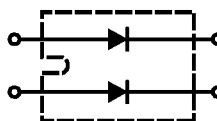


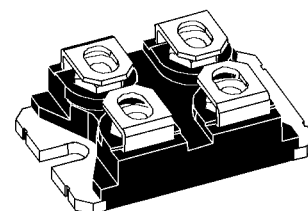
HiPerFRED™ Epitaxial Diode with soft recovery

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
400	400	DSEP 2x31-04B



miniBLOC, SOT-227 B



Symbol	Test Conditions	Maximum Ratings	
I_{FRMS}		100	A
I_{FAVM}	$T_C = 100^\circ\text{C}$; rectangular, $d = 0.5$	30	A
I_{FRM}	$t_p < 10 \mu\text{s}$; rep. rating, pulse width limited by T_{VJM}	tbd	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $t_j = 10 \text{ ms}$ (50 Hz), sine	tbd	A
E_{AS}	$T_{VJ} = 25^\circ\text{C}$; non-repetitiv $I_{AS} = 1 \text{ A}$; $L = 40 \text{ mH}$	tbd	mJ
T_{VJ}		-40...+150	$^\circ\text{C}$
T_{VJM}		150	$^\circ\text{C}$
T_{stg}		-40...+150	$^\circ\text{C}$
P_{tot}	$T_C = 25^\circ\text{C}$	100	W
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq 1 \text{ mA}$	2500	V~
M_d	mounting torque (M4)	1.1-1.5/9-13	Nm/lb.in.
	terminal connection torque (M4)	1.1-1.5/9-13	Nm/lb.in.
Weight	typical	30	g

Symbol	Test Conditions	Characteristic Values	
		typ.	max.
I_R ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}$		0.25 mA 1.0 mA
V_F ②	$I_F = 30 \text{ A}$; $T_{VJ} = 125^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$		1.15 V 1.45 V
R_{thJC} R_{thCH}		0.1	1.15 K/W K/W
t_{rr}	$I_F = 1 \text{ A}$; $-di/dt = 200 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$	30	ns
I_{RM}	$V_R = 100 \text{ V}$; $I_F = 50 \text{ A}$; $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $T_{VJ} = 100^\circ\text{C}$		6.8 A

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
② Pulse Width = 300 μs , Duty Cycle < 2.0 %

Data according to IEC 60747 and per diode unless otherwise specified

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

$$I_{FAV} = 2x30 \text{ A}$$

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

$$t_{rr} = 30 \text{ ns}$$

Features

- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 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
- Antisaturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Advantages

- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Dimensions see IXYS catalog D98004E