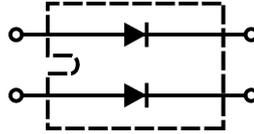


Fast Recovery Epitaxial Diode (FRED)

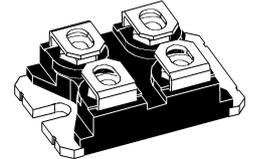
DSEI 2x 61

$I_{FAVM} = 2x 60 A$
 $V_{RRM} = 1000 V$
 $t_{rr} = 35 ns$

V_{RSM} V	V_{RRM} V	Type
1000	1000	DSEI 2x 61-10B



miniBLOC, SOT-227 B
 E72873



Symbol	Test Conditions	Maximum Ratings (per diode)	
I_{FRMS}	$T_{VJ} = T_{VJM}$	100	A
I_{FAVM} ①	$T_C = 50^\circ C$; rectangular, $d = 0.5$	60	A
I_{FRM}	$t_p < 10 \mu s$; rep. rating, pulse width limited by T_{VJM}	800	A
I_{FSM}	$T_{VJ} = 45^\circ C$; $t = 10 ms$ (50 Hz), sine	500	A
	$t = 8.3 ms$ (60 Hz), sine	540	A
	$T_{VJ} = 150^\circ C$; $t = 10 ms$ (50 Hz), sine	450	A
	$t = 8.3 ms$ (60 Hz), sine	480	A
I^2t	$T_{VJ} = 45^\circ C$; $t = 10 ms$ (50 Hz), sine	1150	A ² s
	$t = 8.3 ms$ (60 Hz), sine	1200	A ² s
	$T_{VJ} = 150^\circ C$; $t = 10 ms$ (50 Hz), sine	1000	A ² s
	$t = 8.3 ms$ (60 Hz), sine	950	A ² s
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	$T_C = 25^\circ C$	180	W
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq 1 mA$	2500	V~
M_d	Mounting torque	1.5/13	Nm/lb.in.
	Terminal connection torque (M4)	1.5/13	Nm/lb.in.
Weight		30	g

Features

- International standard package miniBLOC (ISOTOP compatible)
- Isolation voltage 2500 V~
- 2 independent FRED in 1 package
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM} -values
- Soft recovery behaviour

Applications

- Antiparallel diode for high frequency switching devices
- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- 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
- Operating at lower temperature or space saving by reduced cooling

Symbol	Test Conditions	Characteristic Values (per diode)	
		typ.	max.
I_R	$T_{VJ} = 25^\circ C$ $V_R = V_{RRM}$		3 mA
	$T_{VJ} = 25^\circ C$ $V_R = 0.8 \cdot V_{RRM}$		0.5 mA
	$T_{VJ} = 125^\circ C$ $V_R = 0.8 \cdot V_{RRM}$		14 mA
V_F	$I_F = 60 A$; $T_{VJ} = 150^\circ C$ $T_{VJ} = 25^\circ C$		1.8 V
			2.3 V
V_{TO}	For power-loss calculations only		1.43 V
r_T	$T_{VJ} = T_{VJM}$		6.1 mΩ
R_{thJC}		0.7	K/W
R_{thCK}		0.05	K/W
t_{rr}	$I_F = 1 A$; $-di/dt = 200 A/\mu s$; $V_R = 30 V$; $T_{VJ} = 25^\circ C$	35	50 ns
I_{RM}	$V_R = 540 V$; $I_F = 60 A$; $-di_F/dt = 480 A/\mu s$ $L \leq 0.05 \mu H$; $T_{VJ} = 100^\circ C$	32	36 A

① I_{FAVM} rating includes reverse blocking losses at T_{VJM} , $V_R = 0.8 V_{RRM}$, duty cycle $d = 0.5$
Data according to IEC 60747

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

