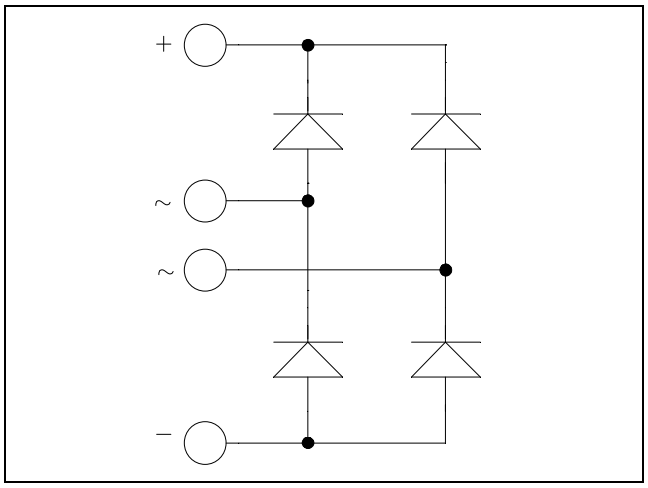
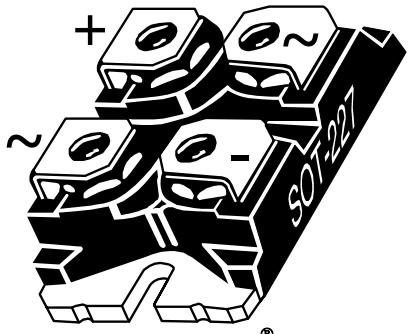
ISOTOP® SiC Diode Full Bridge Power Module

V_{RRM} = 600V
I_C = 40A @ Tc = 100°C





ISOTOP®

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			600	V
V_{RRM}	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	T_C = 100°C	40	A
I_{FSM}	Non-Repetitive Forward Surge Current	10 µs	T_C = 25°C	500	

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°C unless otherwise specified

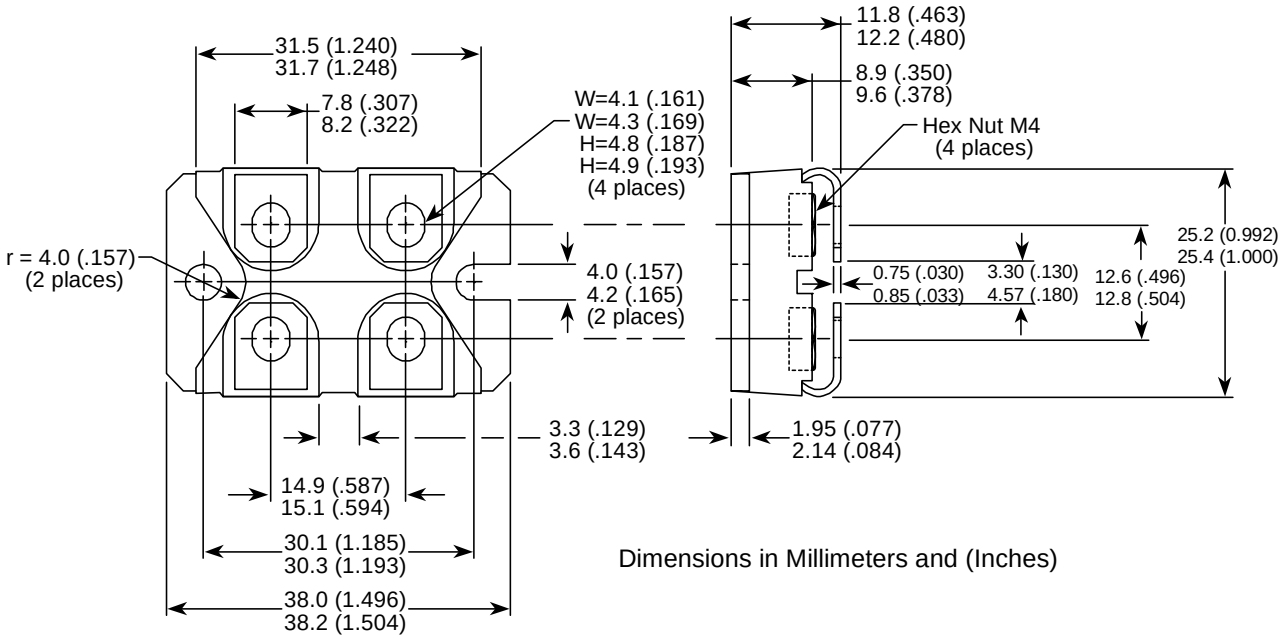
Electrical Characteristics

Symbol	*Characteristic*	*Test Conditions*		*Min*	*Typ*	*Max*	*Unit*
V_F	Diode Forward Voltage	I_F = 40A	T_j = 25°C		1.6	1.8	V
			T_j = 175°C		2	2.4	
I_{RM}	Maximum Reverse Leakage Current	V_R = 600V	T_j = 25°C		200	800	µA
			T_j = 175°C		400	4000	
Q_C	Total Capacitive Charge	I_F = 40A, V_R = 300V di/dt =1200A/µs			56		nC
C	Total Capacitance	f = 1MHz, V_R = 200V			260		pF
		f = 1MHz, V_R = 400V			200		

Thermal and package characteristics

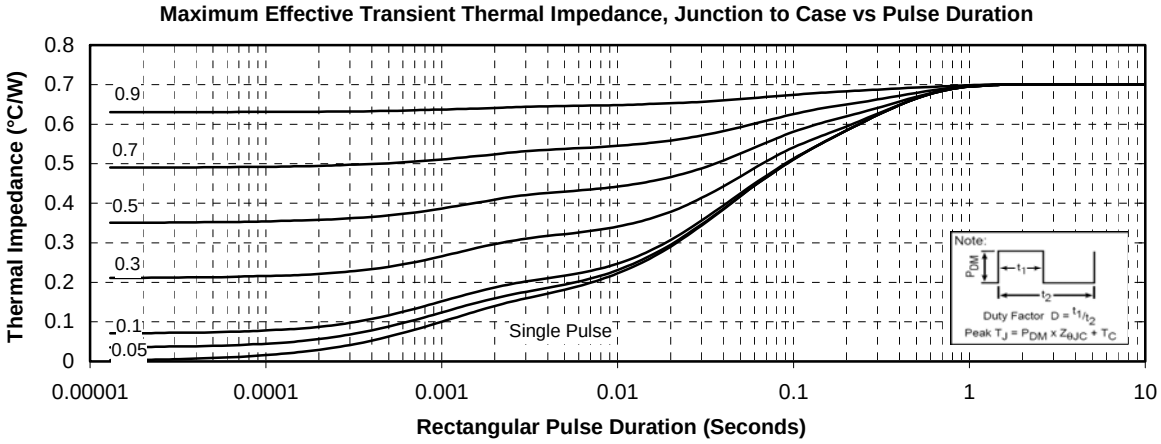
Symbol	*Characteristic*	*Min*	*Typ*	*Max*	*Unit*
R_{thJC}	Junction to Case Thermal resistance			0.7	°C/W
R_{thJA}	Junction to Ambient			20	
V_{ISOL}	RMS Isolation Voltage, any terminal to case t =1 min, I isol<1mA, 50/60Hz	2500			V
T_J,T_{STG}	Storage Temperature Range	-55		175	°C
T_L	Max Lead Temp for 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

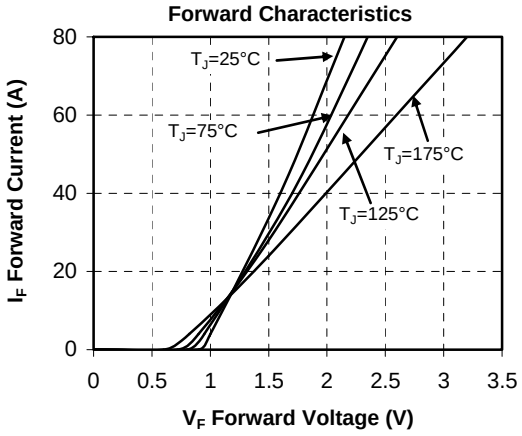
SOT-227 (ISOTOP®) Package Outline

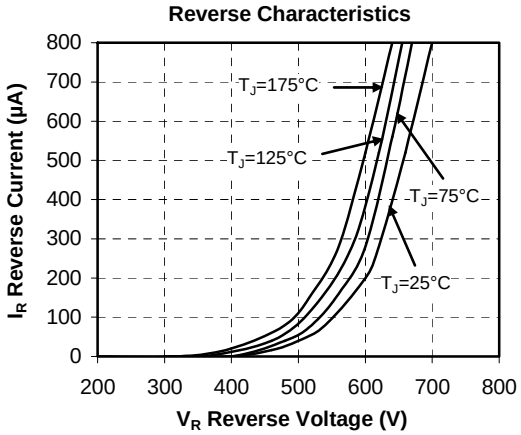


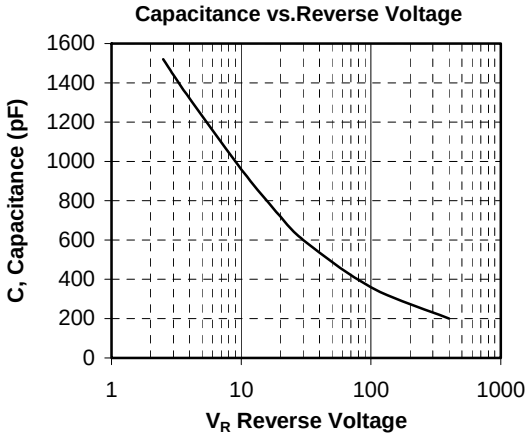
Dimensions in Millimeters and (Inches)

Typical Performance Curve









ISOTOP® is a registered trademark of ST Microelectronics NV

Microsemi reserves the right to change, without notice, the specifications and information contained herein

Microsemi's products are covered by one or more of U.S patents 4,895,810 5,045,903 5,089,434 5,182,234 5,019,522 5,262,336 6,503,786 5,256,583 4,748,103 5,283,202 5,231,474 5,434,095 5,528,058 6,939,743 7,352,045 5,283,201 5,801,417 5,648,283 7,196,634 6,664,594 7,157,886 6,939,743 7,342,262 and foreign patents. U.S and Foreign patents pending. All Rights Reserved.