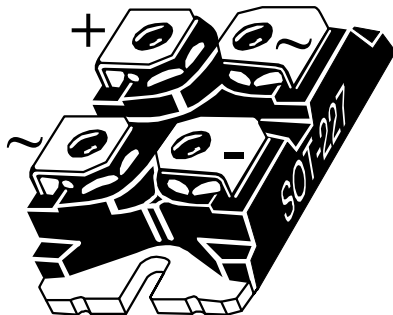
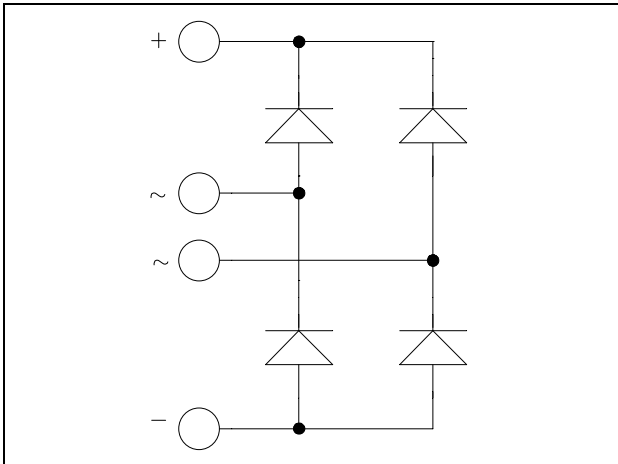


**ISOTOP[®] Fast Diode
 Full Bridge Power Module**
 $V_{RRM} = 1700V$
 $I_F = 75A @ T_c = 80^{\circ}C$

Application

- Switch mode power supplies rectifier
- Induction heating
- Welding equipment
- High speed rectifiers

Features

- Ultra fast recovery times
- Soft recovery characteristics
- High blocking voltage
- High current
- Low leakage current
- Very low stray inductance
- High level of integration
- ISOTOP[®] Package (SOT-227)

Benefits

- Outstanding performance at high frequency operation
- Low losses
- Low noise switching
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- RoHS Compliant

Absolute maximum ratings

| Symbol | Parameter | | | Max ratings | Unit |
|-------------|--|------------------|---------------------|-------------|------|
| V_R | Maximum DC reverse Voltage | | | 1700 | V |
| V_{RRM} | Maximum Peak Repetitive Reverse Voltage | | | | |
| $I_{F(AV)}$ | Maximum Average Forward Current | Duty cycle = 50% | $T_C = 80^{\circ}C$ | 75 | A |
| I_{FRM} | Maximum repetitive forward current limited by T_{Jmax} | 8.3ms | $T_J = 45^{\circ}C$ | 150 | |

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com

All ratings @ $T_j = 25^\circ\text{C}$ unless otherwise specified

Electrical Characteristics

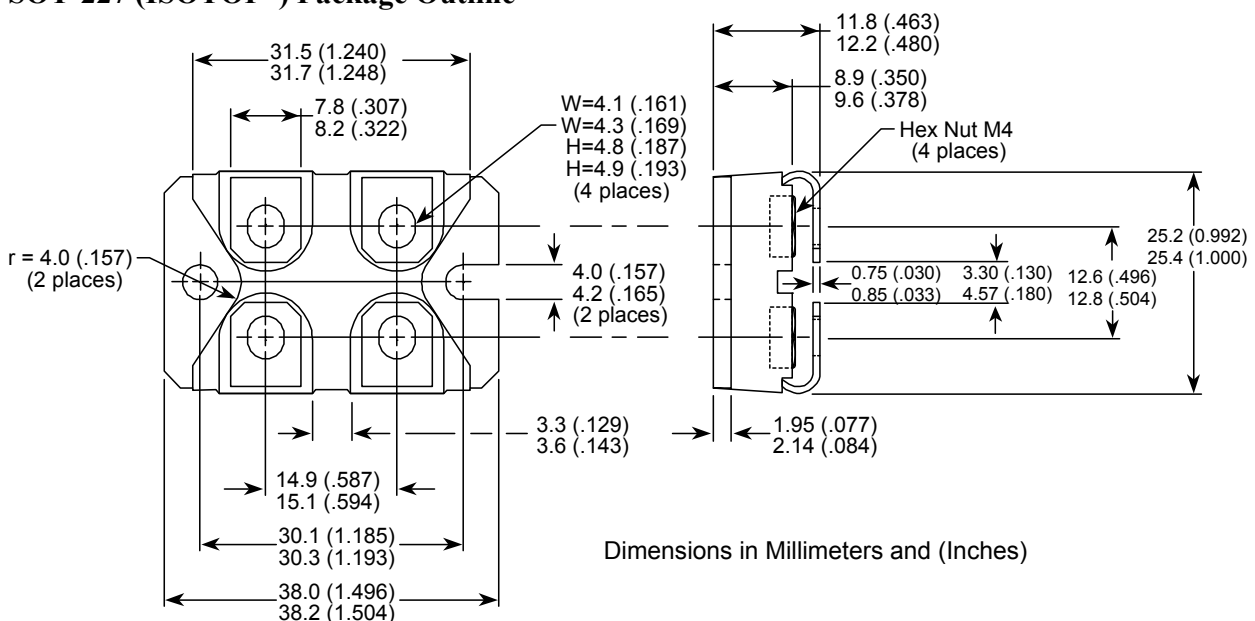
| Symbol | Characteristic | Test Conditions | Min | Typ | Max | Unit | |
|----------|---------------------------------|----------------------|---------------------------|-----|-----|------|---------------|
| V_F | Diode Forward Voltage | $I_F = 75\text{A}$ | $T_j = 25^\circ\text{C}$ | | 1.8 | 2.2 | V |
| | | | $T_j = 125^\circ\text{C}$ | | 1.9 | | |
| I_{RM} | Maximum Reverse Leakage Current | $V_R = 1700\text{V}$ | $T_j = 25^\circ\text{C}$ | | | 250 | μA |
| | | | $T_j = 125^\circ\text{C}$ | | | 500 | |

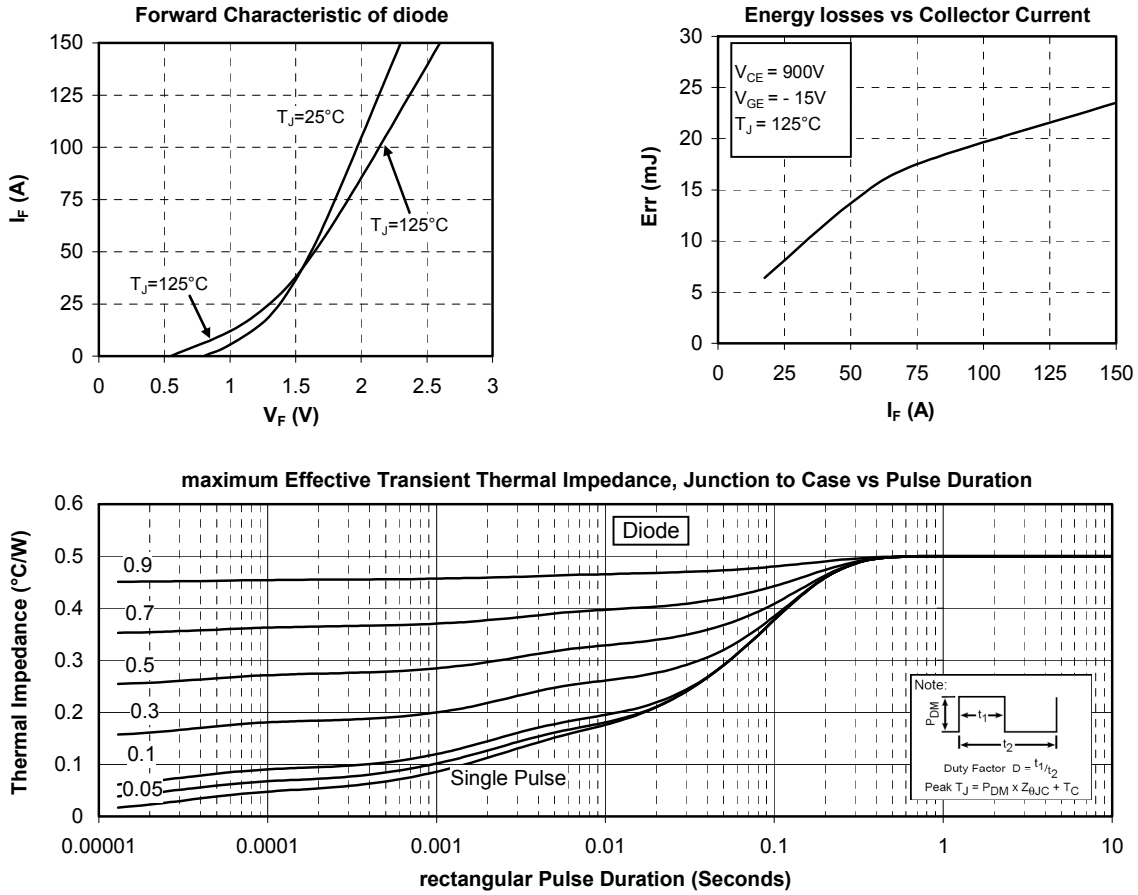
Dynamic Characteristics

| Symbol | Characteristic | Test Conditions | Min | Typ | Max | Unit |
|----------|-------------------------|--|---------------------------|-----|-----|---------------|
| t_{rr} | Reverse Recovery Time | $I_F = 75\text{A}$ $V_R = 900\text{V}$ $di/dt = 800\text{A}/\mu\text{s}$ | $T_j = 25^\circ\text{C}$ | | 385 | ns |
| Q_{rr} | Reverse Recovery Charge | | $T_j = 125^\circ\text{C}$ | | 490 | |
| | | | $T_j = 25^\circ\text{C}$ | | 19 | μC |
| E_{rr} | Reverse Recovery Energy | | $T_j = 125^\circ\text{C}$ | | 31 | |
| | | $T_j = 25^\circ\text{C}$ | | 9 | mJ | |
| | | $T_j = 125^\circ\text{C}$ | | 18 | | |

Thermal and package characteristics

| Symbol | Characteristic | Min | Typ | Max | Unit |
|----------------|--|------|------|-----|---------------------------|
| R_{thJC} | Junction to Case Thermal resistance | | | 0.5 | $^\circ\text{C}/\text{W}$ |
| R_{thJA} | Junction to Ambient | | | 20 | |
| V_{ISOL} | RMS Isolation Voltage, any terminal to case $t = 1\text{ min}$, 50/60Hz | 2500 | | | V |
| T_j, T_{STG} | Storage Temperature Range | -55 | | 150 | $^\circ\text{C}$ |
| T_L | Max Lead Temp for Soldering: 0.063" from case for 10 sec | | | 300 | |
| Torque | Mounting torque (Mounting = 8-32 or 4mm Machine and terminals = 4mm Machine) | | | 1.5 | N.m |
| Wt | Package Weight | | 29.2 | | g |

SOT-227 (ISOTOP[®]) Package Outline


Typical Performance Curve


ISOTOP® is a registered trademark of ST Microelectronics NV

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