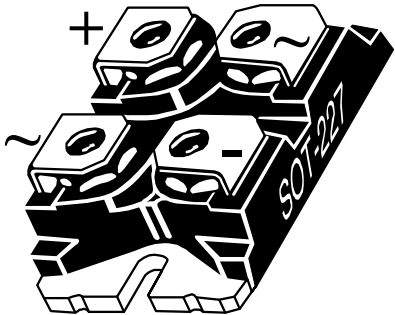
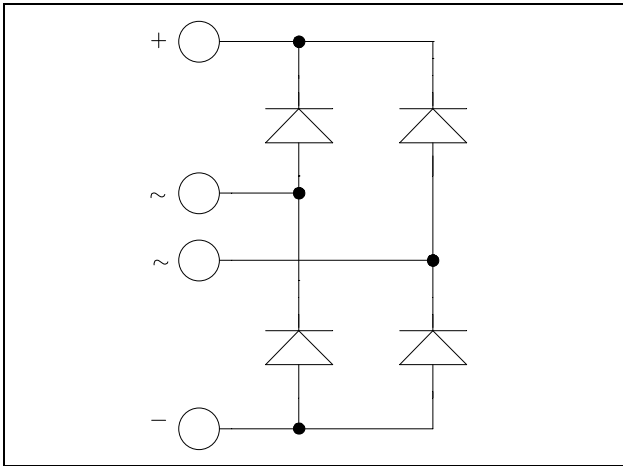


ISOTOP<sup>®</sup> Fast Diode  
Full Bridge Power Module

$V_{RRM} = 1700V$   
 $I_F = 50A @ T_c = 80^{\circ}C$



**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<sup>®</sup> 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%	$T_c = 80^{\circ}C$	50	A
$I_{FRM}$	Maximum repetitive forward current limited by $T_{Jmax}$	8.3ms	$T_J = 45^{\circ}C$	100	

**CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on [www.microsemi.com](http://www.microsemi.com)

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

**Electrical Characteristics**

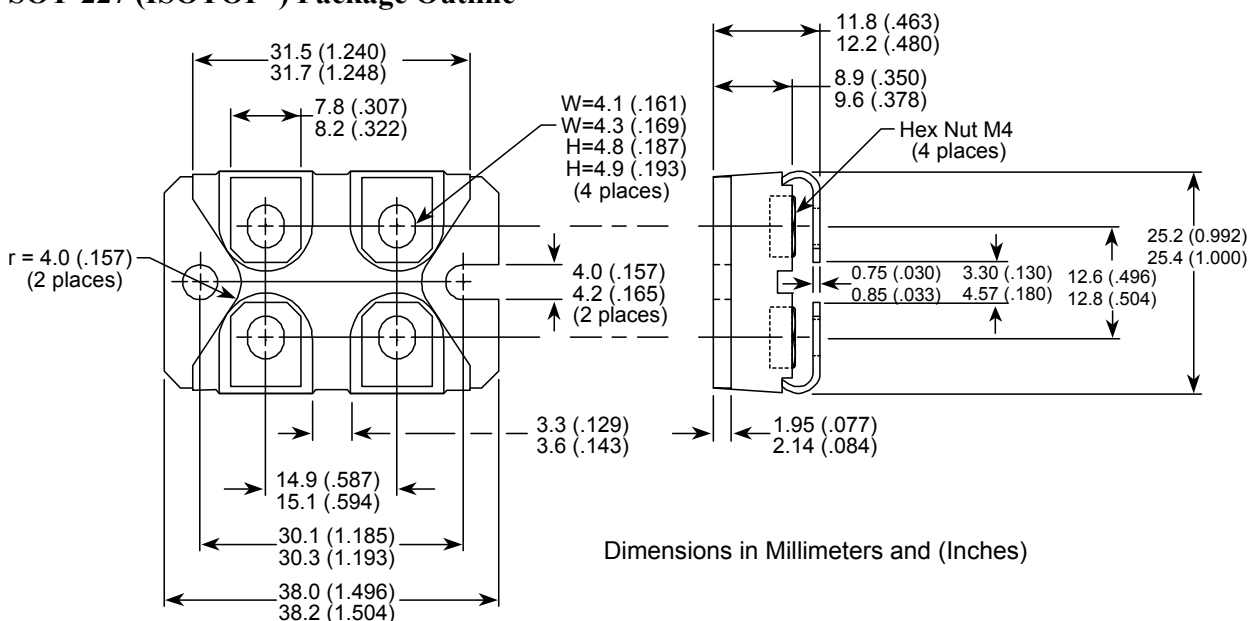
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
$V_F$	Diode Forward Voltage	$I_F = 50\text{A}$	$T_j = 25^\circ\text{C}$		1.8	2.2	V
			$T_j = 125^\circ\text{C}$		1.9		
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 1700\text{V}$	$T_j = 25^\circ\text{C}$			250	$\mu\text{A}$
			$T_j = 125^\circ\text{C}$			500	

**Dynamic Characteristics**

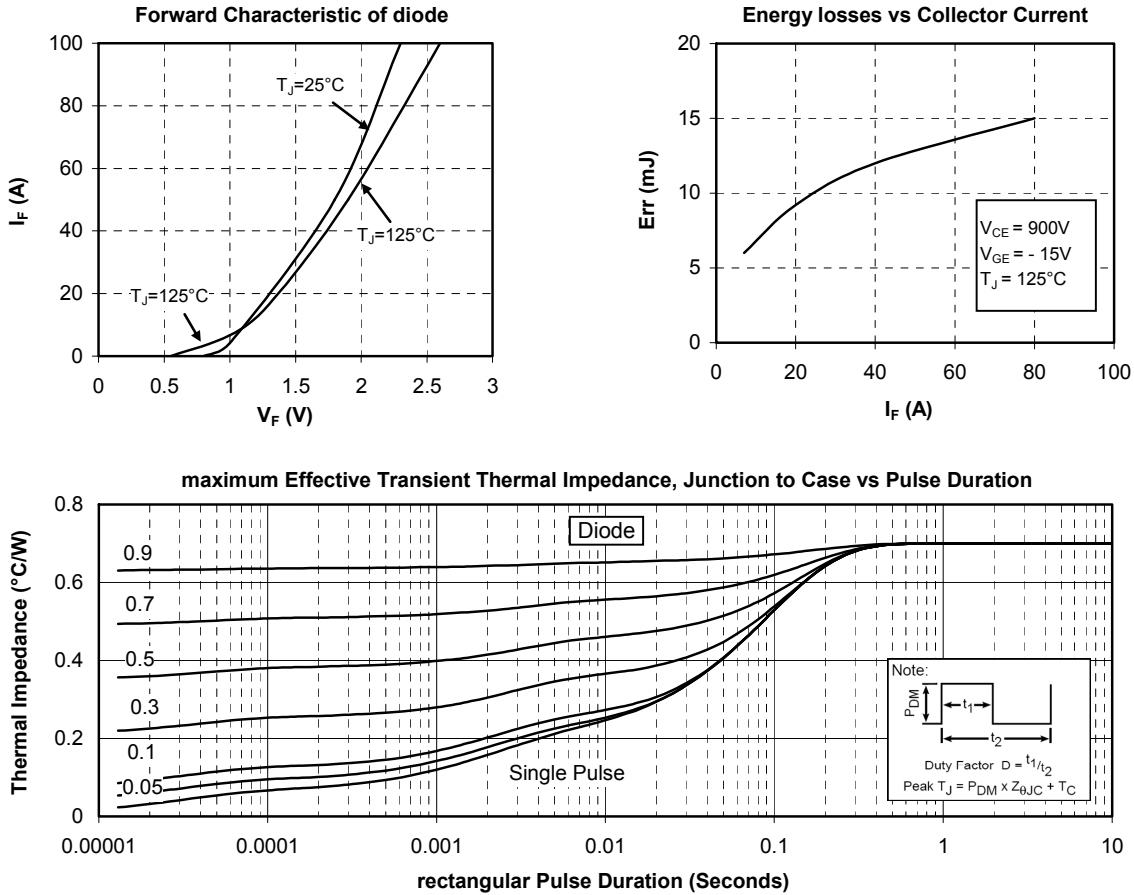
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
$t_{rr}$	Reverse Recovery Time	$I_F = 50\text{A}$ $V_R = 900\text{V}$ $di/dt = 800\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		385		ns
			$T_j = 125^\circ\text{C}$		420		
$Q_{rr}$	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		14		$\mu\text{C}$
			$T_j = 125^\circ\text{C}$		23		
$E_{rr}$	Reverse Recovery Energy	$T_j = 25^\circ\text{C}$		6		mJ	
		$T_j = 125^\circ\text{C}$		12			

**Thermal and package characteristics**

Symbol	Characteristic	Min	Typ	Max	Unit
$R_{thJC}$	Junction to Case Thermal resistance			0.7	$^\circ\text{C}/\text{W}$
$R_{thJA}$	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<sup>®</sup>) Package Outline**


## Typical Performance Curve



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