

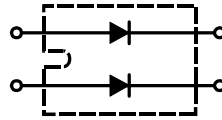
# HiPerFRED™ Epitaxial Diode with soft recovery

$$I_{FAV} = 2x 100 A$$

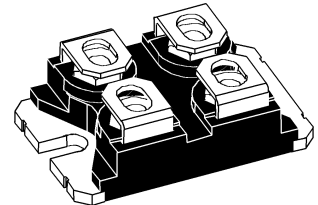
$$V_{RRM} = 400 V$$

$$t_{rr} = 30 ns$$

$V_{RSM}$	$V_{RRM}$	Type
V	V	
400	400	DSEP 2x 101-04A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
$I_{FRMS}$		100	A
$I_{FAVM}$	$T_C = 60^\circ\text{C}$ ; rectangular, $d = 0.5$	100	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10$ ms (50 Hz), sine	1000	A
$E_{AS}$	$T_{VJ} = 25^\circ\text{C}$ ; non-repetitive $I_{AS} = 4$ A; $L = 182$ $\mu\text{H}$	2	mJ
$I_{AR}$	$V_A = 1.5 \cdot V_R$ typ.; $f = 10$ kHz; repetitive	0.4	A
$T_{VJ}$		-40...+150	$^\circ\text{C}$
$T_{VJM}$		150	$^\circ\text{C}$
$T_{stg}$		-40...+150	$^\circ\text{C}$
$P_{tot}$	$T_C = 25^\circ\text{C}$	200	W
$V_{ISOL}$	50/60 Hz, RMS $I_{ISOL} \leq 1$ 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

## 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 outlines.pdf

Symbol	Conditions	Characteristic Values	
		typ.	max.
$I_R$ ①	$V_R = V_{RRM}$ ; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 150^\circ\text{C}$		1 mA 4 mA
$V_F$ ②	$I_F = 100$ A; $T_{VJ} = 150^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$		1.24 V 1.54 V
$R_{thJC}$ $R_{thCH}$	with heatsink compound	0.1	0.6 K/W K/W
$t_{rr}$	$I_F = 1$ A; $-di/dt = 400$ A/ $\mu\text{s}$ ; $V_R = 30$ V; $T_{VJ} = 25^\circ\text{C}$	30	ns
$I_{RM}$	$V_R = 100$ V; $I_F = 200$ A; $-di_F/dt = 100$ A/ $\mu\text{s}$ $T_{VJ} = 100^\circ\text{C}$	5.5	6.8 A

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %  
② Pulse Width = 300  $\mu\text{s}$ , 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.