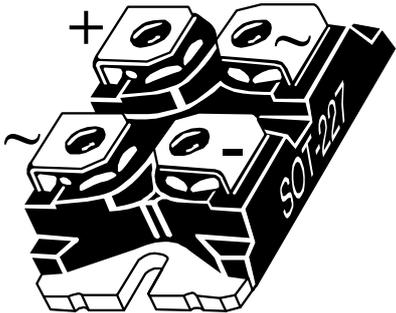
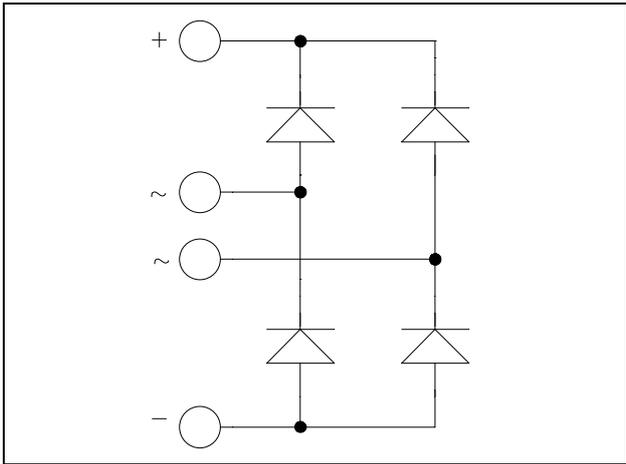


ISOTOP[®] Fast Diode
Full Bridge Power Module

V_{RRM} = 1000V
I_C = 60A @ T_c = 80°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 _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°C	90	A
			T _C = 80°C	60	
I _{FSM}	Non-Repetitive Forward Surge Current	8.3ms	T _J = 45°C	540	

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on 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	$I_F = 60\text{A}$		2.2	2.8	V
		$I_F = 120\text{A}$		2.7		
		$I_F = 60\text{A}$	$T_j = 125^\circ\text{C}$	1.7		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 1000\text{V}$	$T_j = 25^\circ\text{C}$		100	μA
			$T_j = 125^\circ\text{C}$		500	
C_T	Junction Capacitance	$V_R = 200\text{V}$		80		pF

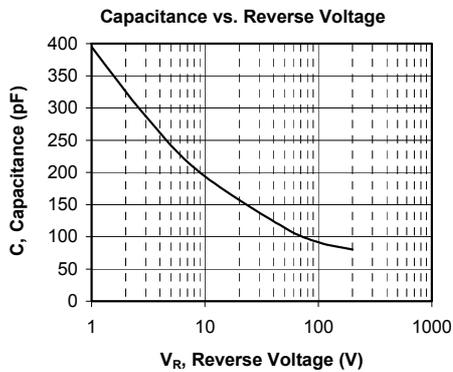
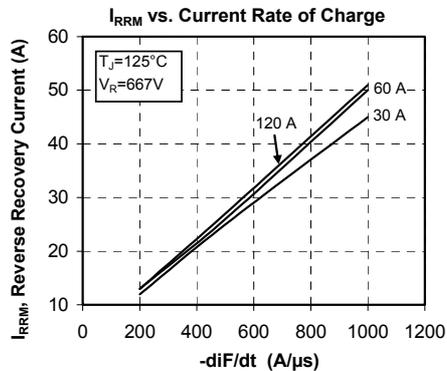
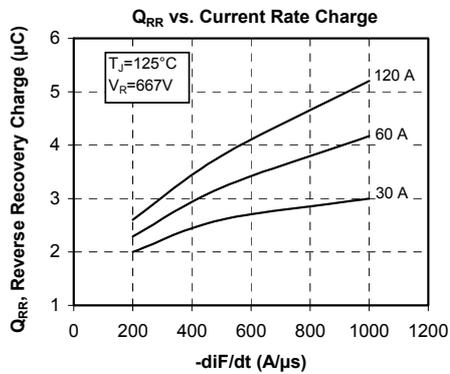
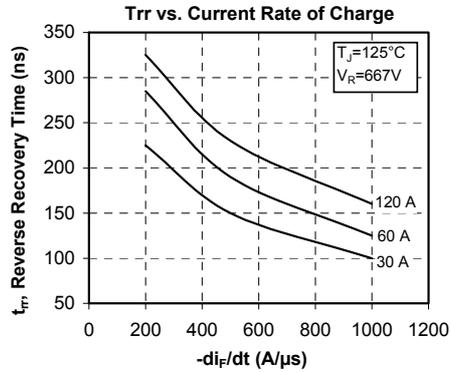
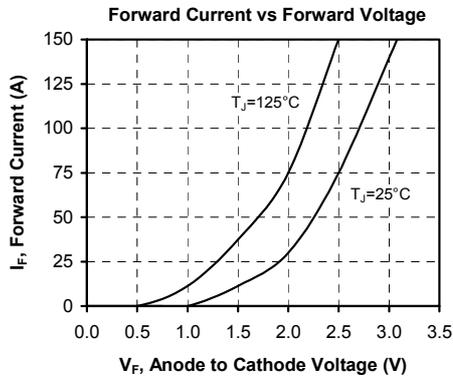
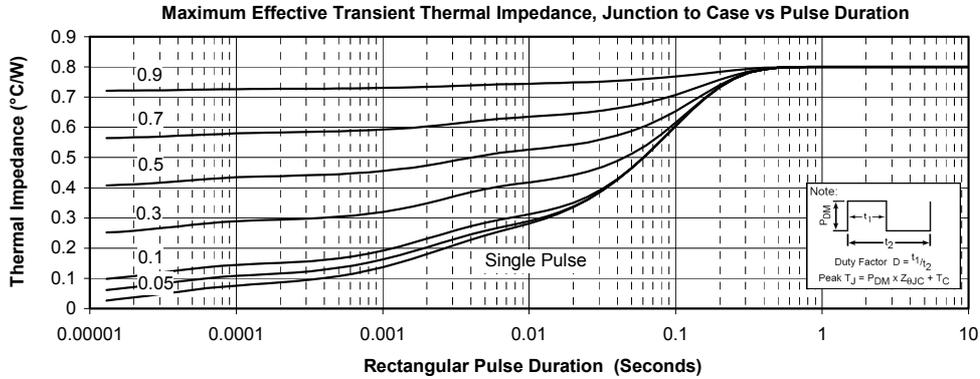
Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
t_{rr}	Reverse Recovery Time	$I_F = 60\text{A}$ $V_R = 667\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		235	ns
			$T_j = 125^\circ\text{C}$		285	
Q_{rr}	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		445	nC
			$T_j = 125^\circ\text{C}$		2290	
I_{RRM}	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		5	A
			$T_j = 125^\circ\text{C}$		13	
t_{rr}	Reverse Recovery Time	$I_F = 60\text{A}$ $V_R = 667\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		125	ns
Q_{rr}	Reverse Recovery Charge				4170	nC
I_{RRM}	Reverse Recovery Current				50	A

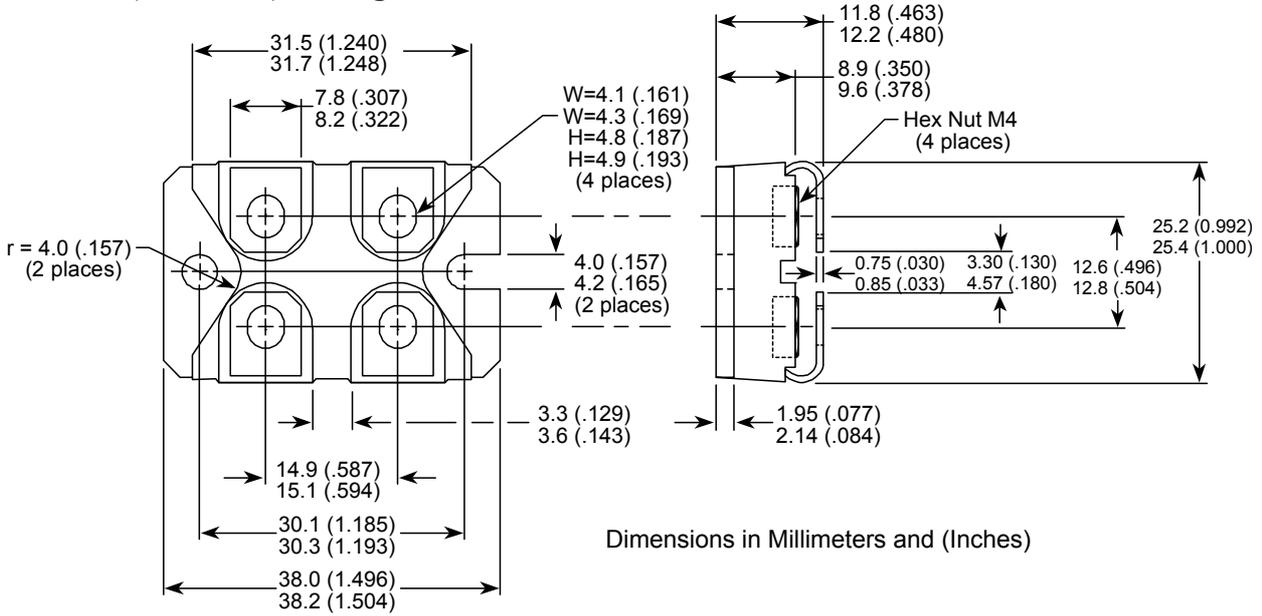
Thermal and package characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
R_{thJC}	Junction to Case Thermal resistance			0.9	$^\circ\text{C}/\text{W}$
R_{thJA}	Junction to Ambient			20	$^\circ\text{C}/\text{W}$
V_{ISOL}	RMS Isolation Voltage, any terminal to case $t = 1$ 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	$^\circ\text{C}$
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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