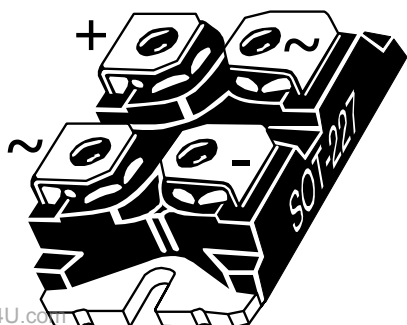
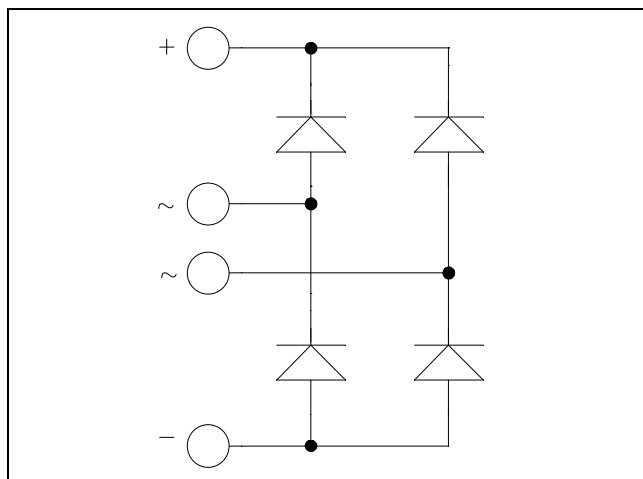


APT60DF60HJ

ISOTOP® Fast Diode Full Bridge Power Module

$$V_{RRM} = 600V$$

$$I_C = 60A @ T_C = 80^{\circ}C$$



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 = 25°C	90	A	
			T _C = 80°C	60		
I _{FSM}	Non-Repetitive Forward Surge Current	8.3ms	T _J = 45°C	500		



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	$I_F = 60\text{A}$			1.7	2.3	V
		$I_F = 120\text{A}$			2		
		$I_F = 60\text{A}$	$T_j = 125^\circ\text{C}$		1.4		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$			25	μA
			$T_j = 125^\circ\text{C}$			500	
C_T	Junction Capacitance	$V_R = 200\text{V}$			145		pF

Dynamic Characteristics

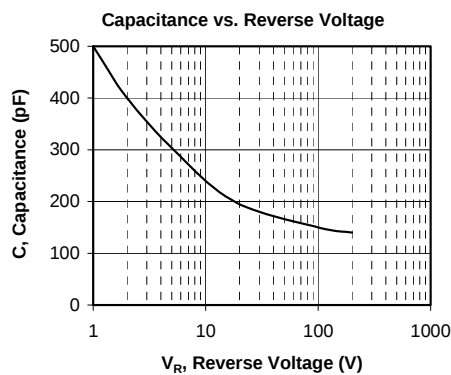
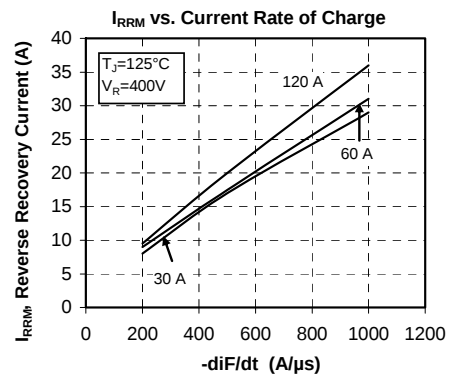
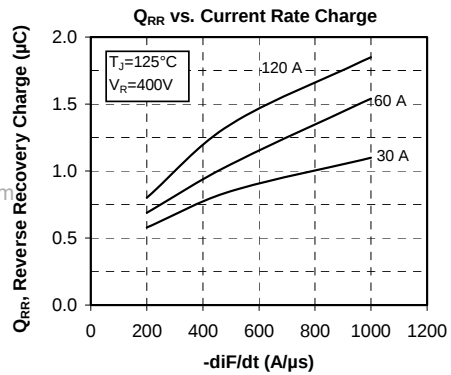
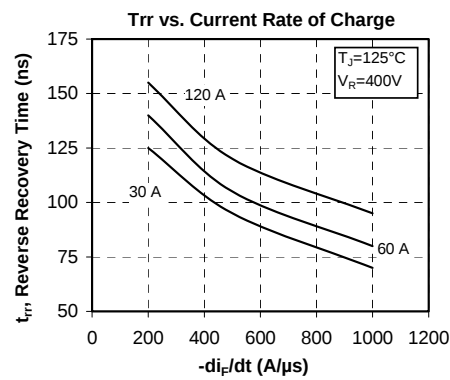
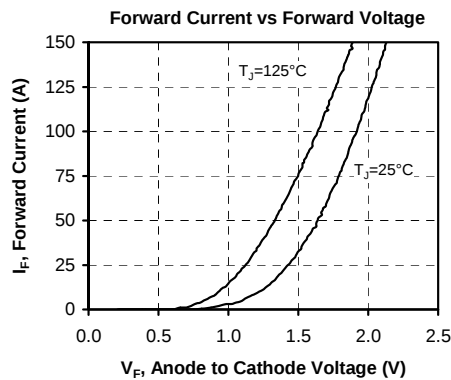
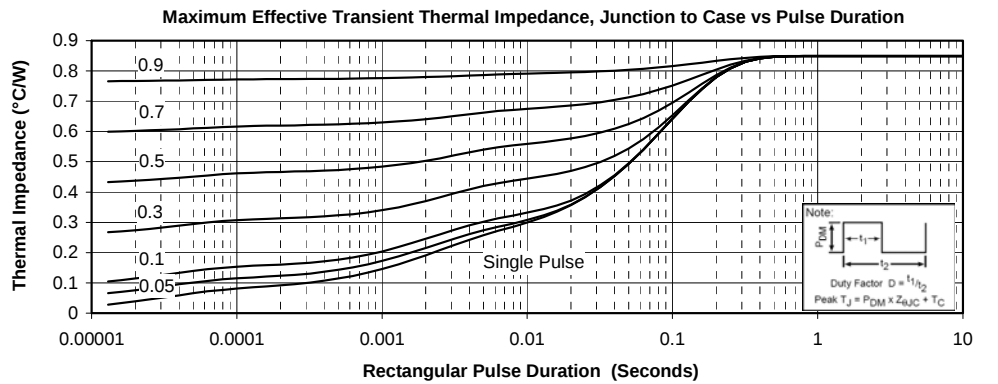
Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
t_{rr}	Reverse Recovery Time	$I_F = 60\text{A}$ $V_R = 400\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		70		ns
			$T_j = 125^\circ\text{C}$		140		
Q_{rr}	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		100		nC
			$T_j = 125^\circ\text{C}$		690		
I_{RRM}	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		4		A
			$T_j = 125^\circ\text{C}$		9		
t_{rr}	Reverse Recovery Time	$I_F = 60\text{A}$ $V_R = 400\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		80		ns
Q_{rr}	Reverse Recovery Charge				1540		nC
I_{RRM}	Reverse Recovery Current				31		A

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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		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

Typical Performance Curve



APT60DF60HJ

SOT-227 (ISOTOP®) Package Outline

