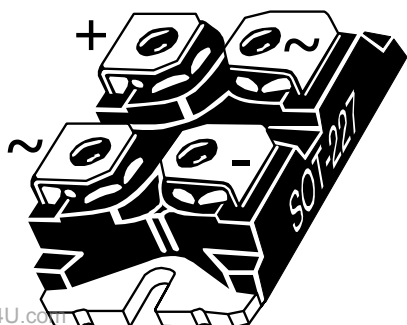
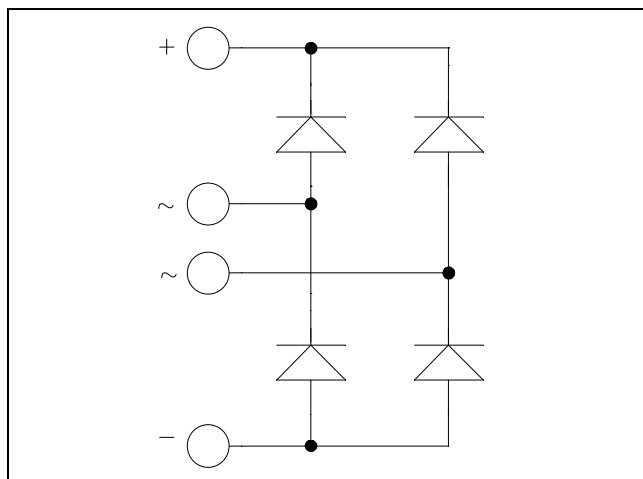


APT30DF120HJ

ISOTOP® Fast Diode Full Bridge Power Module

$$V_{RRM} = 1200V$$

$$I_C = 30A @ T_C = 80^{\circ}C$$



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			1200	V
V _{RRM}	Maximum Peak Repetitive Reverse Voltage				
I _{F(AV)}	Maximum Average Forward Current	Duty cycle = 50%	T _C = 25°C	45	A
			T _C = 80°C	30	
I _{FSM}	Non-Repetitive Forward Surge Current	8.3ms	T _J = 45°C	210	

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

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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	$I_F = 30\text{A}$		2.5	3.1	V
		$I_F = 60\text{A}$		3.2		
		$I_F = 30\text{A}$ $T_j = 125^\circ\text{C}$		1.8		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 1200\text{V}$	$T_j = 25^\circ\text{C}$		100	μA
			$T_j = 125^\circ\text{C}$		500	
C_T	Junction Capacitance	$V_R = 200\text{V}$		28		pF

Dynamic Characteristics

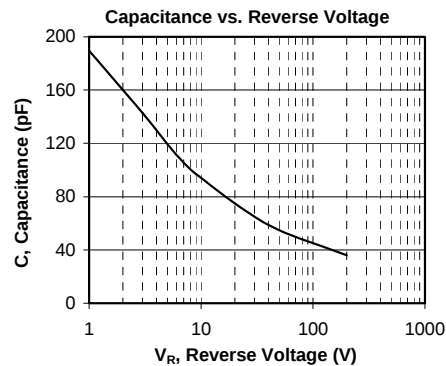
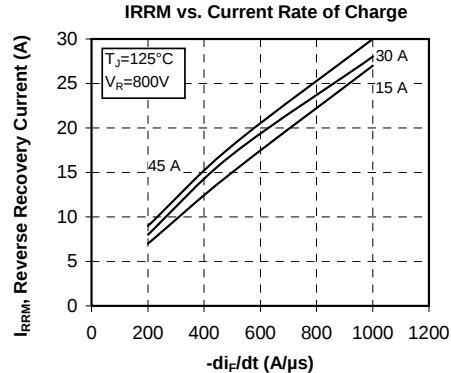
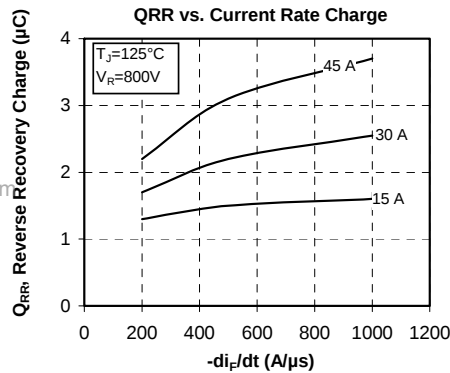
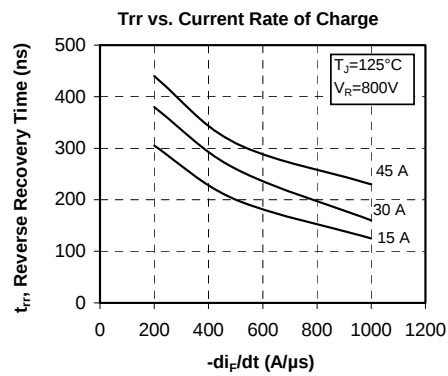
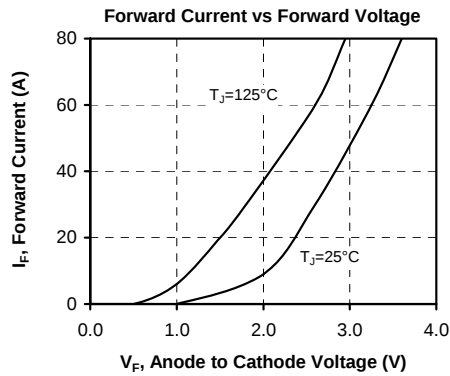
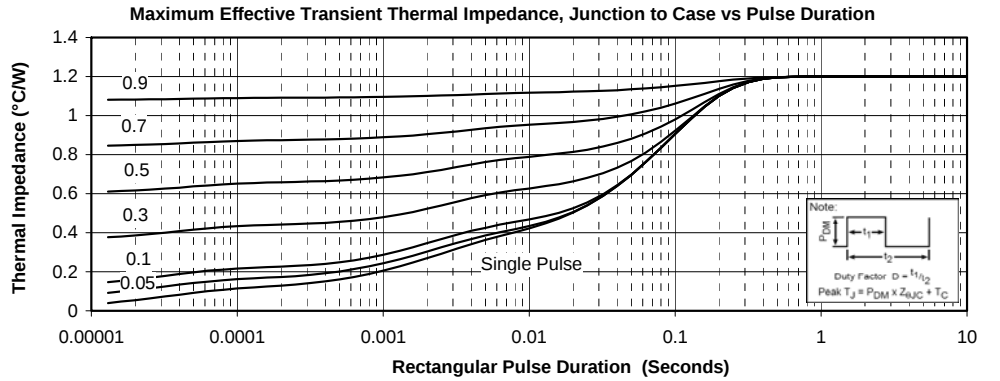
Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
t _{rr}	Reverse Recovery Time	I _F = 30A V _R = 800V di/dt = 200A/μs	T _j = 25°C		300		ns
			T _j = 125°C		380		
Q _{rr}	Reverse Recovery Charge		T _j = 25°C		360		nC
			T _j = 125°C		1700		
I _{RRM}	Reverse Recovery Current		T _j = 25°C		4		A
			T _j = 125°C		8		
t _{rr}	Reverse Recovery Time	I _F = 30A V _R = 800V di/dt=1000A/μs	T _j = 125°C		160		ns
Q _{rr}	Reverse Recovery Charge				2550		nC
I _{RRM}	Reverse Recovery Current				28		A

Thermal and package characteristics

Symbol	Characteristic	Min	Typ	Max	Unit
R_{thJC}	Junction to Case Thermal resistance			1.2	$^\circ\text{C}/\text{W}$
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		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

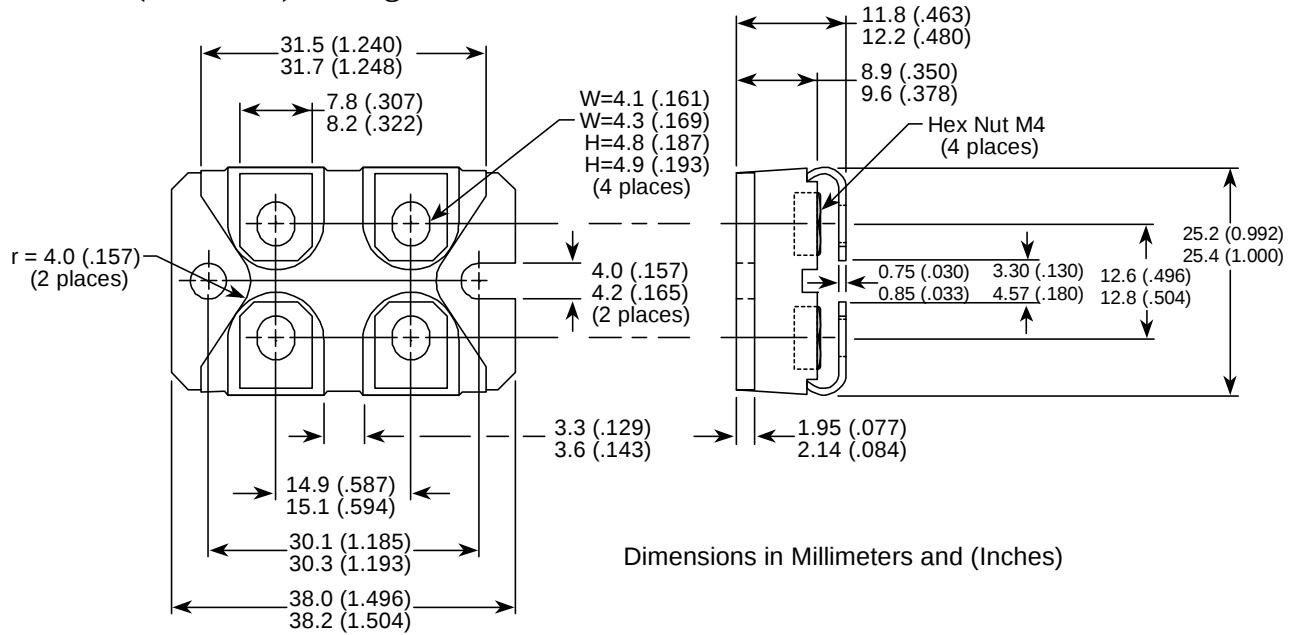
APT30DF120HJ

Typical Performance Curve



APT30DF120HJ

SOT-227 (ISOTOP®) Package Outline



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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.