

FRED Module

Fast Recovery Epitaxial Diode
Common Cathode

Preliminary

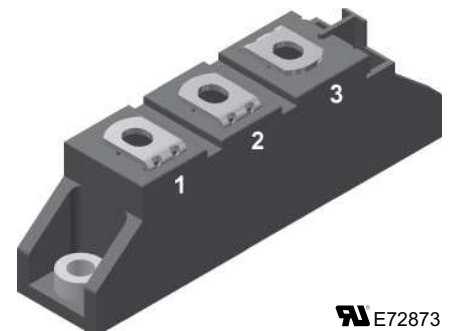
$$V_{RRM} = 400 \text{ V}$$

$$I_{FAV} = 150 \text{ A}$$

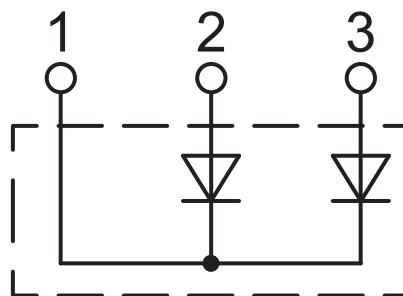
$$t_{rr} = 300 \text{ ns}$$

Part number

MEK 150-04DA



 E72873



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

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Preliminary

Diode				Ratings			
Symbol	Definitions	Conditions		min.	typ.	max.	
V_{RSM}	max. non-repetitive reverse blocking voltage		$T_{VJ} = 25^{\circ}\text{C}$			400	V
V_{RRM}	max. repetitive reverse blocking voltage		$T_{VJ} = 25^{\circ}\text{C}$			400	V
I_{FRMS}	RMS forward current					200	A
I_{FAVM}	max. average forward current	rectangular, $d = 0.5$	$T_C = 100^{\circ}\text{C}$			150	A
I_{FSM}	max. surge forward current	$t = 10 \text{ ms}$ (50 Hz), sine	$T_{VJ} = 45^{\circ}\text{C}$			1200	A
P_{tot}			$T_C = 75^{\circ}\text{C}$			360	W
I_R	reverse current	$V_R = V_{RRM}$	$T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 150^{\circ}\text{C}$			2 8.5	mA mA
V_F	forward voltage	$I_F = 300 \text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 150^{\circ}\text{C}$			1.6 1.4	V V
R_{thJC} R_{thCH}	thermal resistance junction to case thermal resistance junction to heatsink				0.08	0.35	K/W K/W
I_{RM}	reverse recovery time	$I_F = 200 \text{ A}$; $V_R = 100 \text{ V}$ $-di/dt = 100 \text{ A}/\mu\text{s}$; $L \leq 0.05 \mu\text{H}$	$T_{VJ} = 100^{\circ}\text{C}$		11	14	A



Preliminary

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 $t = 1$ minute	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	4800 4000			V V

