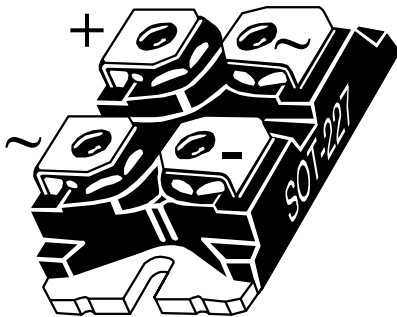
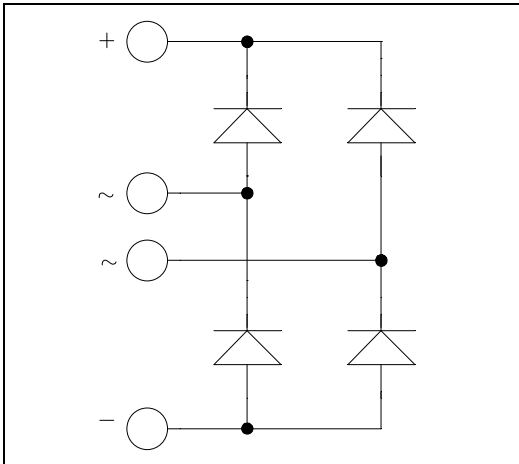


## ISOTOP<sup>®</sup> Fast Diode Full Bridge Power Module

**$V_{RRM} = 200V$**   
 **$I_F = 30A @ T_c = 80^{\circ}C$**



### 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	200	V		
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_C = 25^{\circ}C$	45	A
			$T_C = 80^{\circ}C$	30	
$I_{FSM}$	Non-Repetitive Forward Surge Current	8.3ms	$T_J = 45^{\circ}C$	320	

**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	$I_F = 30\text{A}$		1.1	1.3	V
		$I_F = 60\text{A}$		1.4		
		$I_F = 30\text{A}$	$T_j = 125^\circ\text{C}$	0.9		
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 200\text{V}$	$T_j = 25^\circ\text{C}$		250	$\mu\text{A}$
			$T_j = 125^\circ\text{C}$		500	
$C_T$	Junction Capacitance	$V_R = 200\text{V}$		95		pF

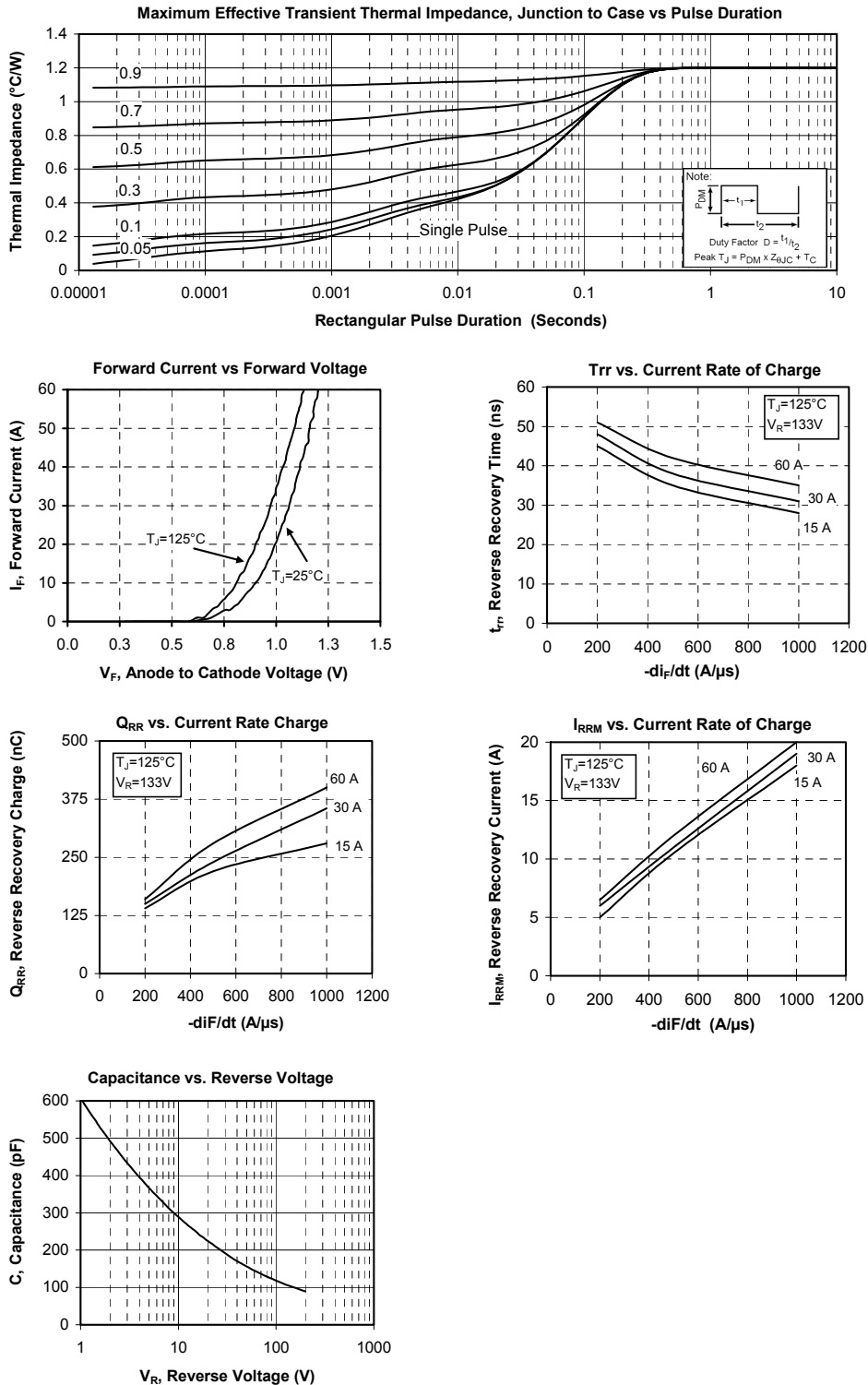
**Dynamic Characteristics**

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$t_{rr}$	Reverse Recovery Time	$I_F = 30\text{A}$ $V_R = 133\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		24	ns
			$T_j = 125^\circ\text{C}$		48	
$Q_{rr}$	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		33	nC
			$T_j = 125^\circ\text{C}$		150	
$I_{RRM}$	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		3	A
			$T_j = 125^\circ\text{C}$		6	
$t_{rr}$	Reverse Recovery Time	$I_F = 30\text{A}$ $V_R = 133\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		31	ns
$Q_{rr}$	Reverse Recovery Charge				355	nC
$I_{RRM}$	Reverse Recovery Current				19	A

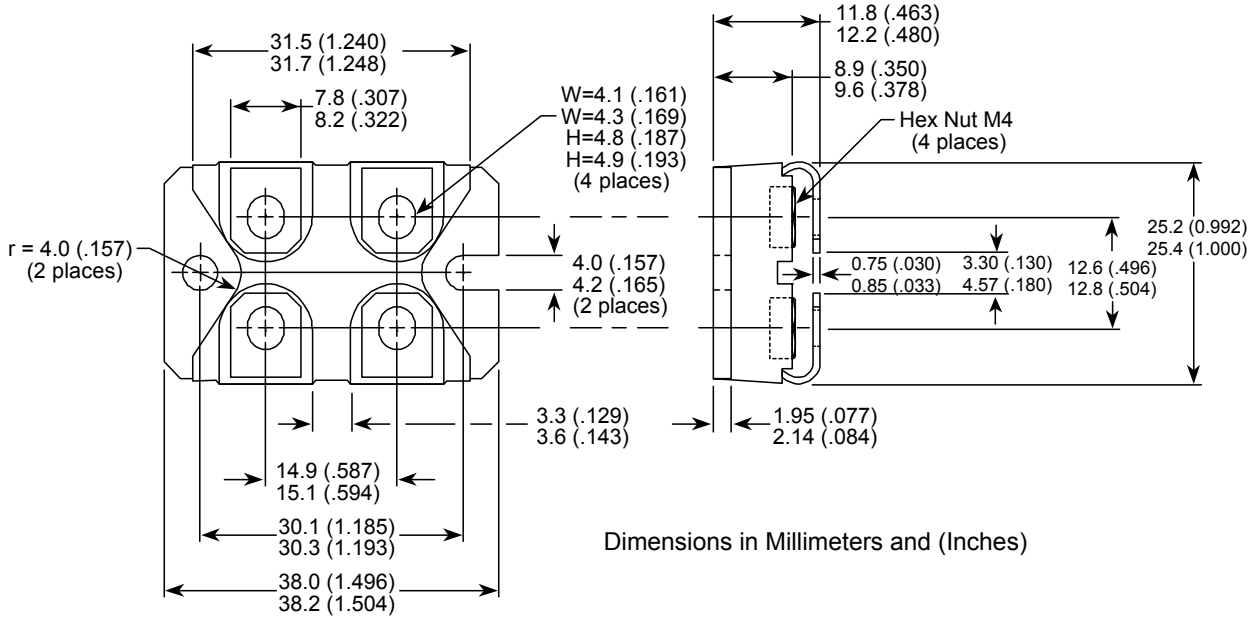
**Thermal and package characteristics**

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	
$V_{ISOL}$	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

## Typical Performance Curve



## SOT-227 (ISOTOP®) Package Outline



ISOTOP® is a registered trademark of ST Microelectronics NV

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