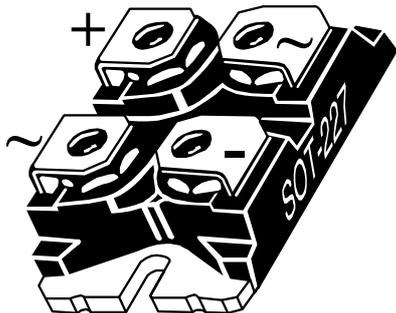
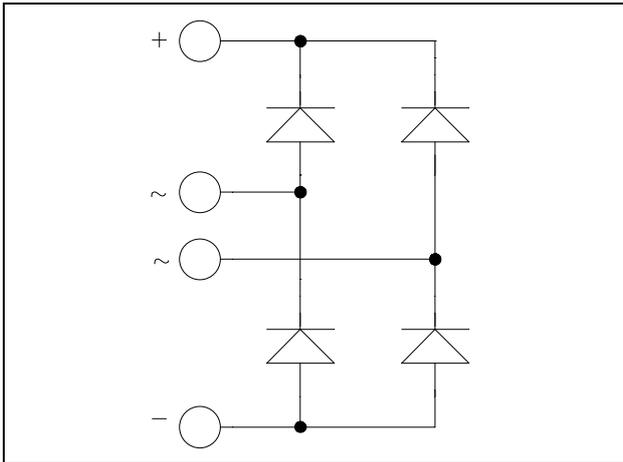


ISOTOP[®] Fast Diode Full Bridge Power Module

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



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_R	Maximum DC reverse Voltage	1000	V		
V_{RRM}	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_C = 25^{\circ}C$	45	A
			$T_C = 80^{\circ}C$	30	
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

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	μA
			$T_j = 125^\circ\text{C}$		500	
C_T	Junction Capacitance	$V_R = 200\text{V}$		28		pF

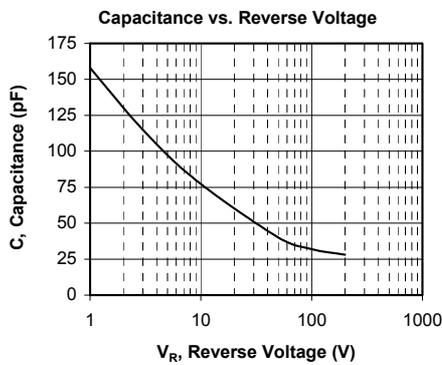
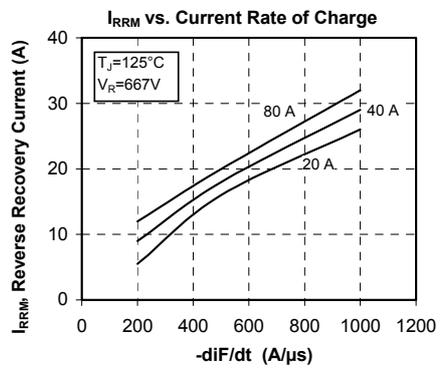
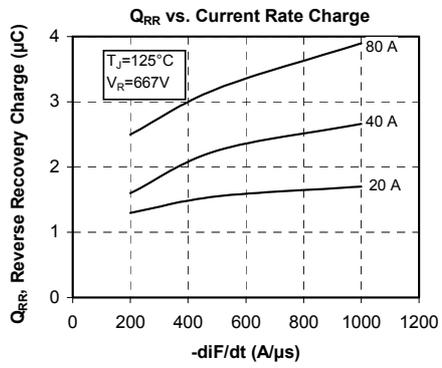
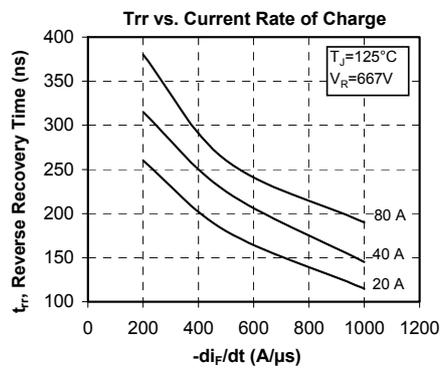
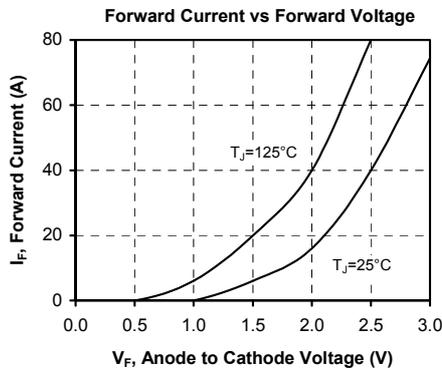
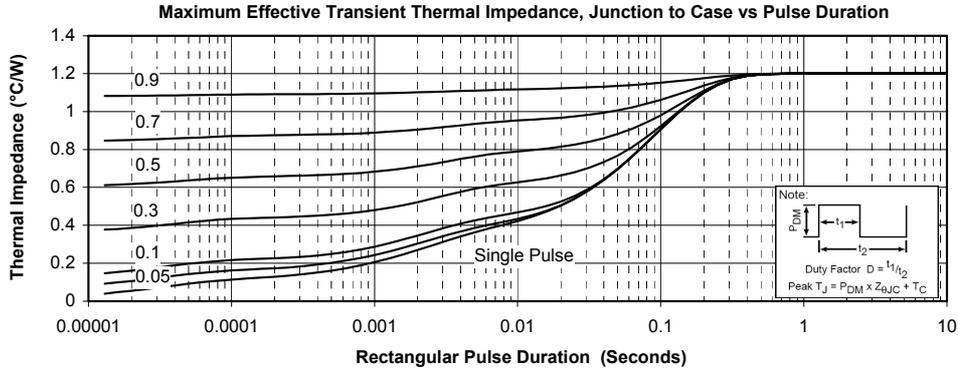
Dynamic Characteristics

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

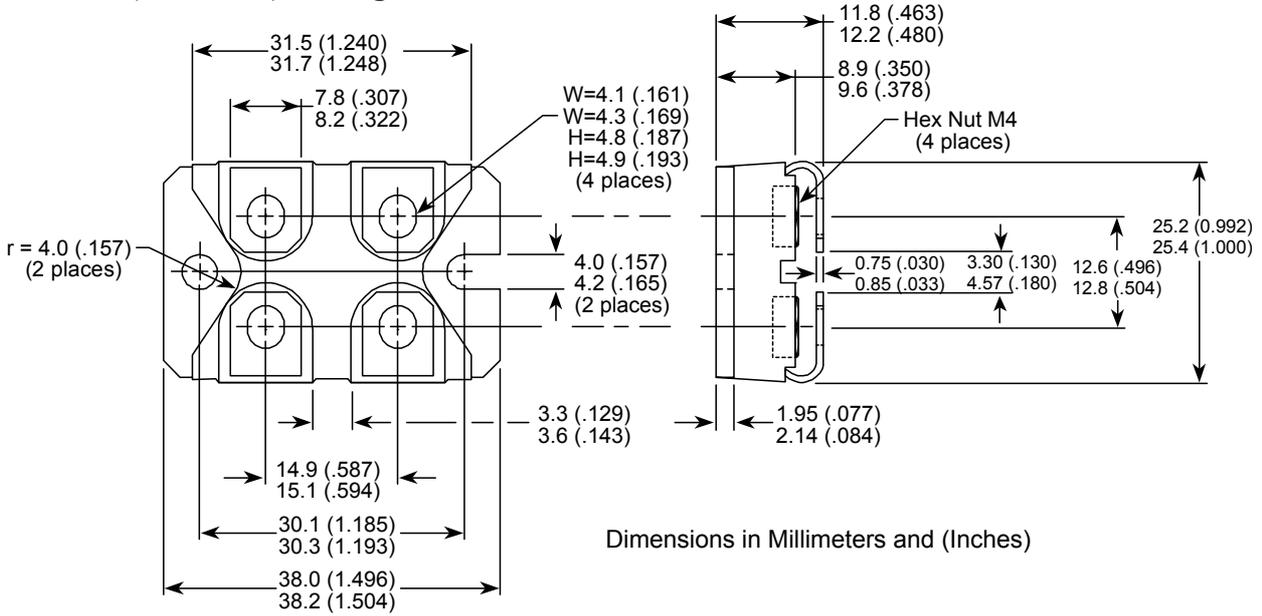
Thermal and package characteristics

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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