fig. 1 Typ. forward current I_F vs. voltage drop V_F per leg

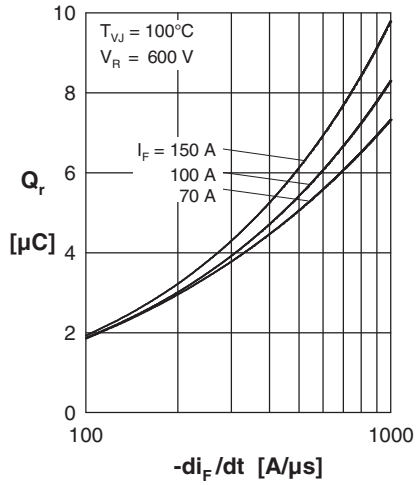


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

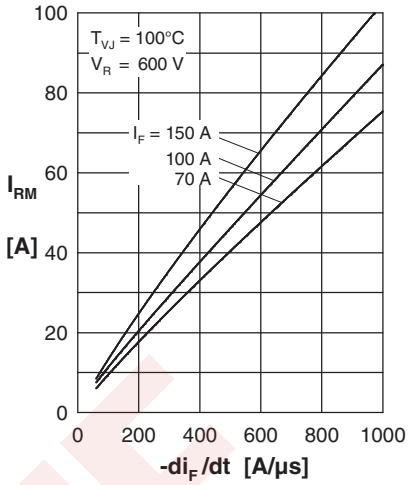


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

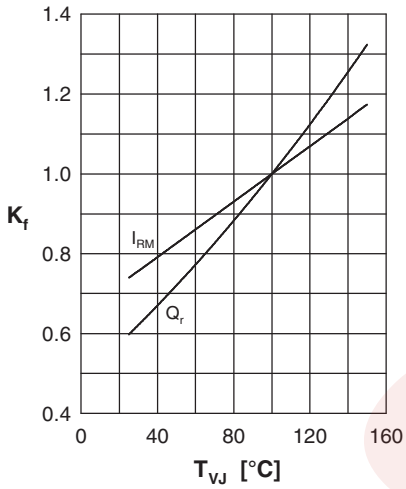


Fig. 4 Typ. dynamic parameters Q_r, I_{RM} vs. junction temperature T_{VJ}

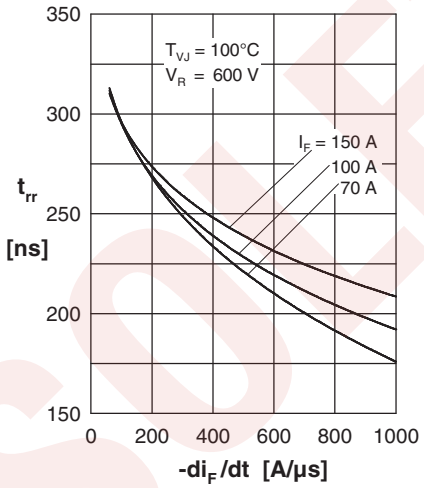


Fig. 5 Typ. recovery time t_{rr} versus $-di_F/dt$

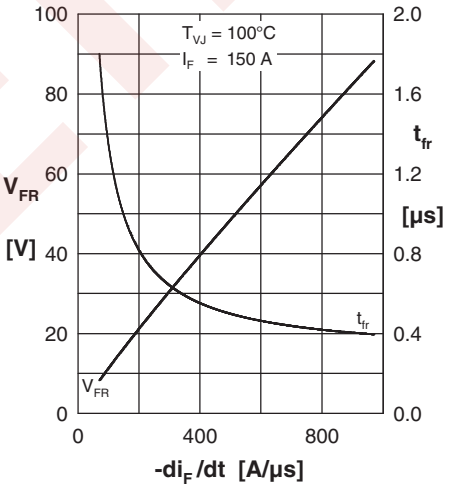


Fig. 6 Typ. peak forward voltage V_{FR} and t_{fr} versus $-di_F/dt$

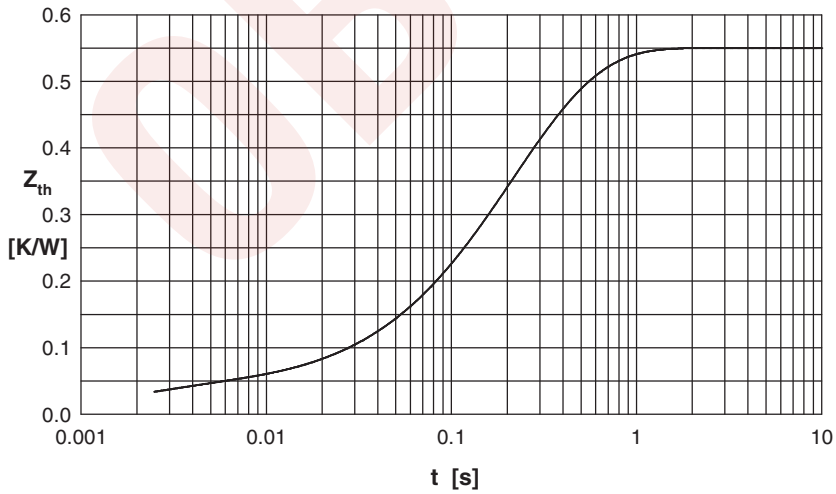


Fig. 7 Typ. transient thermal impedance junction to heatsink

Constants for Z_{thJS} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.037	0.002
2	0.138	0.134
3	0.093	0.250
4	0.282	0.274

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