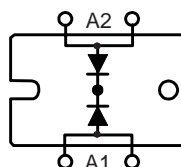


HiPerFRED™ Epitaxial Diode with soft recovery

Non isolated

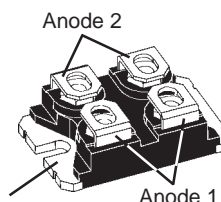
| V_{RSM} V | V_{RRM} V | Type |
|----------------|----------------|--------------|
| 600 | 600 | DSEC 240-06A |



$$I_{FAV} = 2 \times 120 \text{ A}$$

$$V_{RRM} = 600 \text{ V}$$

$$t_{rr} = 35 \text{ ns}$$

 miniBLOC,
SOT-227 B


Common cathode

Anode 1

| Symbol | Conditions | Maximum Ratings | |
|--------------------------|--|------------------------------|------------------------|
| I_{FRMS} I_{FAVM} | $T_C = 105^\circ\text{C}$; rectangular, $d = 0.5$ | 200 120 | A A |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}$; $t_p = 10 \text{ ms}$ (50 Hz), sine | 2000 | A |
| E_{AS} | $T_{VJ} = 25^\circ\text{C}$; non-repetitive $I_{AS} = 3 \text{ A}$; $L = 180 \mu\text{H}$ | 0.8 | mJ |
| I_{AR} | $V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$; repetitive | 0.3 | A |
| T_{VJ} | | -40...+150 | $^\circ\text{C}$ |
| T_{VJM} | | 150 | $^\circ\text{C}$ |
| T_{stg} | | -40...+150 | $^\circ\text{C}$ |
| P_{tot} | $T_C = 25^\circ\text{C}$ | 620 | W |
| M_d | mounting torque (M4) terminal connection torque (M4) | 1.1-1.5/9-13 1.1-1.5/9-13 | Nm/lb.in. Nm/lb.in. |
| Weight | typical | 30 | g |

Features

- International standard package miniBLOC
- Epoxy meets UL 94V-0
- 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 | $V_R = V_{RRM}$; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 150^\circ\text{C}$ | | 2 mA 8 mA |
| V_F ② | $I_F = 120 \text{ A}$; $T_{VJ} = 125^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$ | | 1.39 V 1.91 V |
| R_{thJC} R_{thCH} | with heatsink compound | 0.15 | 0.2 K/W K/W |
| t_{rr} | $I_F = 1 \text{ A}$; $-di/dt = 400 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$ | 35 | ns |
| I_{RM} | $I_F = 400 \text{ A}$; $-di_F/dt = 200 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}$; $T_{VJ} = 100^\circ\text{C}$ | 8 | 10.2 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.