

HiPerFRED™ Epitaxial Diode

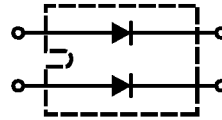
with soft recovery

$$I_{FAV} = 2x 35 A$$

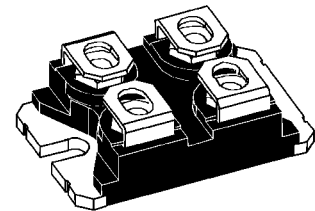
$$V_{RRM} = 1200 V$$

$$t_{rr} = 20 ns$$

V_{RSM}	V_{RRM}	Type
V	V	
1200	1200	DSEP 2x 35-12C



miniBLOC, SOT-227 B



Symbol	Test Conditions	Maximum Ratings	
I_{FRMS}		49	A
I_{FAVM}	$T_C = 55^\circ C$; rectangular, $d = 0.5$	35	A
I_{FRM}	$t_p < 10 \mu s$; rep. rating, pulse width limited by T_{VJM}	tbd	A
I_{FSM}	$T_{VJ} = 45^\circ C$; $t_j = 10 ms$ (50 Hz), sine	250	A
E_{AS}	$T_{VJ} = 25^\circ C$; non-repetitive $I_{AS} = 1.3 A$; $L = 180 \mu H$	0.2	mJ
I_{AR}	$V_A = 1.25 \cdot V_R$ typ.; $f = 10 kHz$; repetitive	0.1	A
T_{VJ}		-40...+150	$^\circ C$
T_{VJM}		150	$^\circ C$
T_{stg}		-40...+150	$^\circ C$
P_{tot}	$T_C = 25^\circ C$	165	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

Symbol	Test Conditions	Characteristic Values	
		typ.	max.
I_R ①	$V_R = V_{RRM}$; $T_{VJ} = 25^\circ C$ $T_{VJ} = 150^\circ C$		0.25 mA 1.0 mA
V_F ②	$I_F = 35 A$; $T_{VJ} = 150^\circ C$ $T_{VJ} = 25^\circ C$		2.51 V 3.25 V
R_{thJC} R_{thCH}	with heatsink compound	0.1	0.9 K/W K/W
t_{rr}	$I_F = 1 A$; $-di/dt = 300 A/\mu s$; $V_R = 30 V$; $T_{VJ} = 25^\circ C$	20	ns
I_{RM}	$V_R = 100 V$; $I_F = 50 A$; $-di_F/dt = 100 A/\mu s$ $T_{VJ} = 100^\circ C$	6.0	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.