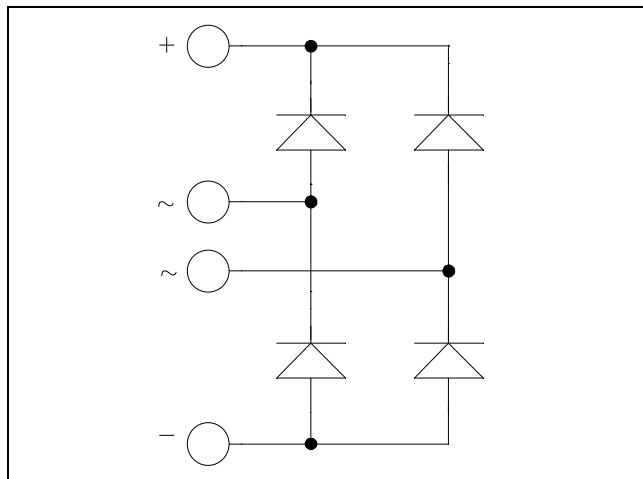


APT90DR160HJ

**ISOTOP[®] Rectifier diode
full bridge Power Module**

**$V_{RRM} = 1600V$
 $I_F = 90A @ T_c = 80^{\circ}C$**



Application

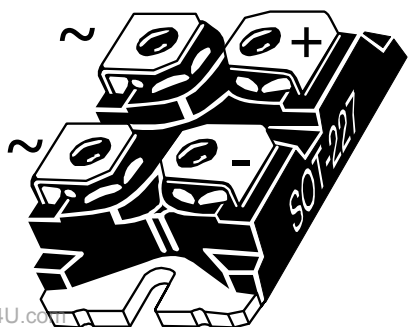
- Input mains rectifier

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



www.DataSheet4U.com

Absolute maximum ratings

Symbol	Parameter			Max ratings	Unit
V _R	Maximum DC reverse Voltage			1600	V
V _{RRM}	Maximum Peak Repetitive Reverse Voltage				
I _F	DC Forward Current		T _C = 90°C	80	A
I _{FSM}	Non-Repetitive Forward Surge Current	t=10ms	T _J = 45°C	850	



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

APT90DR160HJ

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

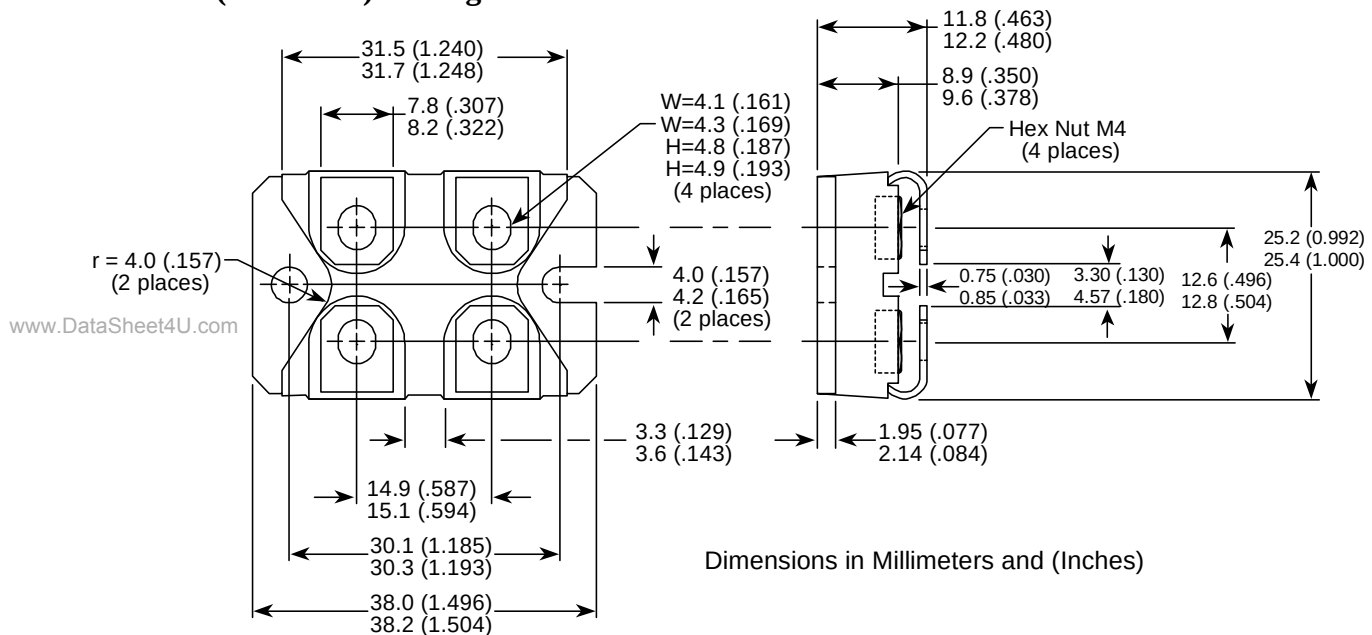
Electrical Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
I_R	Reverse Current	$V_R = 1600\text{V}$	$T_j = 25^\circ\text{C}$	50		μA
			$T_j = 125^\circ\text{C}$	4		mA
V_F	Forward Voltage	$I_F = 90\text{A}$	$T_j = 25^\circ\text{C}$	1.3		V
			$T_j = 125^\circ\text{C}$	1.1		
V_T	On – state Voltage			0.8		V
r_T	On – state Slope resistance			4.8		$\text{m}\Omega$

Thermal and package characteristics

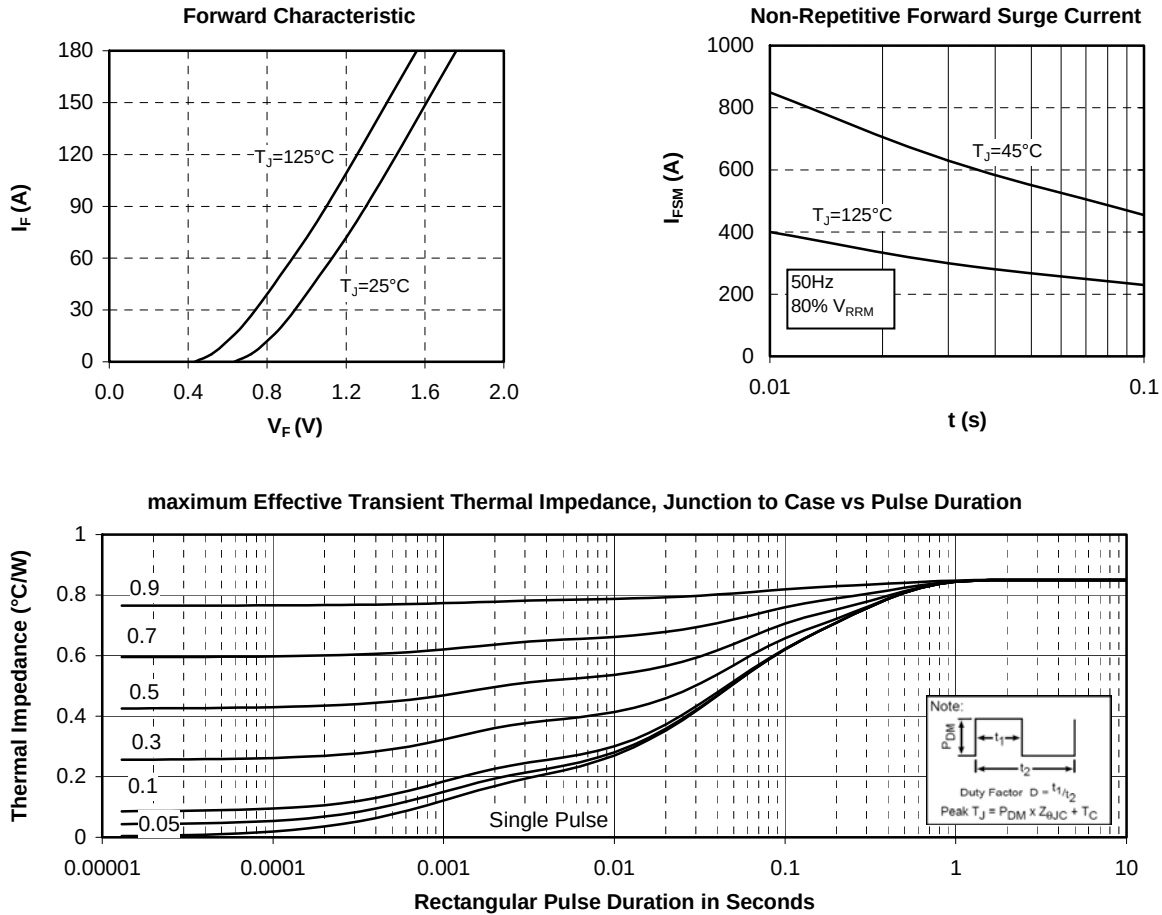
Symbol	Characteristic	Min	Typ	Max	Unit
R_{thJC}	Junction to Case Thermal resistance			0.85	$^\circ\text{C}/\text{W}$
R_{thJA}	Junction to Ambient			20	
V_{ISOL}	RMS Isolation Voltage, any terminal to case $t=1\text{ min}$, $I_{isol}<1\text{mA}$, 50/60Hz	2500			V
T_j, T_{STG}	Storage Temperature Range	-55		150	$^\circ\text{C}$
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



APT90DR160HJ

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.