

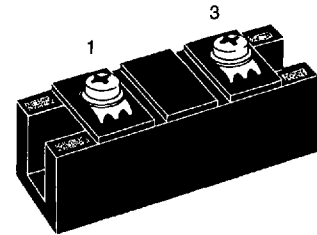
Fast Recovery Epitaxial Diode (FRED) Module

MEO 300-06DA

$I_{FAVM} = 305 \text{ A}$
 $V_{RRM} = 600 \text{ V}$
 $t_{rr} = 250 \text{ ns}$

Preliminary data

V_{RSM}	V_{RRM}	Type
V	V	
600	600	MEO 300-06DA



Symbol	Test Conditions	Maximum Ratings	
I_{FRMS}	$T_{VJ} = 125^\circ\text{C}; T_S = 65^\circ\text{C}$	431	A
I_{FAVM} ①	$T_{VJ} = 125^\circ\text{C}; T_S = 65^\circ\text{C};$ rectangular, $d = 0.5$	305	A
I_{FM}	$T_{VJ} = 125^\circ\text{C}; T_S = 65^\circ\text{C}$	1220	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms (50 Hz), sine}$	2400	A
	$t = 8.3 \text{ ms (60 Hz), sine}$	2800	A
	$T_{VJ} = 150^\circ\text{C}; t = 10 \text{ ms (50 Hz), sine}$	2200	A
	$t = 8.3 \text{ ms (60 Hz), sine}$	2600	A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}; t = 10 \text{ ms (50 Hz), sine}$	28 800	A ² s
	$t = 8.3 \text{ ms (60 Hz), sine}$	32 000	A ² s
	$T_{VJ} = 150^\circ\text{C}; t = 10 \text{ ms (50 Hz), sine}$	24 000	A ² s
	$t = 8.3 \text{ ms (60 Hz), sine}$	28 000	A ² s
T_{VJ}		-40...+150	°C
T_{stg}		-40...+125	°C
T_{Smex}		110	°C
P_{tot}	$T_S = 25^\circ\text{C}; T_{VJ} = 150^\circ\text{C}$	1100	W
V_{ISOL}	50/60 Hz, RMS $t = 1 \text{ min}$	3000	V~
	$I_{ISOL} \leq 1 \text{ mA}; t = 1 \text{ s}$	3600	V~
M_d	Mounting torque (M6)	2.25-2.75/20-25	Nm/lb.in.
	Terminal connection torque (M6)	4.5-5.5/40-48	Nm/lb.in.
d_S	Creeping distance on surface	12.7	mm
d_A	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s ²
Weight		150	g

Features

- International standard package with DCB ceramic base plate
- Planar passivated chips
- Short recovery time
- Low switching losses
- Soft recovery behaviour
- Isolation voltage 3600 V~
- UL registered E 72873

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

Advantages

- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Symbol	Test Conditions	Characteristic Values		
		typ.	max.	
I_R	$T_{VJ} = 25^\circ\text{C}; V_R = V_{RRM}$		24 mA	
	$T_{VJ} = 25^\circ\text{C}; V_R = 0.8 \cdot V_{RRM}$		6 mA	
	$T_{VJ} = 125^\circ\text{C}; V_R = 0.8 \cdot V_{RRM}$		120 mA	
V_F	$I_F = 300 \text{ A}; T_{VJ} = 125^\circ\text{C}$		1.26 V	
	$T_{VJ} = 25^\circ\text{C}$		1.46 V	
	$I_F = 520 \text{ A}; T_{VJ} = 125^\circ\text{C}$		0.87 V	
	$T_{VJ} = 25^\circ\text{C}$		1.64 V	
V_{T0}	For power-loss calculations only		0.87 V	
r_T	$T_{VJ} = 125^\circ\text{C}; I_{F1} = 300 \text{ A}; I_{F2} = 520 \text{ A}$		1.20 mΩ	
R_{thJS}			0.114 K/W	
t_{rr}	$I_F = 300 \text{ A}$ $V_R = 300 \text{ V}$ $-di/dt = 800 \text{ A}/\mu\text{s}$	$T_{VJ} = 100^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 100^\circ\text{C}$	250 ns	
I_{RM}				56 A
				84 A

① I_{FAVM} rating includes reverse blocking losses at T_{VJM} , $V_R = 0.6 V_{RRM}$, duty cycle $d = 0.5$
Data according to DIN/IEC 747

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

Dimensions in mm (1 mm = 0.0394")

