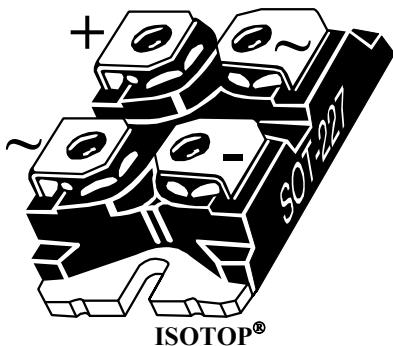
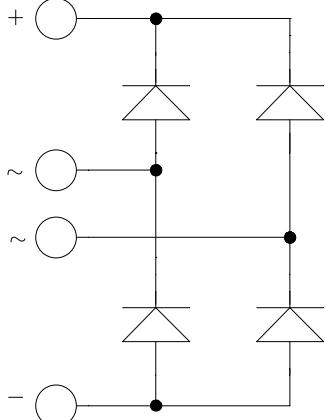


**ISOTOP[®] SiC Diode
Full Bridge Power Module**
**V_{RRM} = 600V
I_C = 6A @ T_C = 100°C**

Application

- Switch mode power supplies rectifier
- Induction heating
- Welding equipment
- High speed rectifiers

Features

- **SiC Schottky Diode**
 - Zero reverse recovery
 - Zero forward recovery
 - Temperature Independent switching behavior
 - Positive temperature coefficient on VF
- ISOTOP[®] Package (SOT-227)
- Very low stray inductance
- High level of integration

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		V
V _{RRM}	Maximum Peak Repetitive Reverse Voltage	600	
I _{F(AV)}	Maximum Average Forward Current		
	Duty cycle = 50% T _C = 100°C	6	A
I _{FSM}	Non-Repetitive Forward Surge Current	210	
	10 μs T _C = 25°C		

 **CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.
See application note APT0502 on www.microsemi.com

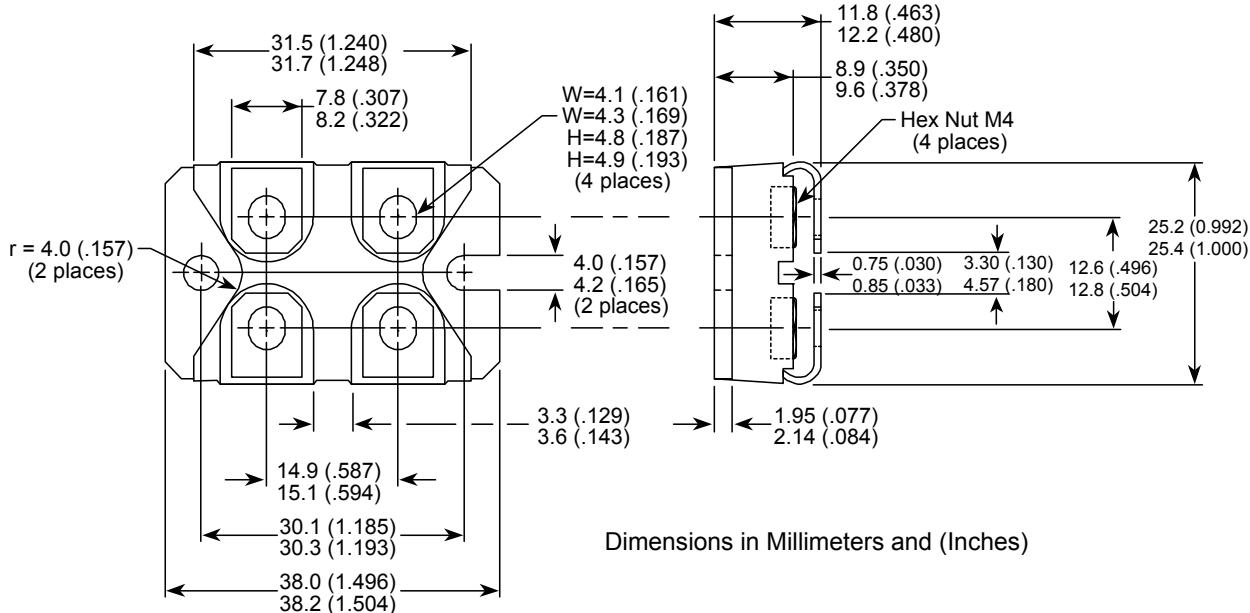
All ratings @ $T_j = 25^\circ\text{C}$ unless otherwise specified

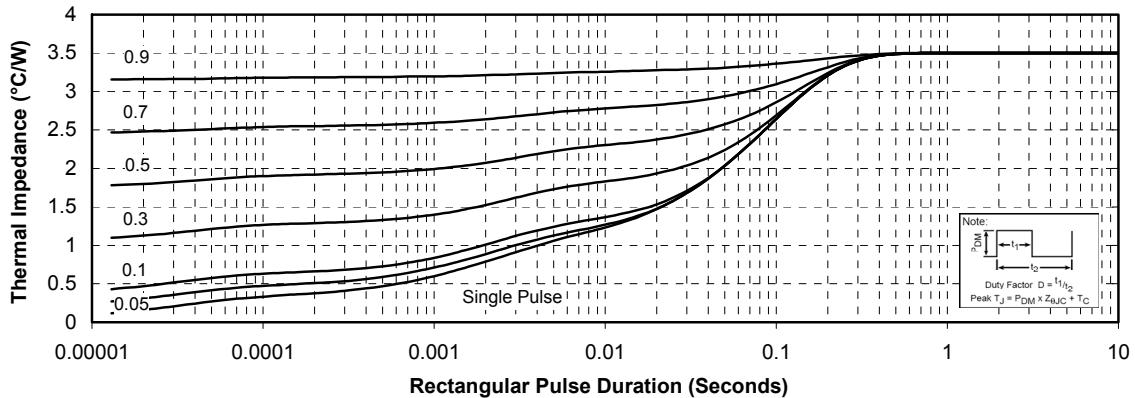
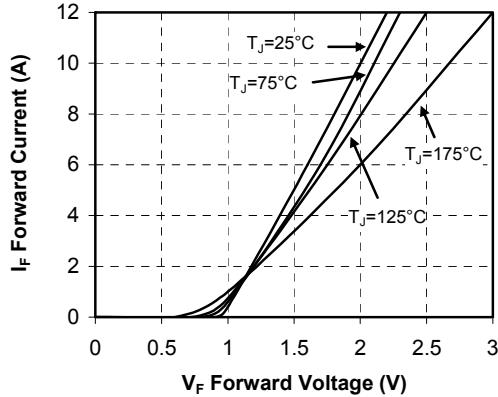
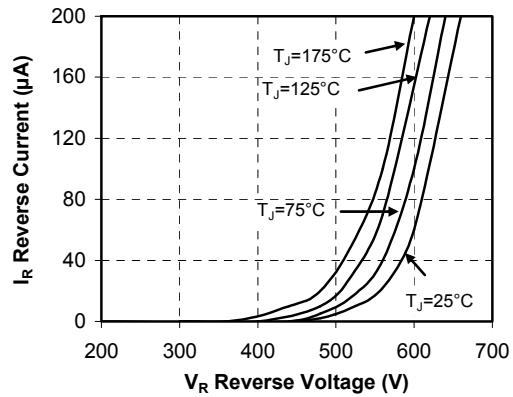
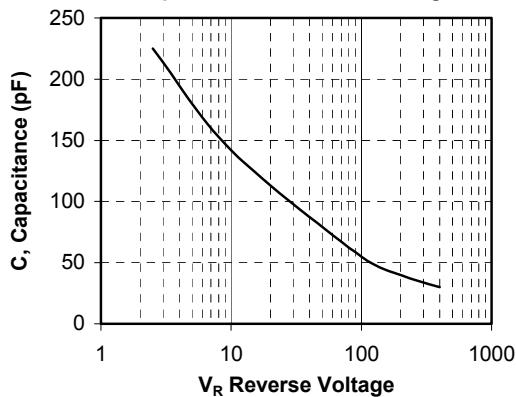
Electrical Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
V_F	Diode Forward Voltage	$I_F = 6\text{A}$	$T_j = 25^\circ\text{C}$	1.6	1.8	V
			$T_j = 175^\circ\text{C}$	2.0	2.4	
I_{RM}	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$	50	200	μA
			$T_j = 175^\circ\text{C}$	100	1000	
Q_C	Total Capacitive Charge	$I_F = 6\text{A}$, $V_R = 600\text{V}$ $dI/dt = 500\text{A}/\mu\text{s}$		17		nC
C	Total Capacitance	$f = 1\text{MHz}$, $V_R = 200\text{V}$		40		pF
		$f = 1\text{MHz}$, $V_R = 400\text{V}$		30		

Thermal and package characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
R_{thJC}	Junction to Case Thermal resistance			3.5	$^\circ\text{C}/\text{W}$
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

SOT-227 (ISOTOP[®]) Package Outline


Typical Performance Curve
Maximum Effective Transient Thermal Impedance, Junction to Case vs Pulse Duration

Forward Characteristics

Reverse Characteristics

Capacitance vs. Reverse Voltage


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