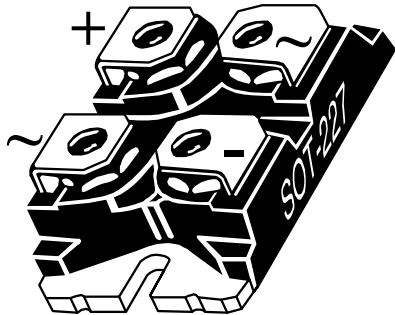
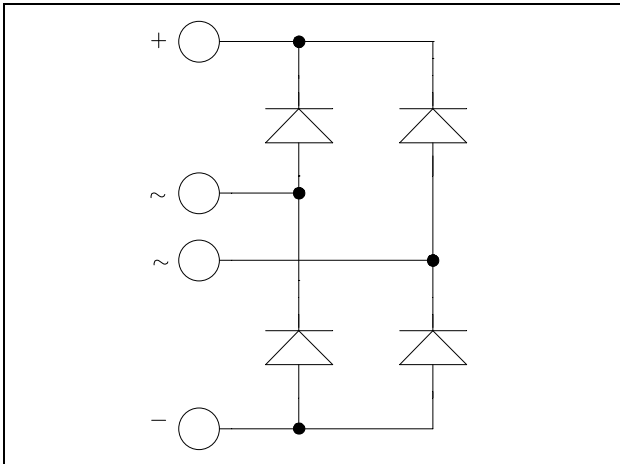


ISOTOP[®] Fast Diode Full Bridge Power Module

$V_{RRM} = 600V$
 $I_F = 30A @ T_c = 80^{\circ}C$



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	600	V		
V_{RRM}	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_C = 80^{\circ}C$	30	A
I_{FRM}	Maximum repetitive forward current limited by T_{Jmax}	8.3ms	$T_J = 45^{\circ}C$	60	

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	$I_F = 30\text{A}$	$T_j = 25^\circ\text{C}$		1.6	2	V
			$T_j = 150^\circ\text{C}$		1.5		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$			250	μA
			$T_j = 150^\circ\text{C}$			500	

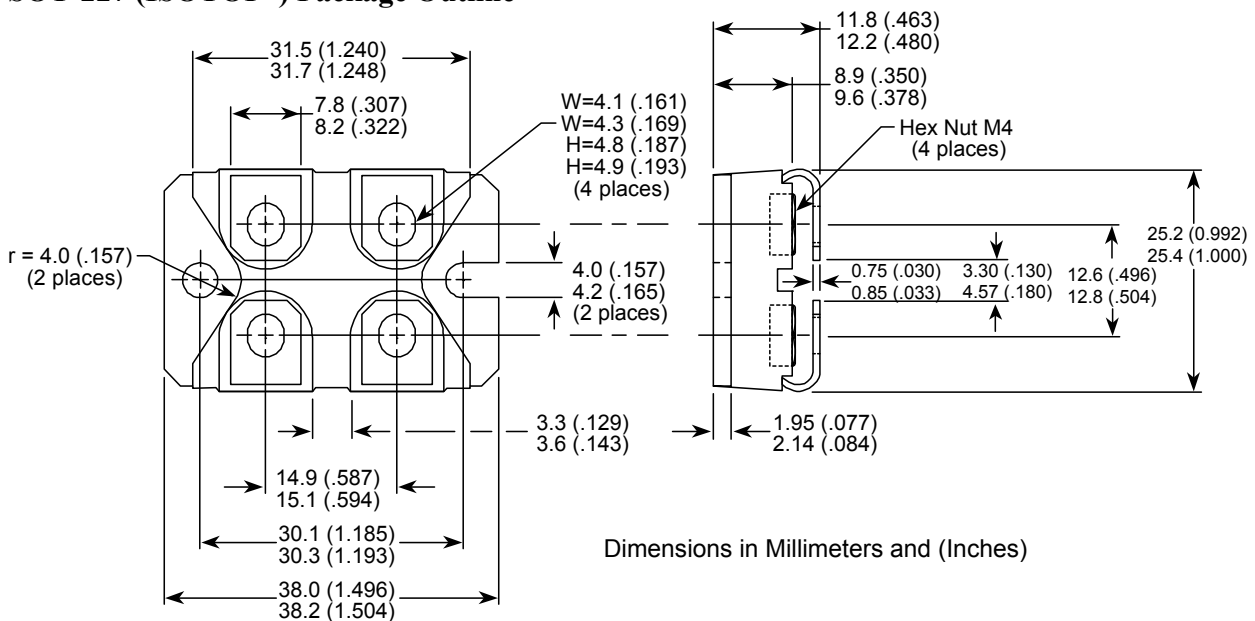
Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
t_{rr}	Reverse Recovery Time	$I_F = 30\text{A}$ $V_R = 300\text{V}$ $di/dt = 1800\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		100	ns
			$T_j = 150^\circ\text{C}$		150	
Q_{rr}	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		1.5	μC
			$T_j = 150^\circ\text{C}$		3.1	
E_{rr}	Reverse Recovery Energy	$T_j = 25^\circ\text{C}$		0.34	mJ	
		$T_j = 150^\circ\text{C}$		0.65		

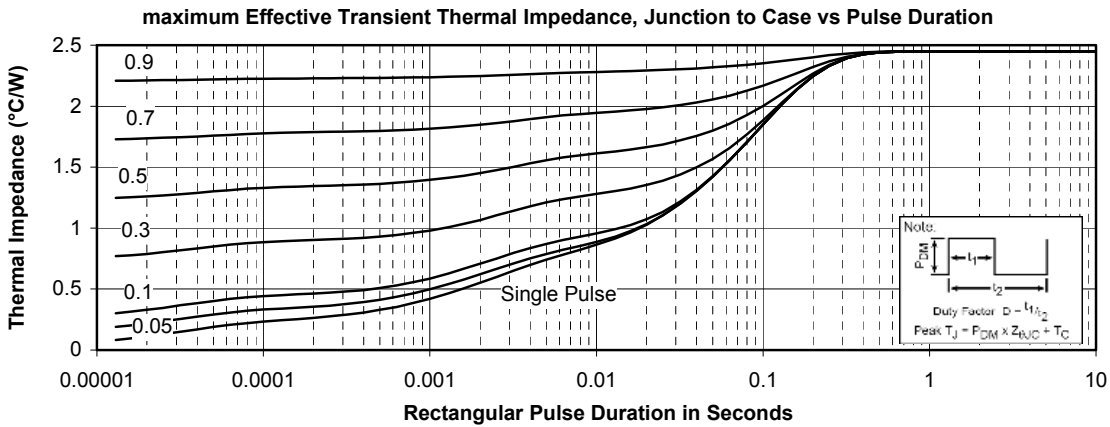
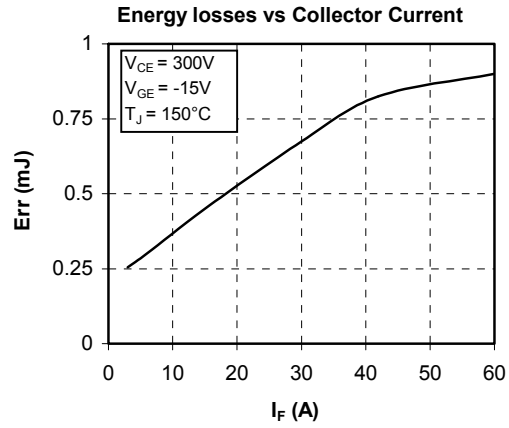
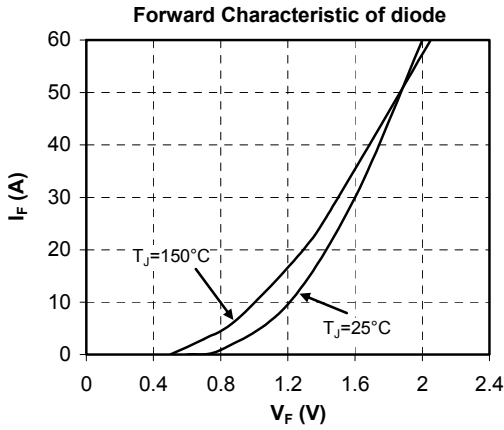
Thermal and package characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
R_{thJC}	Junction to Case Thermal resistance			2.45	$^\circ\text{C}/\text{W}$
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



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