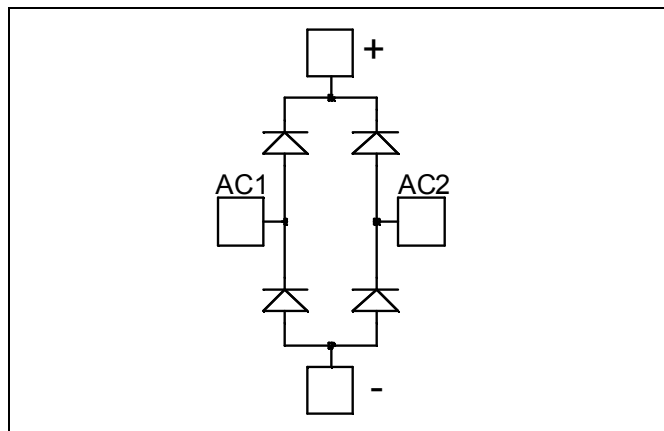


Diode Full Bridge Power Module

$V_{RRM} = 1200V$
 $I_C = 100A @ T_c = 60^\circ C$

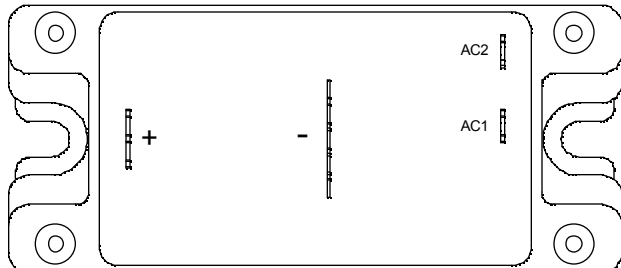


Application

- 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

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	120	A	
			T _C = 60°C	100		
I _{F(RMS)}	RMS Forward Current	Duty cycle = 50%	T _C = 45°C	135		
I _{FSM}	Non-Repetitive Forward Surge Current		8.3ms	T _C = 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

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	$I_F = 100\text{A}$			2.4	3	V
		$I_F = 150\text{A}$			2.7		
		$I_F = 100\text{A}$	$T_j = 125^\circ\text{C}$		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	$V_R = 1200\text{V}$			110		pF

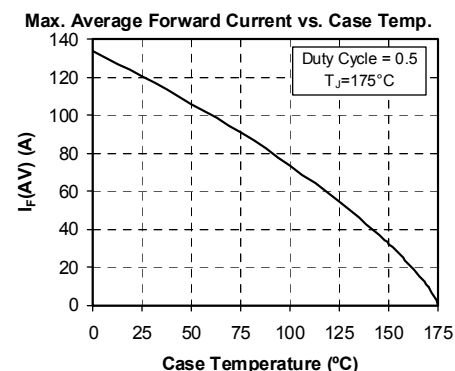
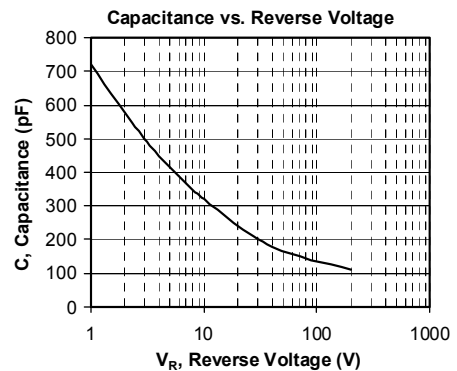
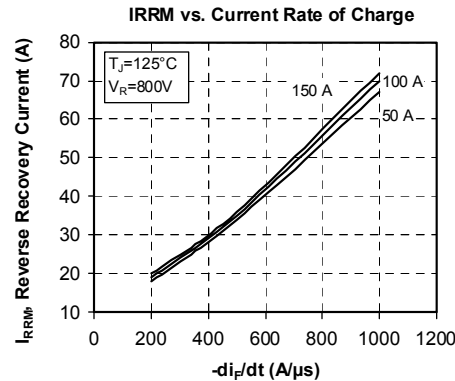
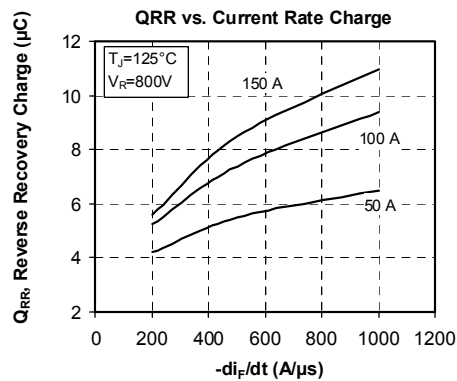
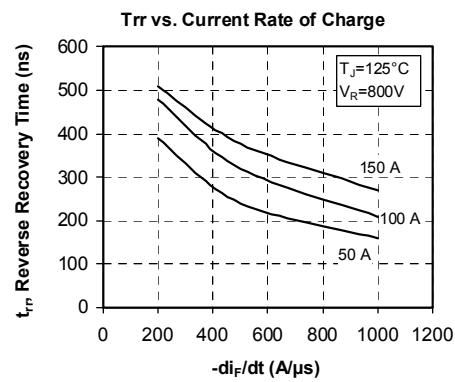
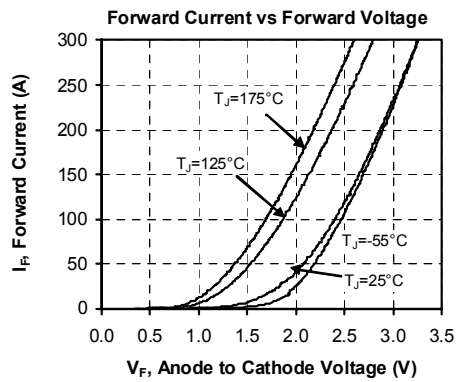
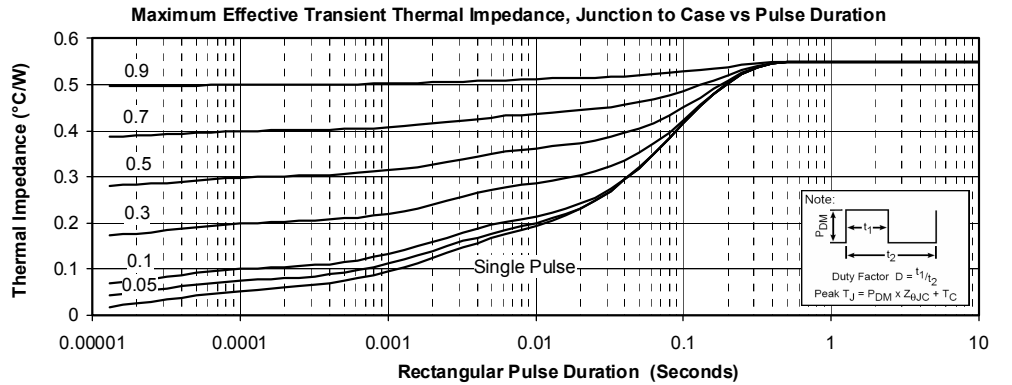
Dynamic Characteristics

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit	
t _{rr}	Reverse Recovery Time	I _F =1 A, V _R =30 V di/dt = 100 A/μs	T _j = 25°C		45		ns	
t _{rr}	Reverse Recovery Time	I _F = 100 A V _R = 800 V di/dt = 200 A/μs	T _j = 25°C		385		ns	
			T _j = 125°C		480			
Q _{rr}	Reverse Recovery Charge		T _j = 25°C		1055		nC	
			T _j = 125°C		5240			
I _{RRM}	Reverse Recovery Current		T _j = 25°C		6		A	
			T _j = 125°C		19			
t _{rr}	Reverse Recovery Time	I _F = 100 A V _R = 800 V di/dt=1000 A/μs	T _j = 125°C		210		ns	
Q _{rr}	Reverse Recovery Charge				9.4		μC	
I _{RRM}	Reverse Recovery Current				70		A	

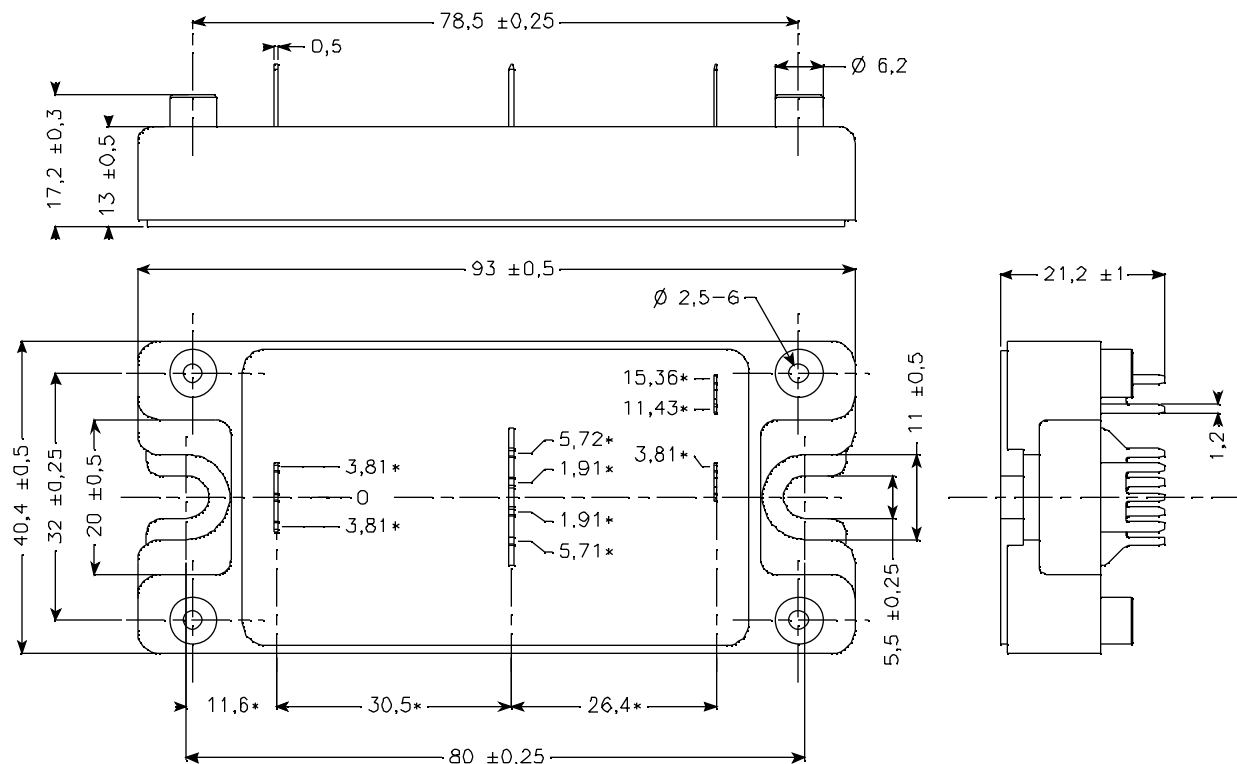
Thermal and package characteristics

Symbol	Characteristic	Min		Typ	Max	Unit
R_{thJC}	Junction to Case Thermal Resistance				0.55	$^\circ\text{C}/\text{W}$
V_{ISOL}	RMS Isolation Voltage, any terminal to case $t = 1\text{ min}$, $I_{isol} < 1\text{mA}$, 50/60Hz	2500				V
T_j	Operating junction temperature range	-40			175	$^\circ\text{C}$
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 TOLERENCED AS : $\boxed{\begin{array}{|c|} \hline \phi \\ \hline \end{array}} \boxed{\begin{array}{|c|} \hline \phi 1 \\ \hline \end{array}}$

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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 and foreign patents. U.S. and Foreign patents pending. All Rights Reserved.