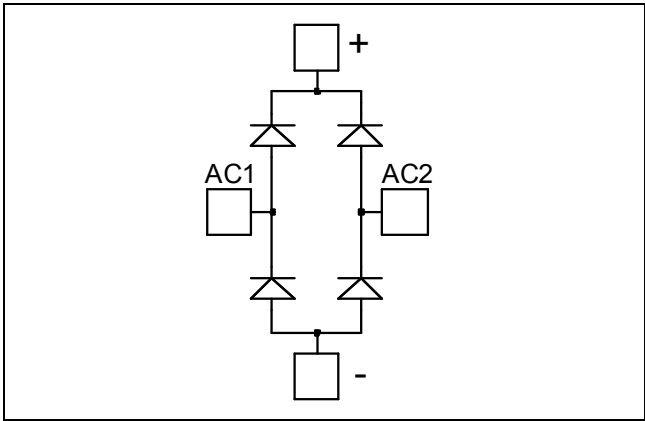


Diode Full Bridge Power Module

$V_{RRM} = 1000V$
 $I_C = 100A @ T_c = 70^\circ C$

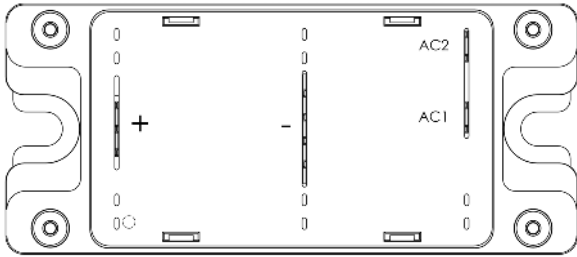


Application

- Uninterruptible Power Supply (UPS)
- 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
 - Symmetrical design
 - Lead frames for power connections
- High level of integration



Benefits

- Outstanding performance at high frequency operation
- Low losses
- Low noise switching
- Solderable terminals for easy PCB mounting
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- RoHS Compliant

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

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%	A	
		$T_C = 25^\circ C$		130
$T_C = 70^\circ C$	100			
$I_{F(RMS)}$	RMS Forward Current	Duty cycle = 50%		$T_C = 45^\circ C$
I_{FSM}	Non-Repetitive Forward Surge Current	8.3ms	$T_C = 45^\circ C$	500

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

Electrical Characteristics

<i>Symbol</i>	<i>Characteristic</i>	<i>Test Conditions</i>		<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
V _F	Diode Forward Voltage	I _F = 100A			2.1	2.7	V
		I _F = 150A			2.3		
		I _F = 100A	T _j = 125°C		1.7		
I _{RM}	Maximum Reverse Leakage Current	V _R = 1000V	T _j = 25°C			100	μA
			T _j = 125°C			500	
C _T	Junction Capacitance	V _R = 1000V			120		pF

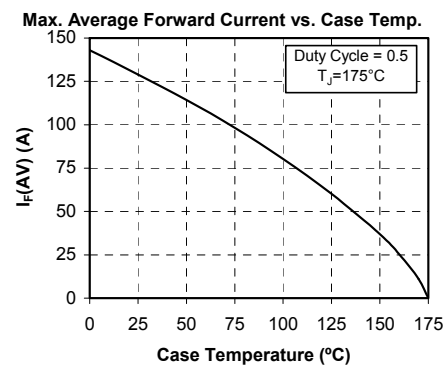
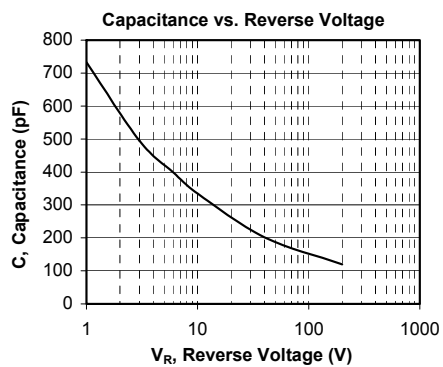
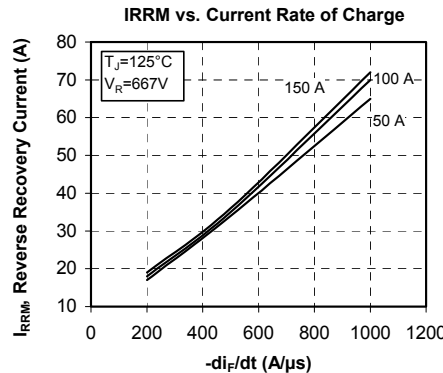
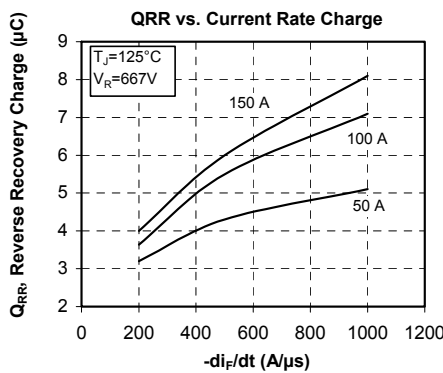
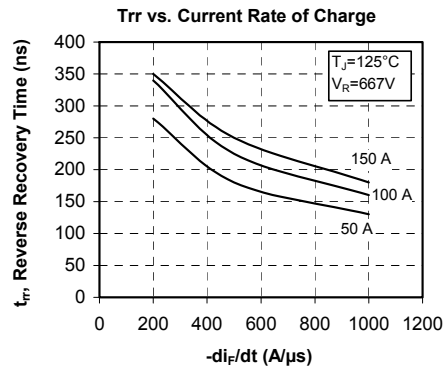
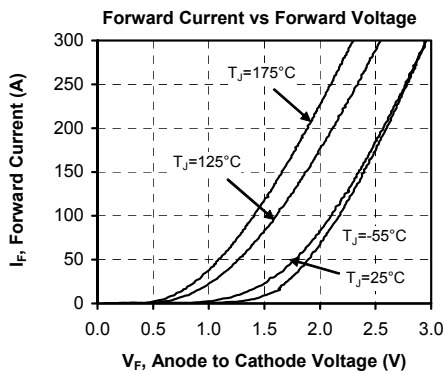
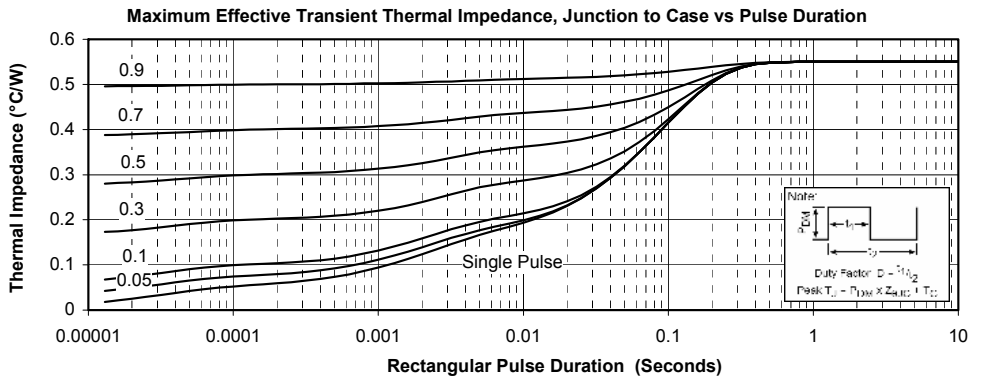
Dynamic Characteristics

<i>Symbol</i>	<i>Characteristic</i>	<i>Test Conditions</i>		<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
t _{rr}	Reverse Recovery Time	I _F =1A, V _R =30V	T _j = 25°C		45		ns
t _{rr}	Reverse Recovery Time	I _F = 100A V _R = 667V di/dt = 200A/μs	T _j = 25°C		290		ns
			T _j = 125°C		340		
Q _{rr}	Reverse Recovery Charge		T _j = 25°C		685		nC
			T _j = 125°C		3645		
I _R RM	Reverse Recovery Current		T _j = 25°C		6		A
			T _j = 125°C		18		
t _{rr}	Reverse Recovery Time	I _F = 100A V _R = 667V di/dt=1000A/μs	T _j = 125°C		160		ns
Q _{rr}	Reverse Recovery Charge				7100		nC
I _R RM	Reverse Recovery Current				70		A

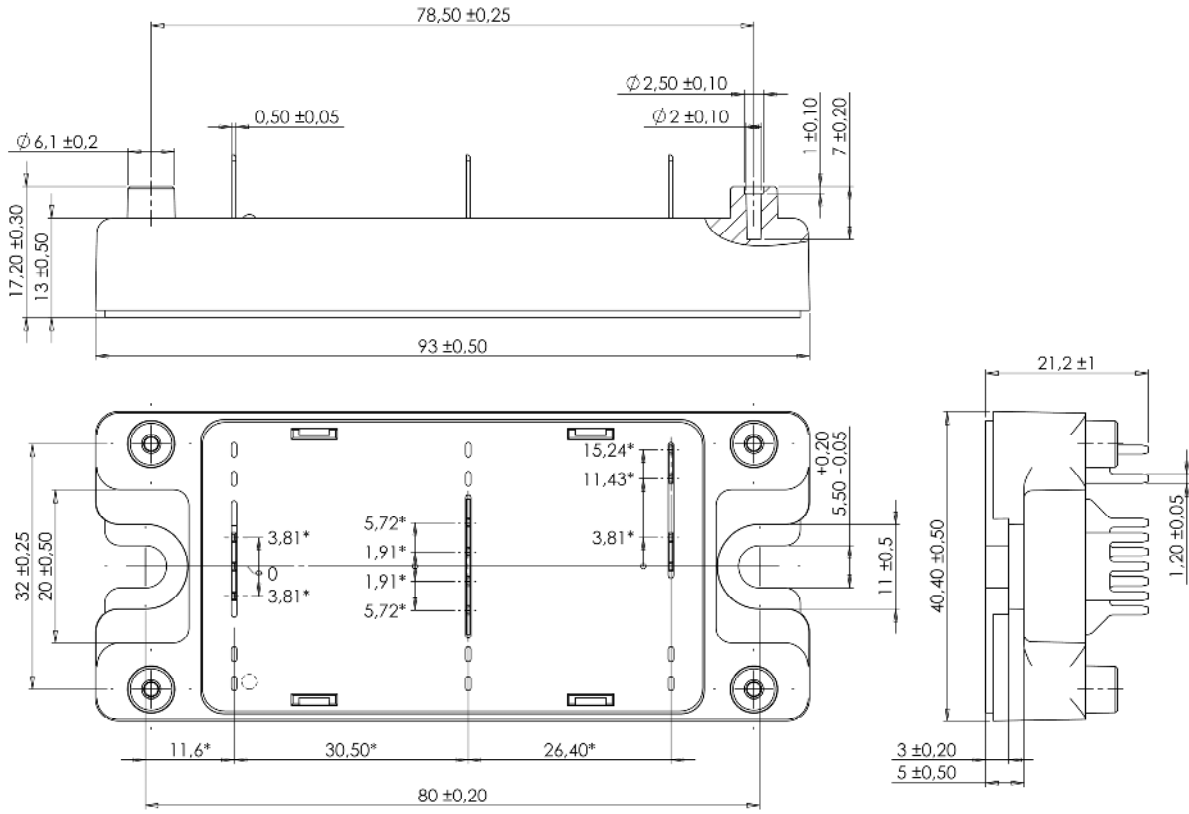
Thermal and package characteristics

<i>Symbol</i>	<i>Characteristic</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>	
R _{thJC}	Junction to Case Thermal Resistance			0.55	°C/W	
V _{ISOL}	RMS Isolation Voltage, any terminal to case t =1 min, 50/60Hz	4000			V	
T _J	Operating junction temperature range	-40		175	°C	
T _{STG}	Storage Temperature Range	-40		125		
T _C	Operating Case Temperature	-40		100		
Torque	Mounting torque	To Heatsink	M5	2.5	4.7	N.m
Wt	Package Weight				160	g

Typical Performance Curve



SP4 Package outline (dimensions in mm)



ALL DIMENSIONS MARKED "*" ARE TOLERANCED AS: $\phi 1$

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