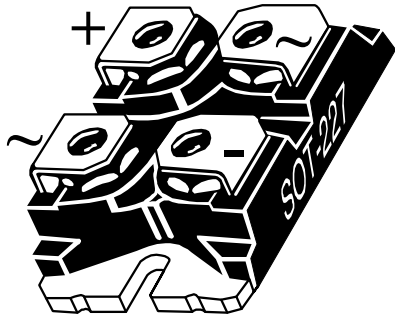
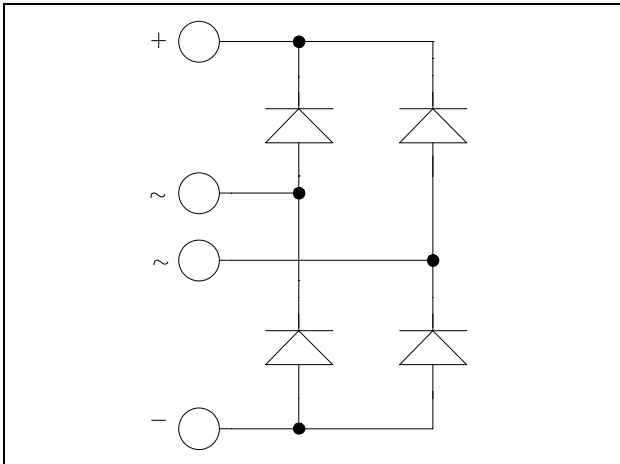


## ISOTOP<sup>®</sup> Fast Diode Full Bridge Power Module

$V_{RRM} = 1000V$   
 $I_C = 30A @ T_c = 80^{\circ}C$



### 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	1000	V	
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage			
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_C = 25^{\circ}C$	A
			$T_C = 80^{\circ}C$	
$I_{FSM}$	Non-Repetitive Forward Surge Current	8.3ms	$T_J = 45^{\circ}C$	210

**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	$I_F = 40\text{A}$		2.5	3	V
		$I_F = 80\text{A}$		3.1		
		$I_F = 40\text{A}$	$T_j = 125^\circ\text{C}$		2	
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 1000\text{V}$	$T_j = 25^\circ\text{C}$		100	$\mu\text{A}$
			$T_j = 125^\circ\text{C}$		500	
$C_T$	Junction Capacitance	$V_R = 200\text{V}$		28		pF

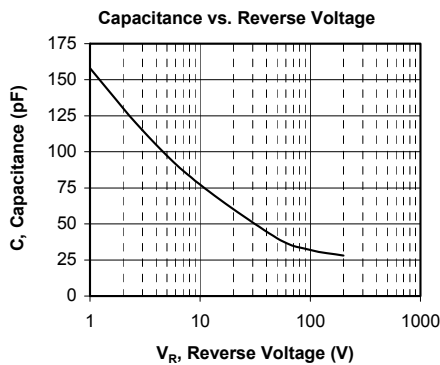
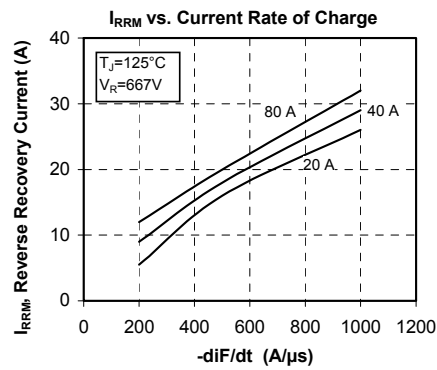
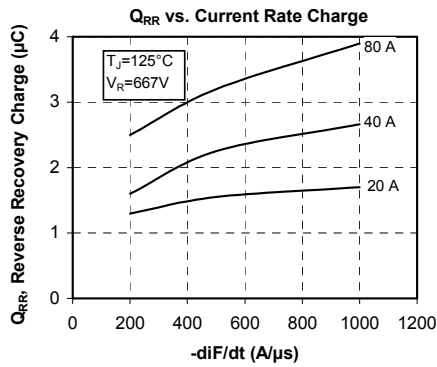
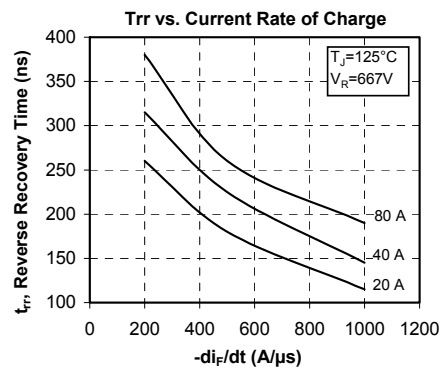
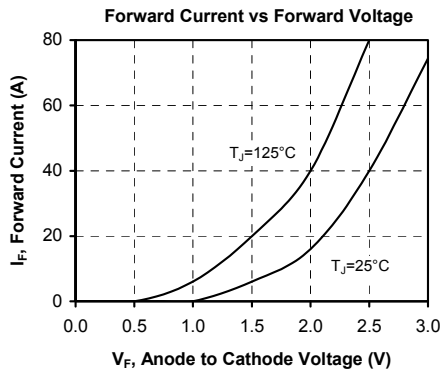
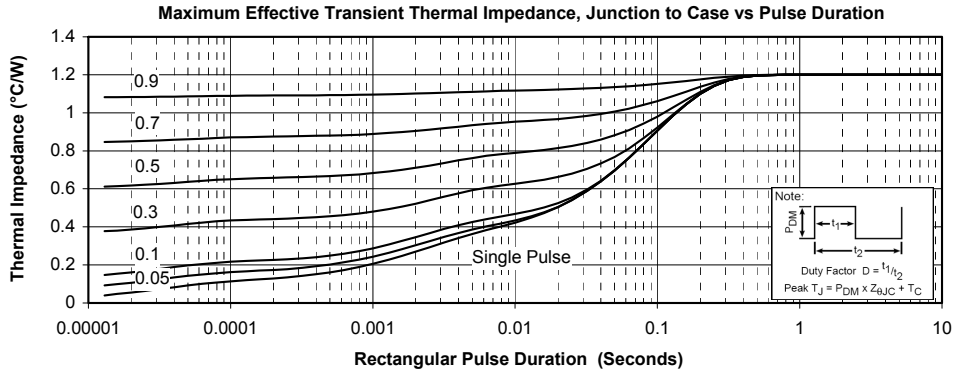
**Dynamic Characteristics**

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$t_{rr}$	Reverse Recovery Time	$I_F = 40\text{A}$ $V_R = 667\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		250	ns
			$T_j = 125^\circ\text{C}$		315	
$Q_{rr}$	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		415	nC
			$T_j = 125^\circ\text{C}$		1650	
$I_{RRM}$	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		4	A
			$T_j = 125^\circ\text{C}$		9	
$t_{rr}$	Reverse Recovery Time	$I_F = 40\text{A}$ $V_R = 667\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		150	ns
$Q_{rr}$	Reverse Recovery Charge				2660	nC
$I_{RRM}$	Reverse Recovery Current				29	A

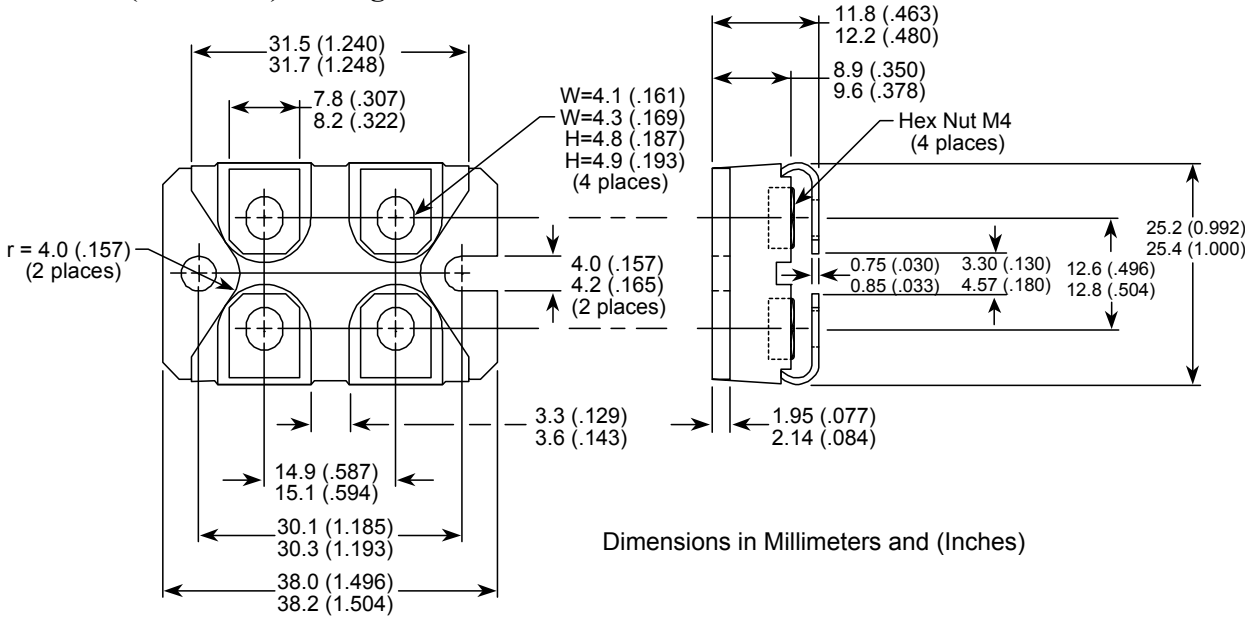
**Thermal and package characteristics**

Symbol	Characteristic	Min	Typ	Max	Unit
$R_{thJC}$	Junction to Case Thermal resistance			1.2	$^\circ\text{C}/\text{W}$
$R_{thJA}$	Junction to Ambient			20	$^\circ\text{C}/\text{W}$
$V_{ISOL}$	RMS Isolation Voltage, any terminal to case $t = 1\text{ min.}, 50/60\text{Hz}$	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

## Typical Performance Curve



**SOT-227 (ISOTOP®) Package Outline**



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