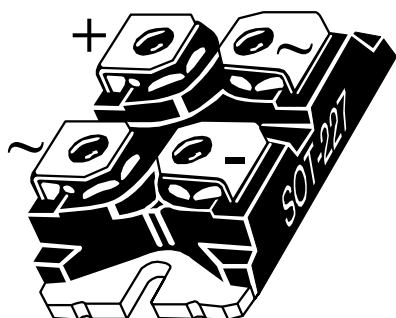
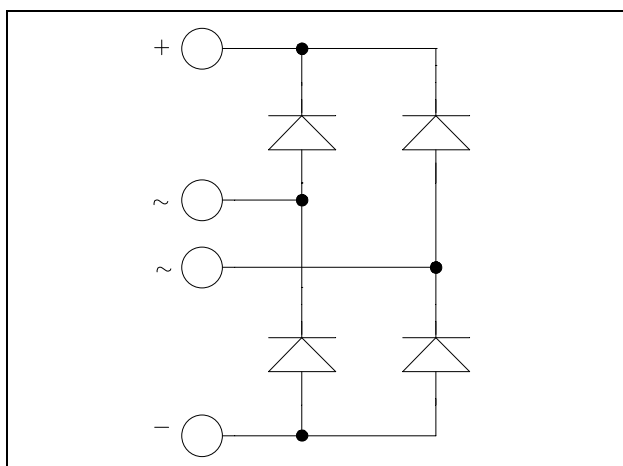


ISOTOP® Fast Diode Full Bridge Power Module

$V_{RRM} = 1000V$
 $I_C = 30A @ T_C = 80^\circ C$



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				1000	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

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	$I_F = 40\text{A}$		2.5	3	V
		$I_F = 80\text{A}$		3.1		
		$I_F = 40\text{A}$ $T_j = 125^\circ\text{C}$		2		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 1000\text{V}$	$T_j = 25^\circ\text{C}$		100	μA
			$T_j = 125^\circ\text{C}$		500	
C_T	Junction Capacitance	$V_R = 200\text{V}$		28		pF

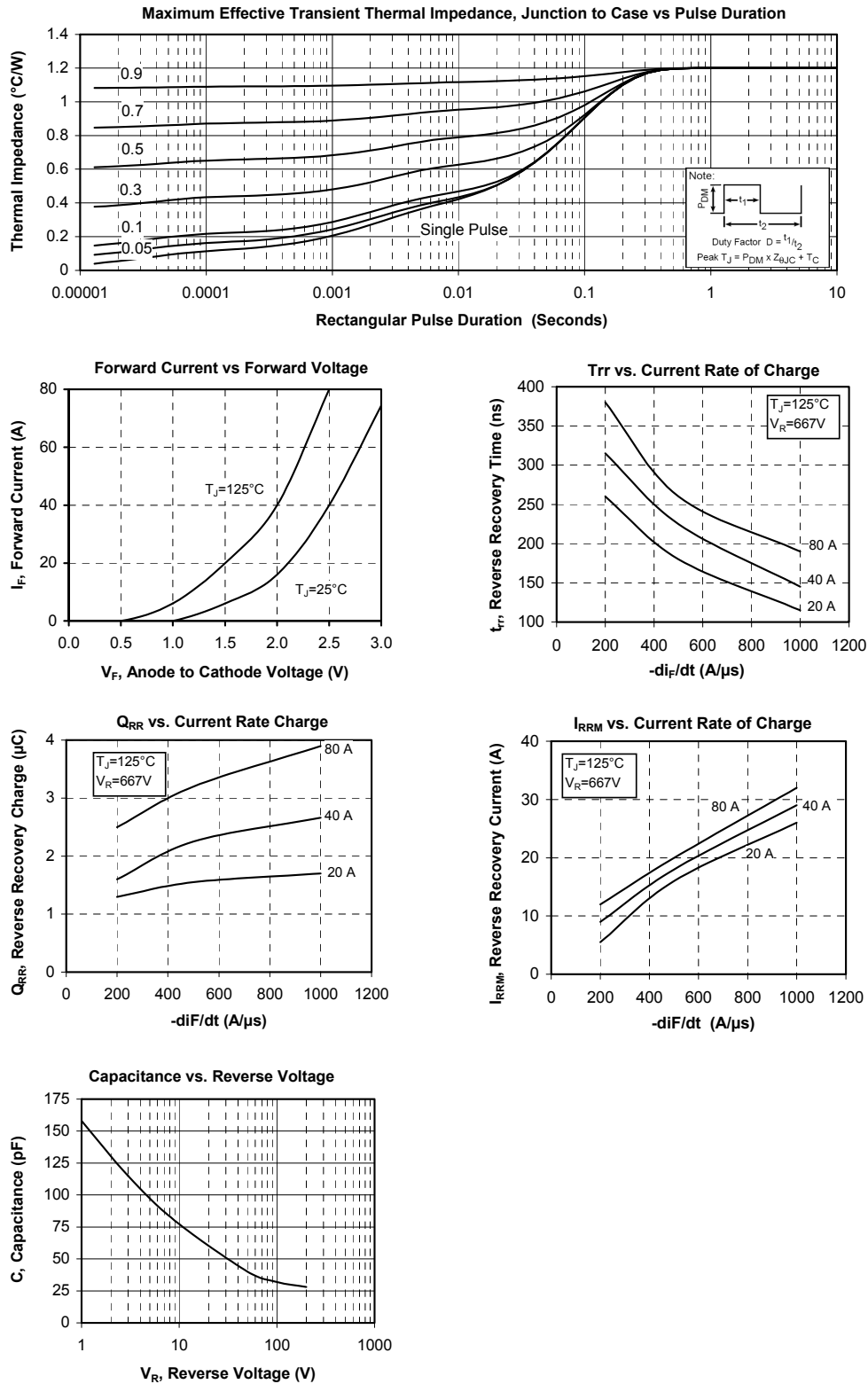
Dynamic Characteristics

Symbol		Characteristic	Test Conditions		Min	Typ	Max	Unit
t _{rr}	Reverse Recovery Time	I _F = 40A V _R = 667V di/dt = 200A/μs	T _j = 25°C		250		ns	
			T _j = 125°C		315			
Q _{rr}	Reverse Recovery Charge		T _j = 25°C		415		nC	
			T _j = 125°C		1650			
I _{RRM}	Reverse Recovery Current		T _j = 25°C		4		A	
			T _j = 125°C		9			
t _{rr}	Reverse Recovery Time	I _F = 40A V _R = 667V di/dt=1000A/μs	T _j = 125°C		150		ns	
Q _{rr}	Reverse Recovery Charge				2660		nC	
I _{RRM}	Reverse Recovery Current				29		A	

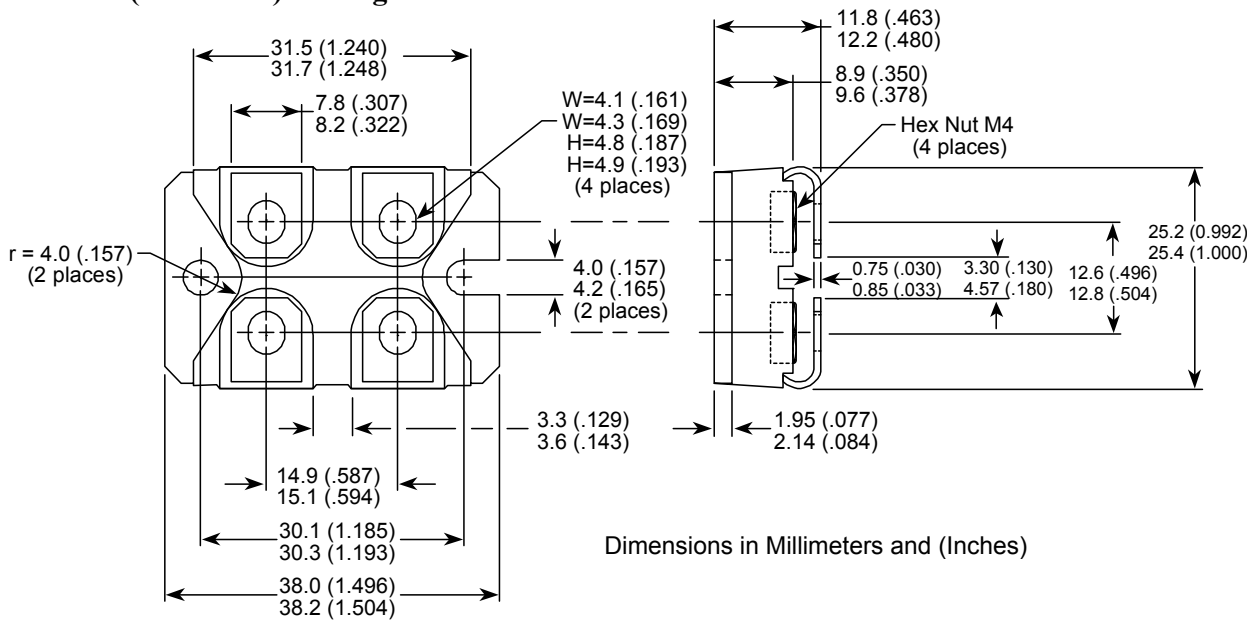
Thermal and package characteristics

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 $t = 1\text{ min}$, 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



SOT-227 (ISOTOP®) Package Outline



ISOTOP® is a registered trademark of ST Microelectronics NV

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