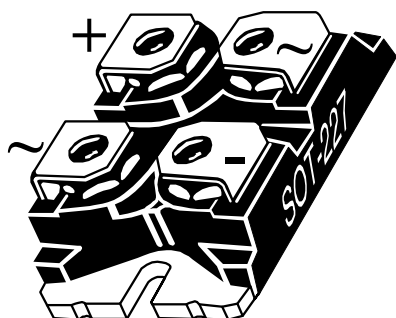
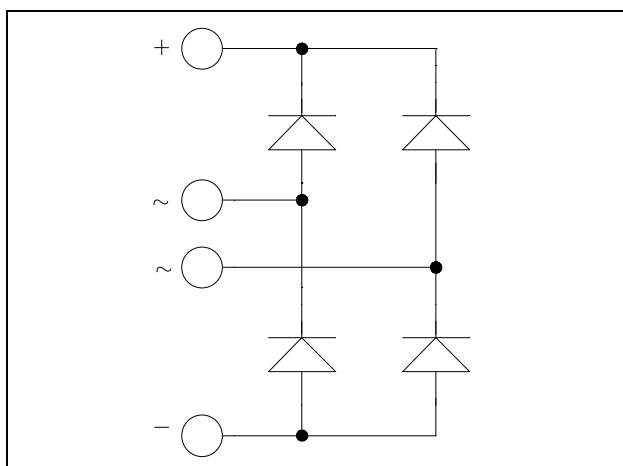


## ISOTOP® Fast Diode Full Bridge Power Module

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



### 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® 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 <sub>R</sub>	Maximum DC reverse Voltage				1000	V
V <sub>RRM</sub>	Maximum Peak Repetitive Reverse Voltage					
I <sub>F(AV)</sub>	Maximum Average Forward Current	Duty cycle = 50%	T <sub>C</sub> = 25°C	45	A	
			T <sub>C</sub> = 80°C	30		
I <sub>FSM</sub>	Non-Repetitive Forward Surge Current	8.3ms	T <sub>J</sub> = 45°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

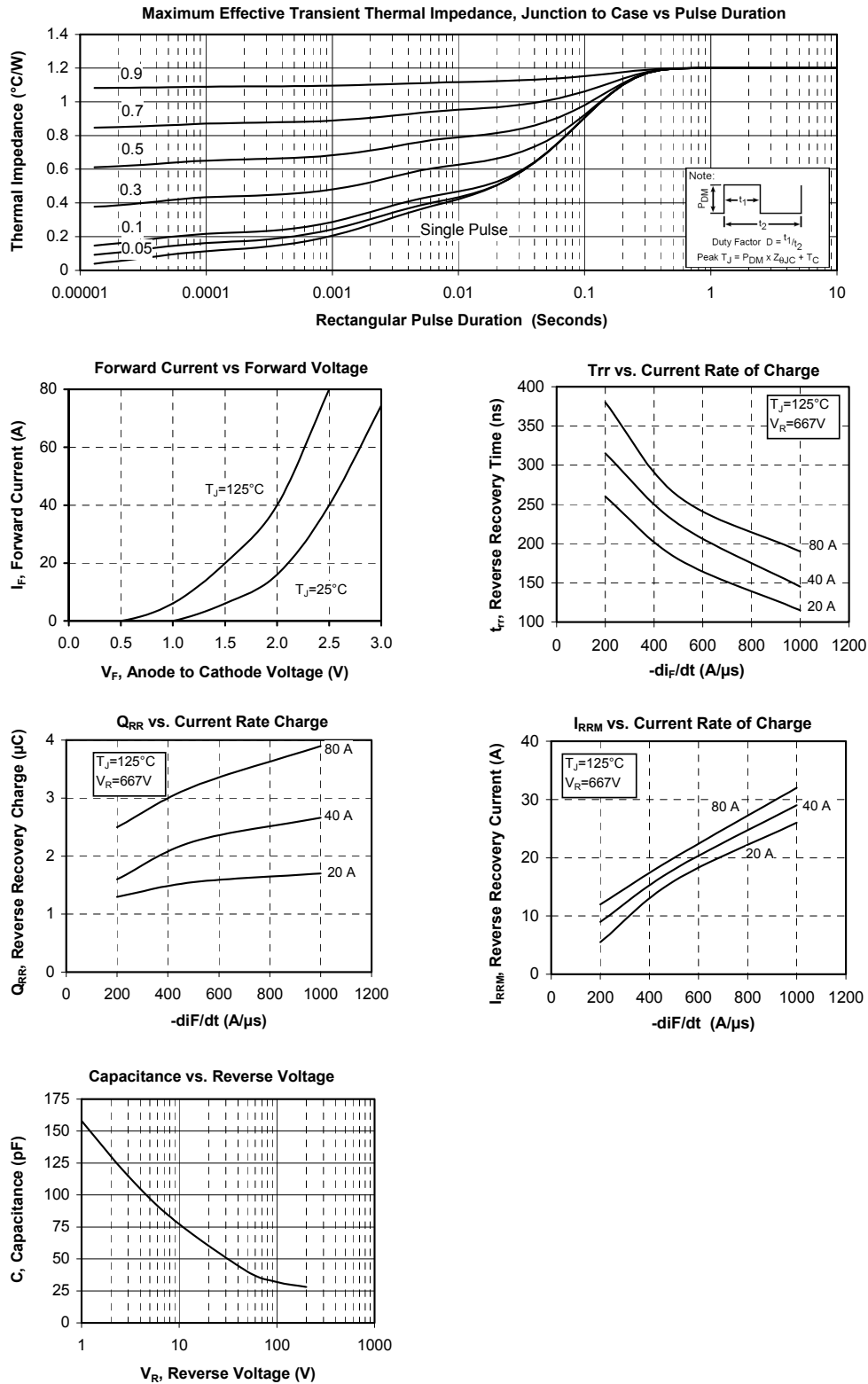
**Dynamic Characteristics**

Symbol		Characteristic	Test Conditions		Min	Typ	Max	Unit
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> = 40A V <sub>R</sub> = 667V di/dt = 200A/μs	T <sub>j</sub> = 25°C			250		ns
			T <sub>j</sub> = 125°C			315		
Q <sub>rr</sub>	Reverse Recovery Charge		T <sub>j</sub> = 25°C			415		nC
			T <sub>j</sub> = 125°C			1650		
I <sub>RRM</sub>	Reverse Recovery Current		T <sub>j</sub> = 25°C			4		A
			T <sub>j</sub> = 125°C			9		
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> = 40A V <sub>R</sub> = 667V di/dt=1000A/μs	T <sub>j</sub> = 125°C			150		ns
Q <sub>rr</sub>	Reverse Recovery Charge					2660		nC
I <sub>RRM</sub>	Reverse Recovery Current					29		A

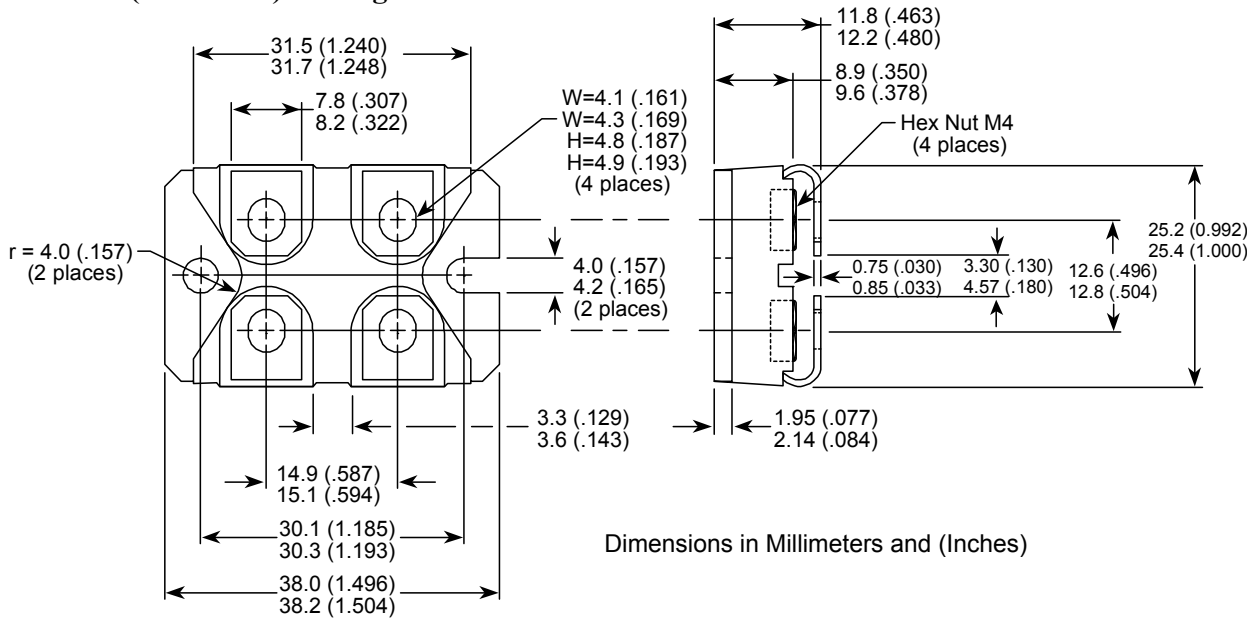
**Thermal and package characteristics**

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	
$V_{ISOL}$	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

## Typical Performance Curve



## SOT-227 (ISOTOP®) Package Outline



ISOTOP® is a registered trademark of ST Microelectronics NV

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