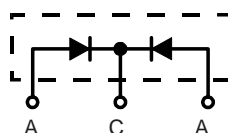


HiPerFRED™ Epitaxial Diode

with common cathode and soft recovery

Preliminary Data

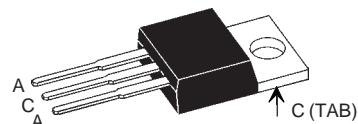
| V_{RSM} | V_{RRM} | Type |
|-----------|-----------|--------------|
| V | V | |
| 200 | 200 | DSEC 29-02A |
| 200 | 200 | DSEC 29-02AS |



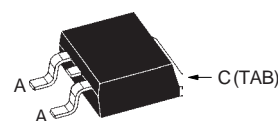
$$I_{FAV} = 2 \times 15 \text{ A}$$

$$V_{RRM} = 200 \text{ V}$$

$$t_{rr} = 25 \text{ ns}$$

TO-220 AB


A = Anode, C = Cathode, TAB = Cathode

TO-263 AB
(AS-Type)


Features

- International standard package
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM} -values
- Soft recovery behaviour
- Epoxy meets UL 94V-0

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 pages D4 - 85-86

| Symbol | Conditions | Maximum Ratings | |
|------------------------------------|--|---------------------------------|--|
| I_{FRMS} I_{FAVM} | $T_C = 150^\circ\text{C}$; rectangular, $d = 0.5$ | 35 15 | A A |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}$; $t_p = 10 \text{ ms}$ (50 Hz), sine | 140 | A |
| E_{AS} | $T_{VJ} = 25^\circ\text{C}$; non-repetitive $I_{AS} = 2.5 \text{ A}$; $L = 180 \mu\text{H}$ | 0.8 | mJ |
| I_{AR} | $V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$; repetitive | 0.3 | A |
| T_{VJ} T_{VJM} T_{stg} | | -55...+175 175 -55...+150 | $^\circ\text{C}$ $^\circ\text{C}$ $^\circ\text{C}$ |
| P_{tot} | $T_C = 25^\circ\text{C}$ | 95 | W |
| M_d | mounting torque | 0.45...0.55 4...5 | Nm lb.in. |
| Weight | typical | 2 / 4 | g |

| Symbol | Conditions | Characteristic Values | |
|--------------------------|---|-----------------------|---------------------|
| | | typ. | max. |
| I_R ① | $T_{VJ} = 25^\circ\text{C}$; $V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$; $V_R = V_{RRM}$ | 100 0.5 | μA mA |
| V_F ② | $I_F = 15 \text{ A}$; $T_{VJ} = 150^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$ | 0.86 1.06 | V V |
| R_{thJC} R_{thCH} | | 0.5 | 1.6 K/W K/W |
| t_{rr} | $I_F = 1 \text{ A}$; $-di/dt = 100 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$ | 25 | ns |
| I_{RM} | $V_R = 100 \text{ V}$; $I_F = 25 \text{ A}$; $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $T_{VJ} = 100^\circ\text{C}$ | 3.5 | 4.4 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.