FRED Module

V_{RRM} = 600 V
I_{FAVM} = 514 A
t_{rr} = 250 ns

Fast Recovery Epitaxial Diode

Single Diode

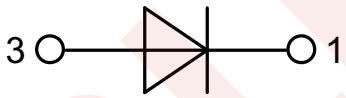
Part number

MEO 500-06DA



E72873

Backside: isolated



Features / Advantages:

- International standard package with DCB ceramic base plate
- Planar passivated chips
- Short recovery time
- 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: Y4-M6

- Isolation voltage: 3600 V~
- Industry standard outline
- Soldering pins for PCB mounting
- 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.

IXYS reserves the right to change limits, test conditions and dimensions

© 2020 IXYS All rights reserved

Downloaded from Arrow.com.

Diode				Ratings			
Symbol	**Definitions**	**Conditions**		**min.**	**typ.**	**max.**	
V_{RSM}	*max. non-repetitive reverse*		T_{VJ} = 25°C			600	V
V_{RRM}	*max. repetitive reverse*		T_{VJ} = 25°C			600	V
I_R	*reverse current*	$V_R = V_{RRM}$	T_{VJ} = 25°C			5	mA
		$V_R = 0.8 \cdot V_{RRM}$	T_{VJ} = 25°C			4	mA
		$V_R = 0.8 \cdot V_{RRM}$	T_{VJ} = 125°C			160	mA
V_F	*forward voltage*	I_F = 300 A	T_{VJ} = 25°C			1.35	V
			T_{VJ} = 125°C			1.17	V
		I_F = 520 A	T_{VJ} = 25°C			1.52	V
			T_{VJ} = 125°C			1.41	V
I_{FRMS}	*RMS forward current*		T_C = 75°C			726	A
I_{FAV} ①	*average forward current*	T_C = 75°C rectangular, d = 0.5	T_{VJ} = 150°C			514	A
V_{T0}	*threshold voltage*	for power-loss calculations only	$T_{VJ} = T_{VJM}$			0.85	V
r_T	*slope resistance*					1.09	mΩ
R_{thJC}	*thermal resistance junction to case*					0.071	K/W
R_{thCH}	*thermal resistance junction to heatsink*				0.043		K/W
P_{tot}	*total power dissipation*		T_{VJ} = 25°C			1750	W
I_{FSM}	*max. surge forward current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			4.80	kA
		t = 8.3 ms (60 Hz), sine				5.28	kA
		t = 10 ms (50 Hz), sine	T_{VJ} = 150°C			4.32	kA
		t = 8.3 ms (60 Hz), sine				4.75	kA
I^2t	*I^2t value for fusing*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			115.2	kA^2s
		t = 8.3 ms (60 Hz), sine				117.1	kA^2s
		t = 10 ms (50 Hz), sine	T_{VJ} = 150°C			93.3	kA^2s
		t = 8.3 ms (60 Hz), sine				94.8	kA^2s
t_{rr}	*max. reverse recovery current*	I_F = 600 A; $-di_F/dt$ = 800 A/µs	T_{VJ} = 25°C		140	200	ns
			T_{VJ} = 100°C		250	300	ns
I_{RM}	*reverse recovery time*	V_R = 300 V; L ≤ 0.05 µH	T_{VJ} = 25°C		70	88	A
			T_{VJ} = 100°C		110	132	A

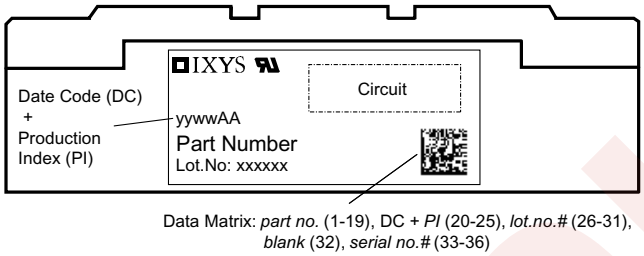
① I_{FAVM} rating includes reverse blocking losses at T_{VJM}, $V_R = 0.8\ V_{RRM}$, duty cycle d = 0.5

OBSOLETE

© 2020 IXYS All rights reserved

Downloaded from Arrow.com.

Package	Y4-M6				Ratings			
Symbol	Definitions	Conditions			min.	typ.	max.	
I_{RMS}	*RMS current*	per terminal					300	A
T_{VJ} T_{op} T_{stg}	*virtual junction temperature* *operation temperature* *storage temperature*				-40 -40 -40		150 125 125	°C °C °C
Weight						150		g
M_D	*mounting torque*				2.25		2.75	Nm
M_T	*terminal torque*				4.5		5.5	Nm
$d_{Spp/App}$ $d_{Spb/Apb}$	*creepage distance on surface* | *striking distance through air*		terminal to terminal terminal to backside	14.0 16.0	10.0 16.0			mm mm
V_{ISOL}	*isolation voltage*	t = 1 second t = 1 minute	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA		3600 3000			V V



Data Matrix: *part no.* (1-19), DC + *PI* (20-25), *lot.no.#* (26-31), *blank* (32), *serial no.#* (33-36)

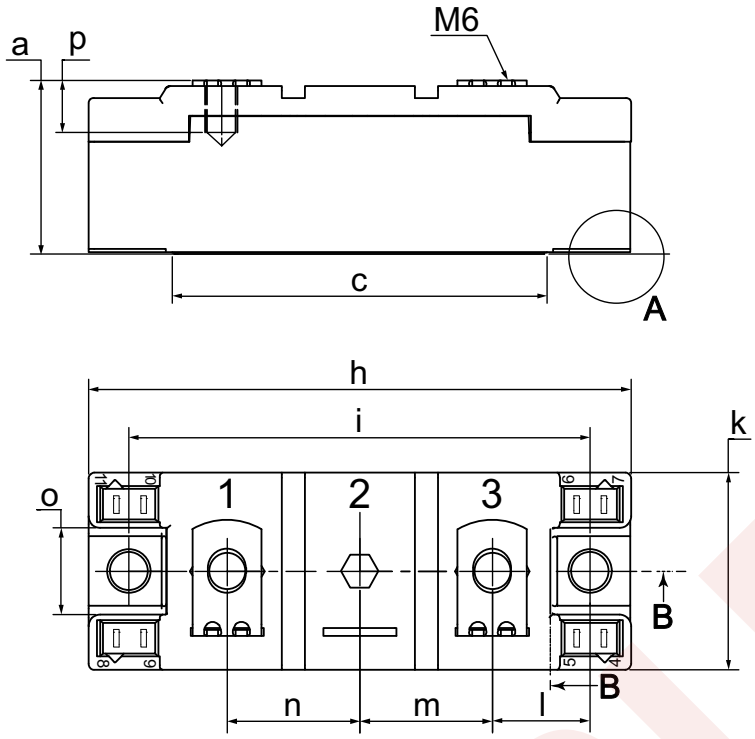
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	MEO 500-06DA	MEO 500-06DA	Box	6	464643

OBSOLETE

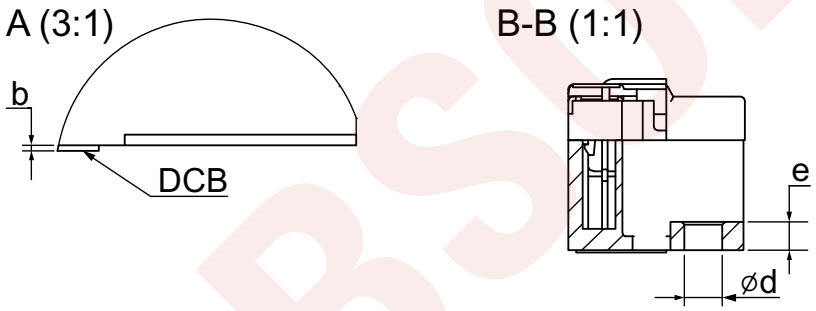
© 2020 IXYS All rights reserved

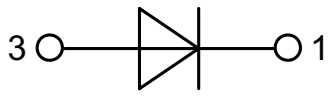
Downloaded from Arrow.com.

Outlines Y4-M6



Dim.	MIN [mm]	MAX [mm]	MIN [inch]	MAX [inch]
a	30.0	30.6	1.181	1.205
b	typ. 0.25		typ. 0.010	
c	64.0	65.0	2.520	2.559
d	6.5	7.0	0.256	0.275
e	4.9	5.1	0.193	0.201
h	93.5	94.5	3.681	3.720
i	79.5	80.5	3.130	3.169
k	33.4	34.0	1.315	1.339
l	16.7	17.3	0.657	0.681
m	22.7	23.3	0.894	0.917
n	22.7	23.3	0.894	0.917
o	14.0	15.0	0.551	0.591
p	typ. 10.5		typ. 0.413	





OBSOLETE

© 2020 IXYS All rights reserved

Downloaded from Arrow.com.

Curves

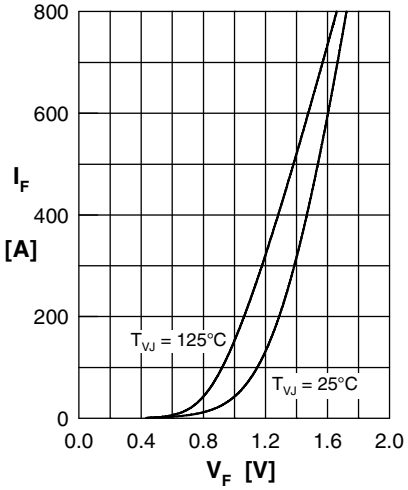


Fig. 1 Typ. forward current I_F vs voltage drop V_F per leg

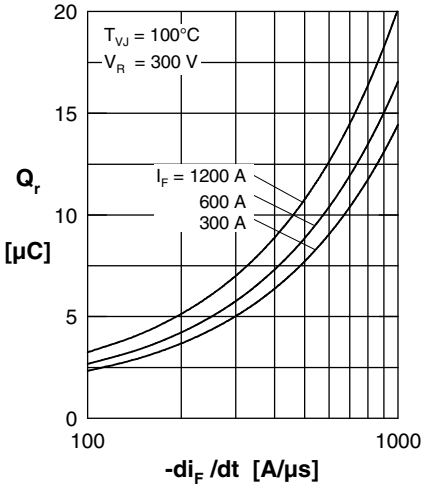


Fig. 2 Typ. reverse recovery charge Q_r versus -di$_F$/dt

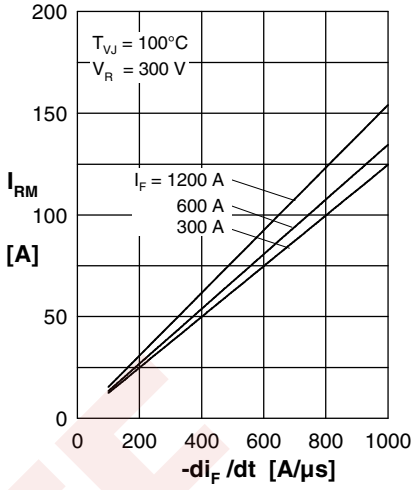


Fig. 3 Typ. peak reverse current I_{RM} versus -di$_F$/dt

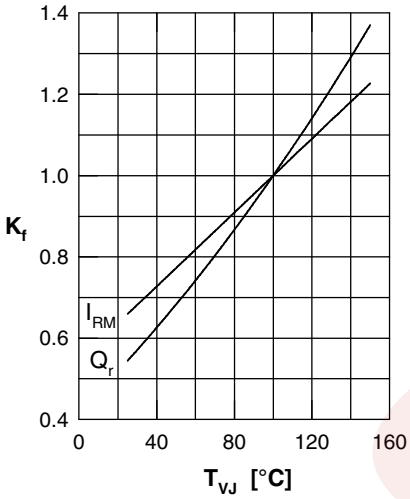


Fig. 4 Typ. dynamic parameters Q_r, I_{RM} vs. junction temperature T_{VJ}

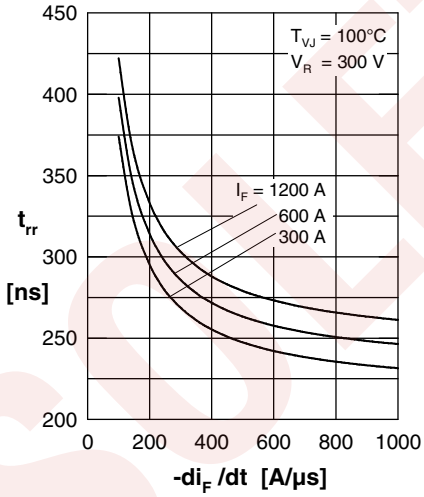


Fig. 5 Typ. recovery time t_{rr} versus -di$_F$/dt

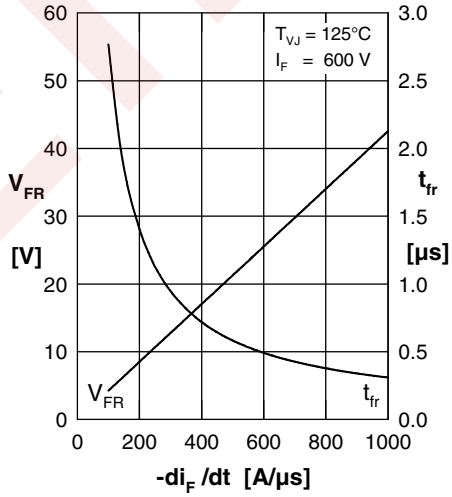


Fig. 6 Typ. peak forward voltage V_{FR} and t_{fr} versus -di$_F$/dt

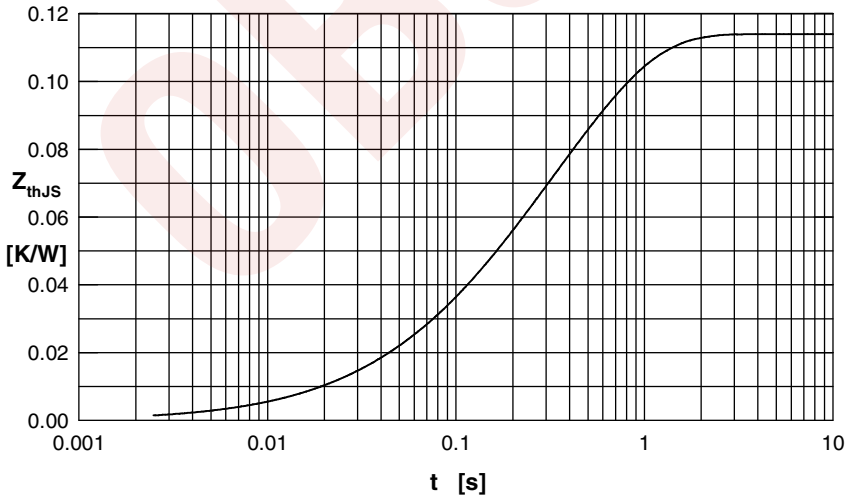


Fig. 7 Typ. transient thermal impedance junction to heatsink

Constants for Z_{thJS} calculation:

i	R_{thi} [K/W]	t_i [s]
1	0.001	0.080
2	0.004	0.024
3	0.027	0.112
4	0.082	0.464

OBSOLETE

© 2020 IXYS All rights reserved

Downloaded from Arrow.com.