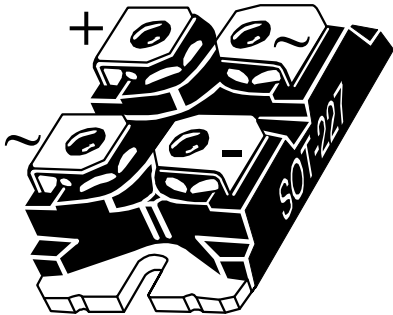
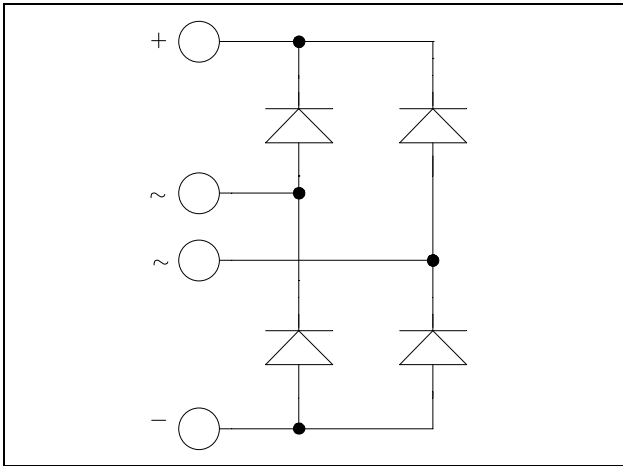


ISOTOP<sup>®</sup> Fast Diode  
Full Bridge Power Module

$V_{RRM} = 600V$   
 $I_F = 75A @ T_c = 80^{\circ}C$



### 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<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	600	V
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage		
$I_{F(AV)}$	Maximum Average Forward Current	75	A
	Duty cycle = 50% $T_C = 80^{\circ}C$		
$I_{FRM}$	Maximum repetitive forward current limited by $T_{Jmax}$	150	
	8.3ms $T_J = 45^{\circ}C$		

**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	$I_F = 75\text{A}$	$T_j = 25^\circ\text{C}$		1.6	2	V
			$T_j = 150^\circ\text{C}$		1.5		
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$			250	$\mu\text{A}$
			$T_j = 150^\circ\text{C}$			500	

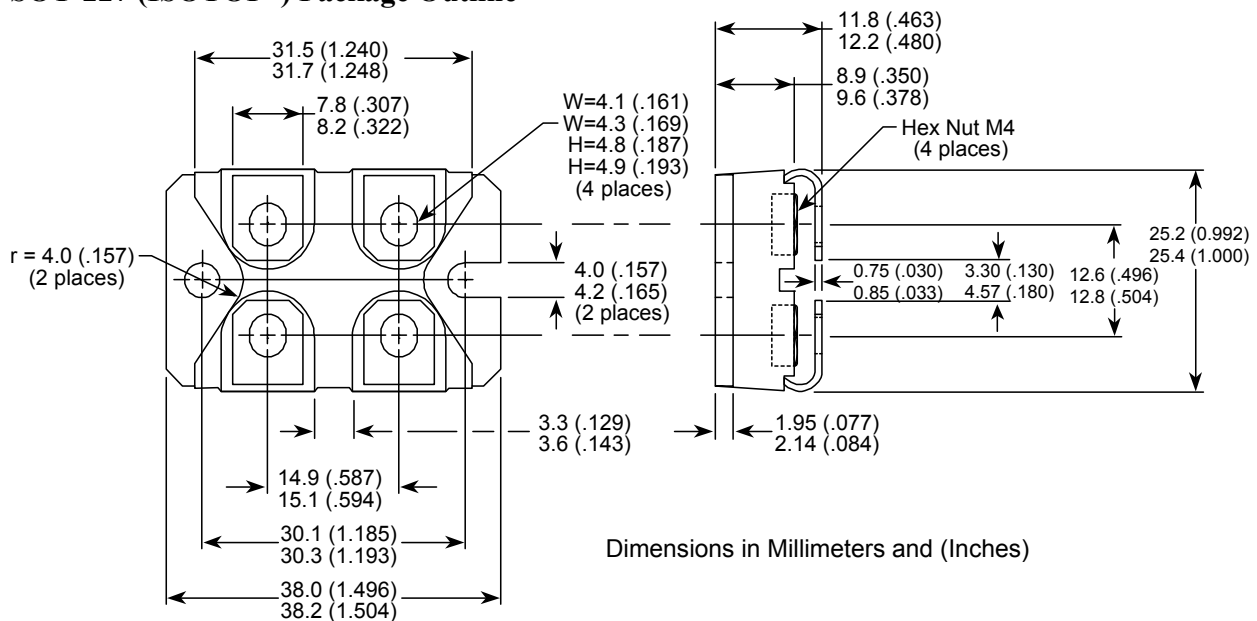
### Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
$t_{rr}$	Reverse Recovery Time	$I_F = 75\text{A}$ $V_R = 300\text{V}$ $di/dt = 2000\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		100		ns
			$T_j = 150^\circ\text{C}$		150		
$Q_{rr}$	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		3.6		$\mu\text{C}$
			$T_j = 150^\circ\text{C}$		7.6		
$E_{rr}$	Reverse Recovery Energy	$T_j = 25^\circ\text{C}$		0.85		mJ	
		$T_j = 150^\circ\text{C}$		1.8			

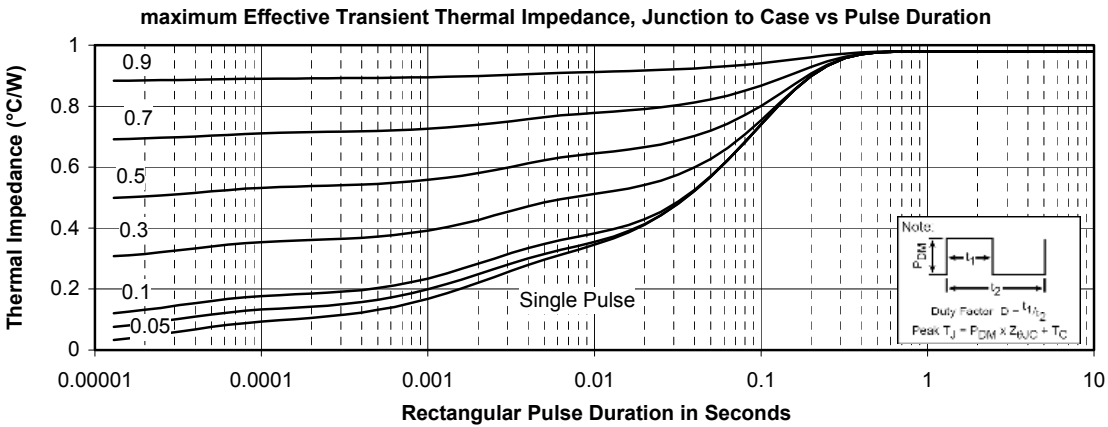
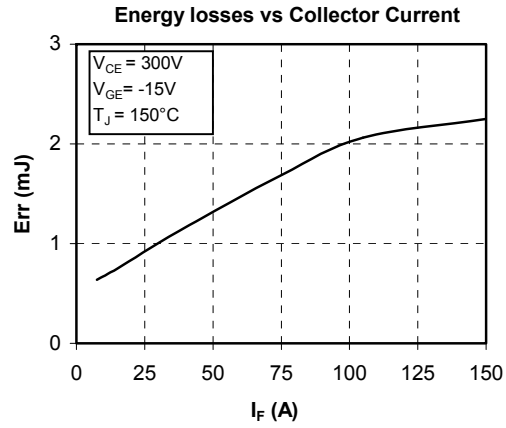
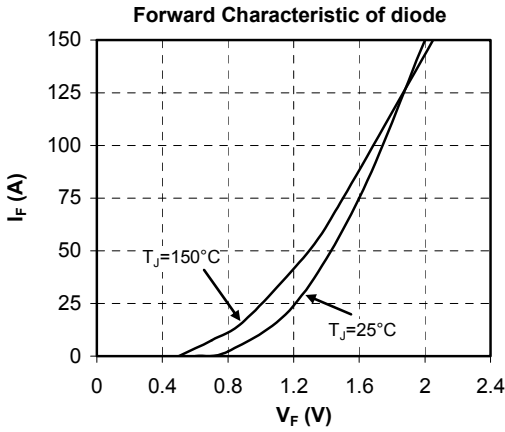
### Thermal and package characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
$R_{thJC}$	Junction to Case Thermal resistance			0.98	$^\circ\text{C}/\text{W}$
$R_{thJA}$	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		175	$^\circ\text{C}$
$T_L$	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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