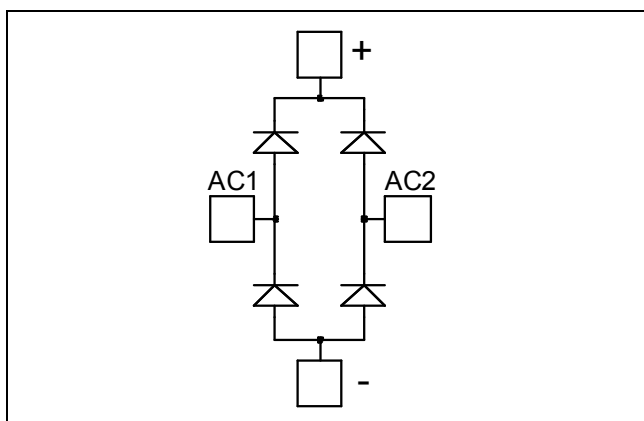


## Diode Full Bridge Power Module

**$V_{RRM} = 1700V$**   
 **$I_C = 100A @ T_c = 55^\circ C$**

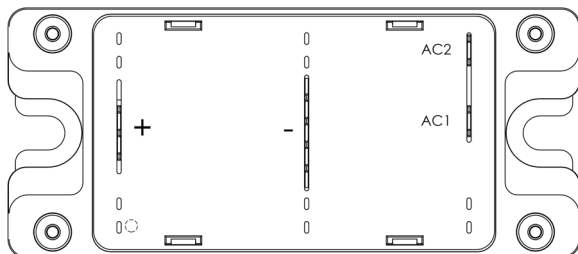


### Application

- 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 <sub>R</sub>	Maximum DC reverse Voltage			1700	V
V <sub>RRM</sub>	Maximum Peak Repetitive Reverse Voltage				
I <sub>F(AV)</sub>	Maximum Average Forward Current	Duty cycle = 50%	T <sub>c</sub> = 25°C	120	A
			T <sub>c</sub> = 55°C	100	
I <sub>F(RMS)</sub>	RMS Forward Current		125		
I <sub>FSM</sub>	Non-Repetitive Forward Surge Current		T <sub>j</sub> = 25°C	300	



**CAUTION:** These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on [www.microsemi.com](http://www.microsemi.com)

**Electrical Characteristics**

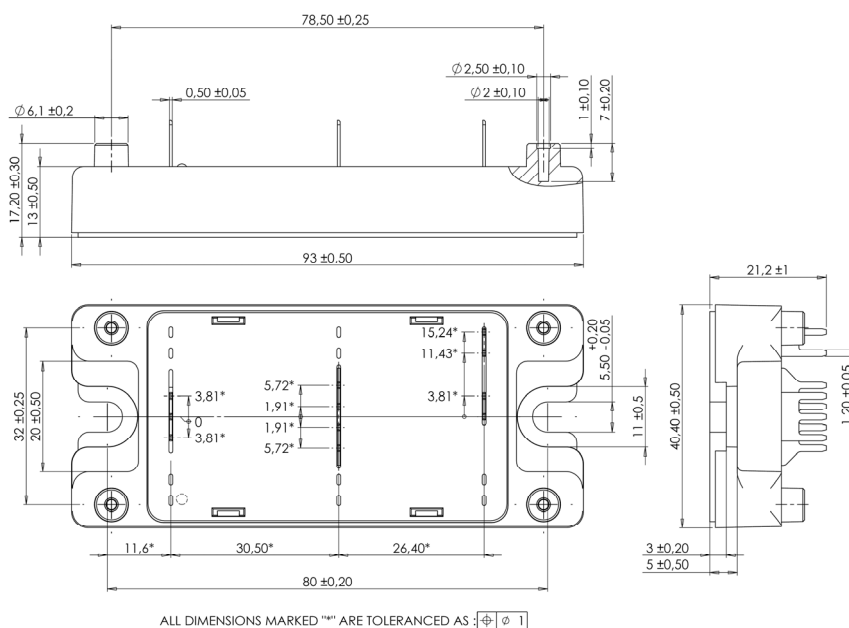
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 100A	T <sub>j</sub> = 25°C	2.2	2.5	V
			T <sub>j</sub> = 125°C	2.1		
I <sub>RM</sub>	Maximum Reverse Leakage Current	V <sub>R</sub> = 1700V	T <sub>j</sub> = 25°C		250	μA
			T <sub>j</sub> = 125°C		500	

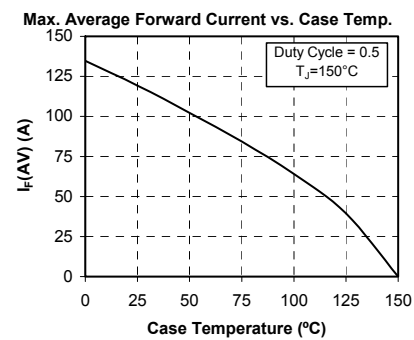
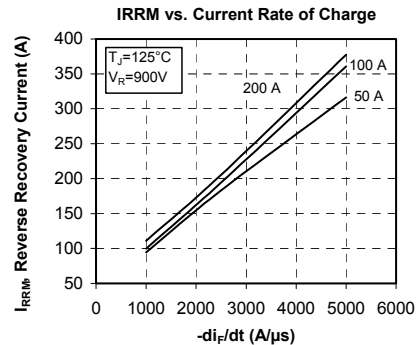
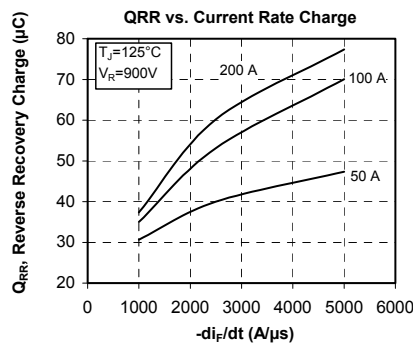
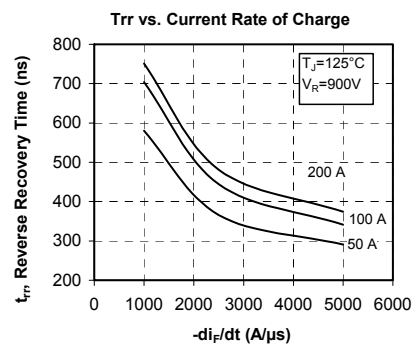
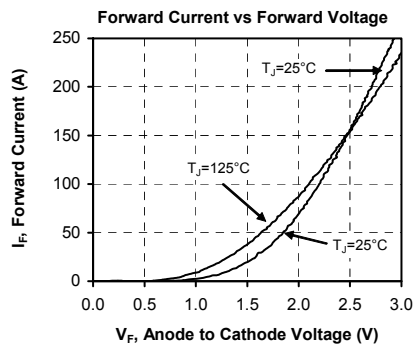
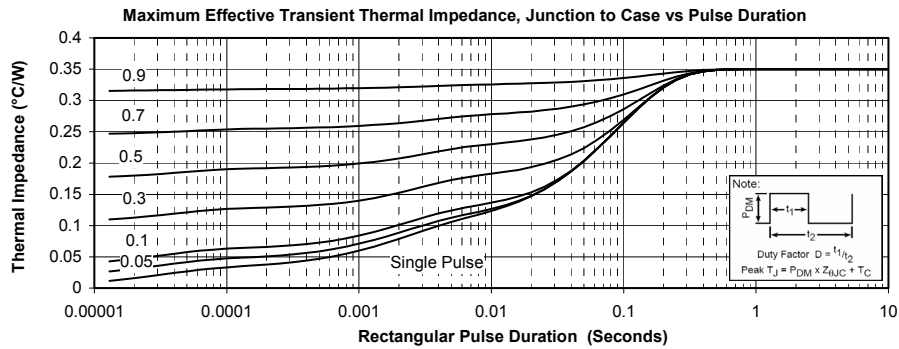
**Dynamic Characteristics**

<i>Symbol</i>	<i>Characteristic</i>	<i>Test Conditions</i>		<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> = 100A V <sub>R</sub> = 900V di/dt = 1000A/μs	T <sub>j</sub> = 25°C		572		ns
			T <sub>j</sub> = 125°C		704		
Q <sub>rr</sub>	Reverse Recovery Charge		T <sub>j</sub> = 25°C		20		μC
			T <sub>j</sub> = 125°C		35		
I <sub>RRM</sub>	Reverse Recovery Current		T <sub>j</sub> = 25°C		70		A
			T <sub>j</sub> = 125°C		100		

**Thermal and package characteristics**

Symbol	Characteristic	Min	Typ	Max	Unit
R <sub>thJC</sub>	Junction to Case Thermal Resistance			0.35	°C/W
V <sub>ISOL</sub>	RMS Isolation Voltage, any terminal to case t = 1 min, 50/60Hz	4000			V
T <sub>J</sub>	Operating junction temperature range	-40		150	°C
T <sub>STG</sub>	Storage Temperature Range	-40		125	
T <sub>C</sub>	Operating Case Temperature	-40		100	
Torque	Mounting torque	To Heatsink	M5	4.7	N.m
Wt	Package Weight			160	g

**SP4 Package outline (dimensions in mm)**

**Typical Performance Curve**



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