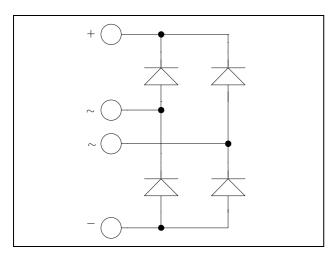


# ISOTOP® Rectifier diode full bridge Power Module

$$V_{RRM} = 1600V$$
  
 $I_F = 40A @ Tc = 80°C$ 



### **Application**

Input mains rectifier

#### **Features**

- Planar double passivated chips
- 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			1600	V
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage			1000	V
$I_{\mathrm{F}}$	DC Forward Current		$T_C = 80$ °C	40	٨
$I_{FSM}$	Non-Repetitive Forward Surge Current	t=10ms	$T_J = 45$ °C	400	A

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



## All ratings @ $T_i = 25$ °C unless otherwise specified

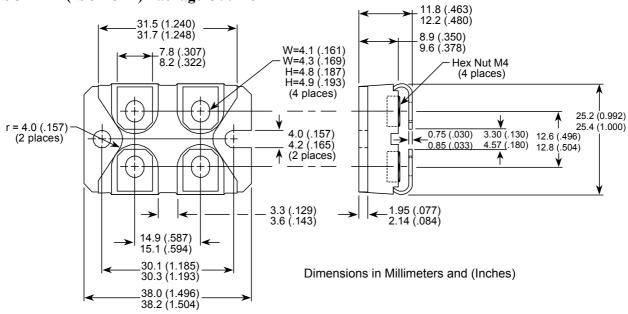
#### **Electrical Characteristics**

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
$I_R$	Reverse Current	$V_{R} = 1600V$	$T_j = 25$ °C		20		μΑ
1 <sub>R</sub>	Reverse Current	V <sub>R</sub> - 1000 V	$T_j = 125$ °C		2		mA
$V_{\rm F}$	Forward Voltage	$I_F = 40A$	$T_j = 25^{\circ}C$		1.3		V
			$T_j = 125$ °C		1.1		V
$V_{T}$	On – state Voltage				0.8		V
$r_{\mathrm{T}}$	On – state Slope resistance				10.5		mΩ

### Thermal and package characteristics

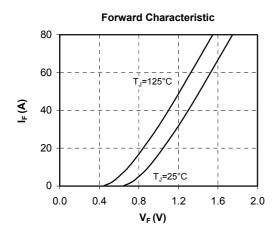
Symbol	Characteristic	Min	Тур	Max	Unit
$R_{thJC}$	Junction to Case Thermal resistance			1.5	°C/W
$R_{thJA}$	Junction to Ambient			20	C/ VV
$V_{ISOL}$	RMS Isolation Voltage, any terminal to case t = 1 min, 50/60Hz	2500			V
$T_J, T_{STG}$	Storage Temperature Range	-55		150	°C
$T_{ m L}$	Max Lead Temp for Soldering:0.063" from case for 10 sec			300	C
Torque	Mounting torque (Mounting = 8-32 or 4mm Machine and terminals = 4mm Machine)			1.5	N.m
Wt	Package Weight		29.2		g

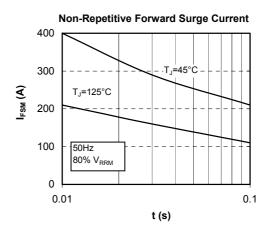
## **SOT-227 (ISOTOP®) Package Outline**



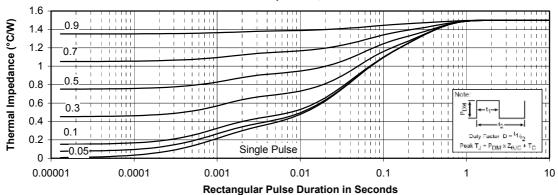


### **Typical Performance Curve**





#### maximum Effective Transient Thermal Impedance, Junction to Case vs Pulse Duration



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