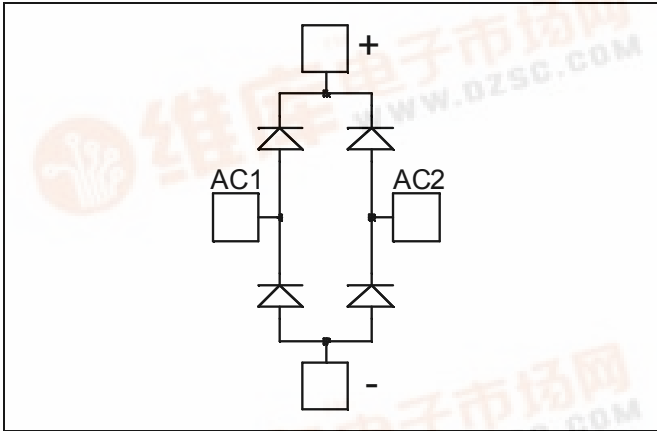


Diode Full Bridge Power Module

$V_{RRM} = 1200V$
 $I_C = 200A @ T_c = 60^\circ C$

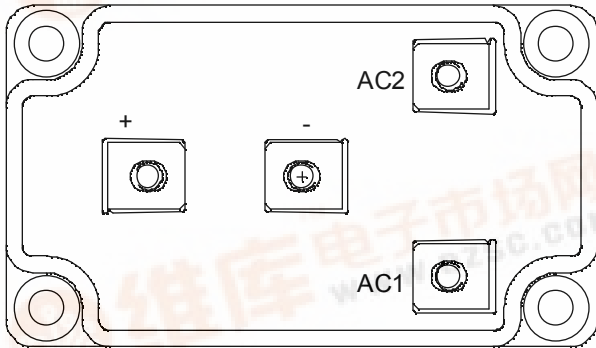


Application

- 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
 - M5 power connectors
- High level of integration



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	1200	V	
V_{RRM}	Maximum Peak Repetitive Reverse Voltage			
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	A	
		$T_C = 25^\circ C$		235
		$T_C = 60^\circ C$		200
$I_{F(RMS)}$	RMS Forward Current	Duty cycle = 50%		$T_C = 45^\circ C$
I_{FSM}	Non-Repetitive Forward Surge Current	8.3ms	$T_C = 45^\circ C$	1500

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

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	$I_F = 200\text{A}$			2.4	3.0	V
		$I_F = 300\text{A}$			2.7		
		$I_F = 200\text{A}$	$T_j = 125^\circ\text{C}$		1.8		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 1200\text{V}$	$T_j = 25^\circ\text{C}$			150	μA
			$T_j = 125^\circ\text{C}$			600	
C_T	Junction Capacitance	$V_R = 1200\text{V}$			220		pF

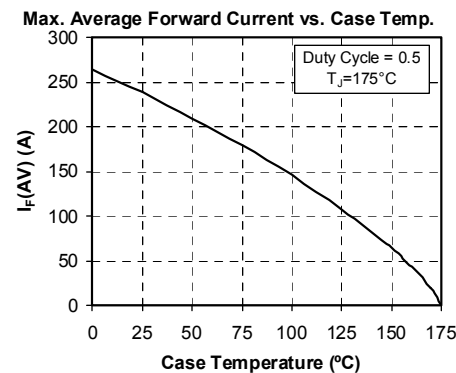
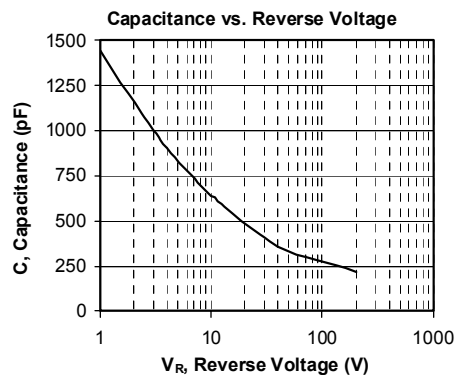
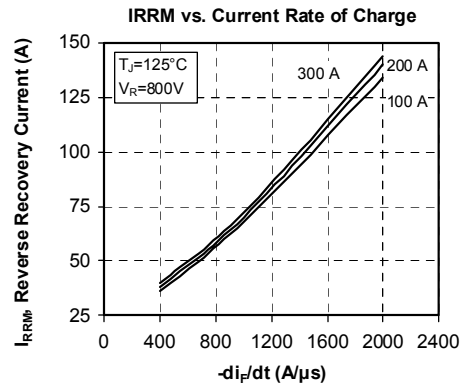
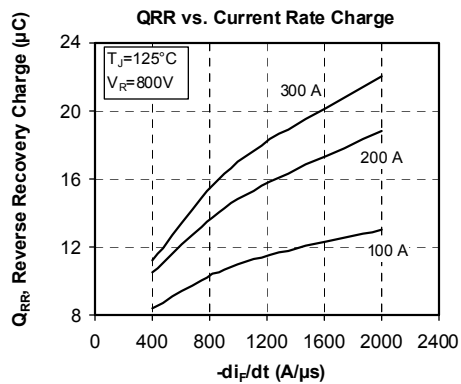
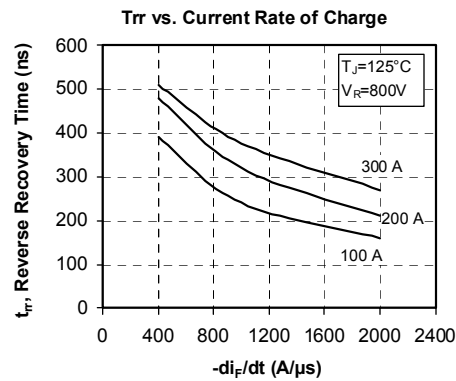
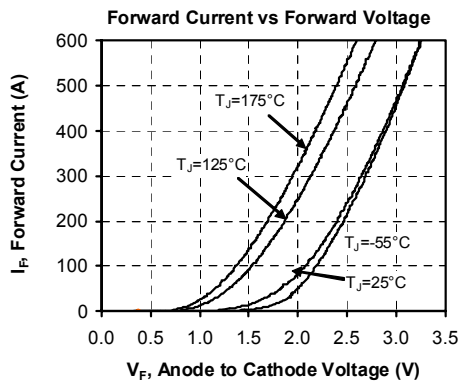
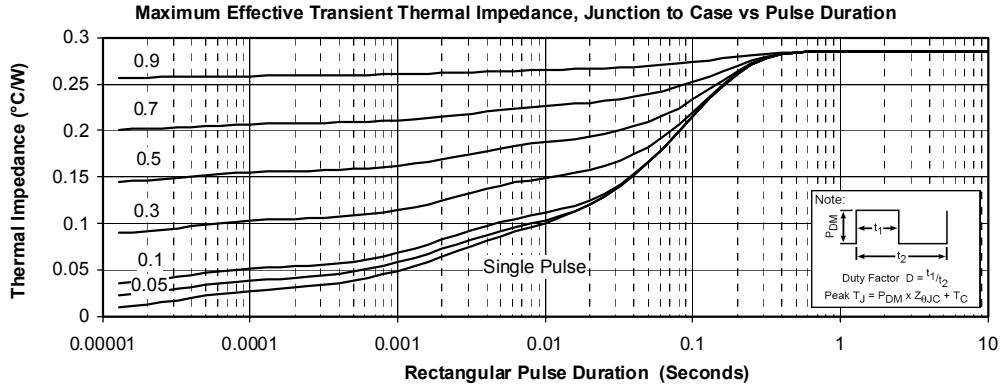
Dynamic Characteristics

<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	$I_F = 1\text{A}, V_R = 30\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		45		ns	
t_{rr}	Reverse Recovery Time		$T_j = 25^\circ\text{C}$		385		ns	
Q_{rr}	Reverse Recovery Charge	$I_F = 200\text{A}$ $V_R = 800\text{V}$ $di/dt = 400\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		480		μC	
			$T_j = 25^\circ\text{C}$		2.1			
I_{RRM}	Reverse Recovery Current		$T_j = 125^\circ\text{C}$		10.5		A	
			$T_j = 25^\circ\text{C}$		12			
t_{rr}	Reverse Recovery Time		$I_F = 200\text{A}$ $V_R = 800\text{V}$ $di/dt = 2000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		210		ns
Q_{rr}	Reverse Recovery Charge					19		μC
I_{RRM}	Reverse Recovery Current				140		A	

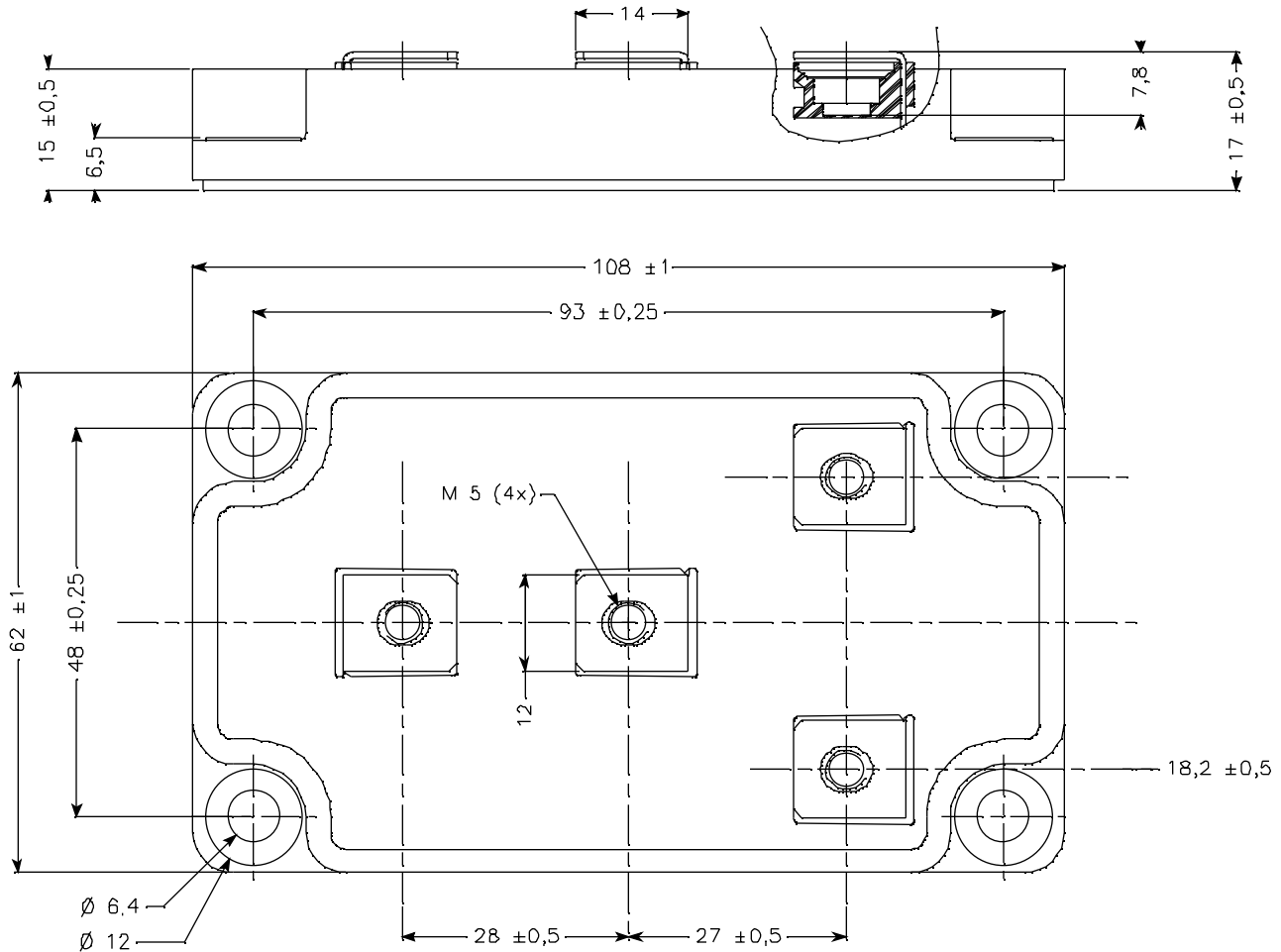
Thermal and package characteristics

<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			0.285	$^\circ\text{C}/\text{W}$	
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	M6	3	5	N.m
		For terminals	M5	2	3.5	
Wt	Package Weight			280	g	

Typical Performance Curve



SP6 Package outline (dimensions in mm)



Microsemi reserves the right to change, without notice, the specifications and information contained herein

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.