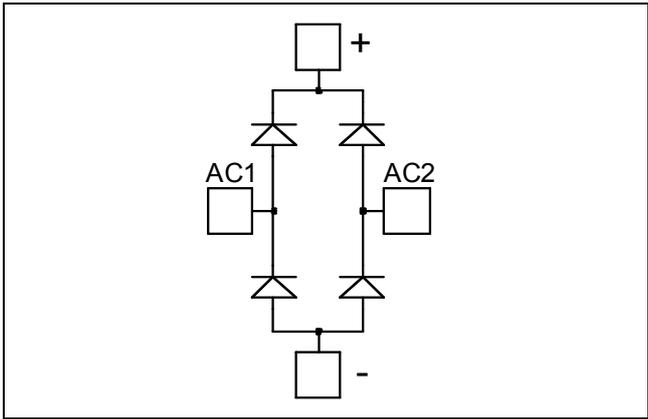


## Diode Full Bridge Power Module

**$V_{RRM} = 200V$**   
 **$I_C = 100A @ T_c = 80^\circ C$**



### Application

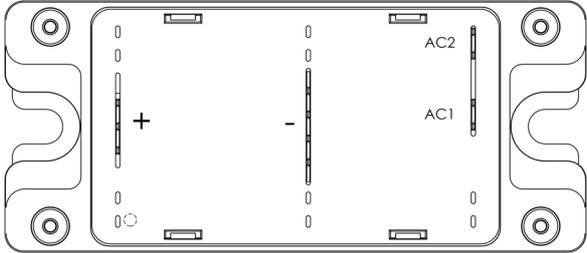
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers

### 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	200	V
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage		
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	A
		$T_C = 25^\circ C$	
		$T_C = 80^\circ C$	100
$I_{F(RMS)}$	RMS Forward Current	Duty cycle = 50%	145
$I_{FSM}$	Non-Repetitive Forward Surge Current	8.3ms	500
		$T_C = 45^\circ C$	

**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)

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	$I_F = 100\text{A}$		1.0	1.1	V
		$I_F = 200\text{A}$		1.4		
		$I_F = 100\text{A}$	$T_j = 125^\circ\text{C}$	0.9		
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 200\text{V}$	$T_j = 25^\circ\text{C}$		250	$\mu\text{A}$
			$T_j = 125^\circ\text{C}$		500	
$C_T$	Junction Capacitance	$V_R = 200\text{V}$		400		pF

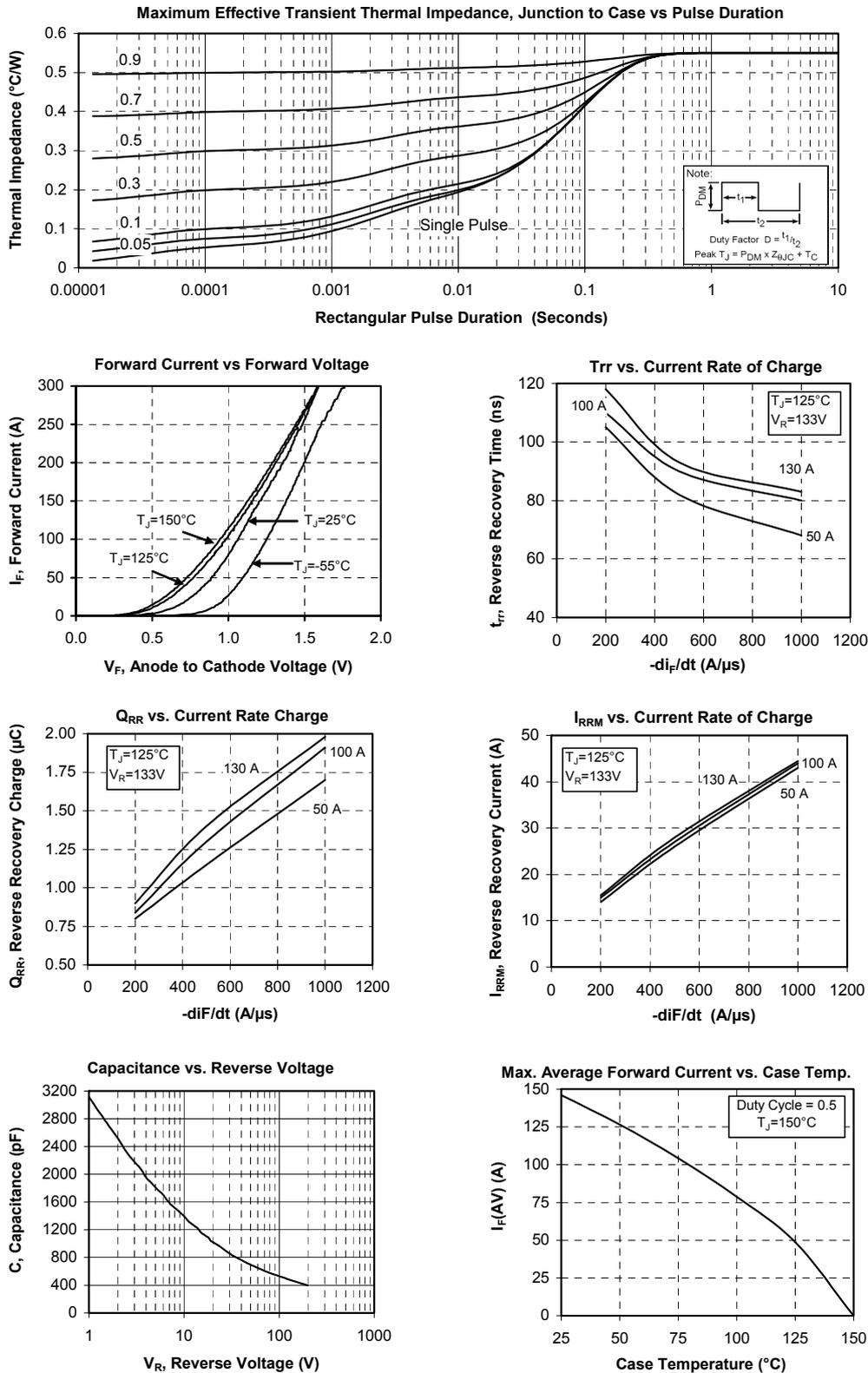
**Dynamic Characteristics**

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
$t_{rr}$	Reverse Recovery Time	$I_F = 1\text{A}, V_R = 30\text{V}$ $di/dt = 100\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		39	ns
$t_{rr}$	Reverse Recovery Time		$T_j = 25^\circ\text{C}$		60	ns
			$T_j = 125^\circ\text{C}$		110	
$Q_{rr}$	Reverse Recovery Charge	$I_F = 100\text{A}$ $V_R = 133\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		200	nC
			$T_j = 125^\circ\text{C}$		840	
$I_{RRM}$	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		6	A
			$T_j = 125^\circ\text{C}$		15	
$t_{rr}$	Reverse Recovery Time	$I_F = 100\text{A}$ $V_R = 133\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		80	ns
$Q_{rr}$	Reverse Recovery Charge				1.91	$\mu\text{C}$
$I_{RRM}$	Reverse Recovery Current				44	A

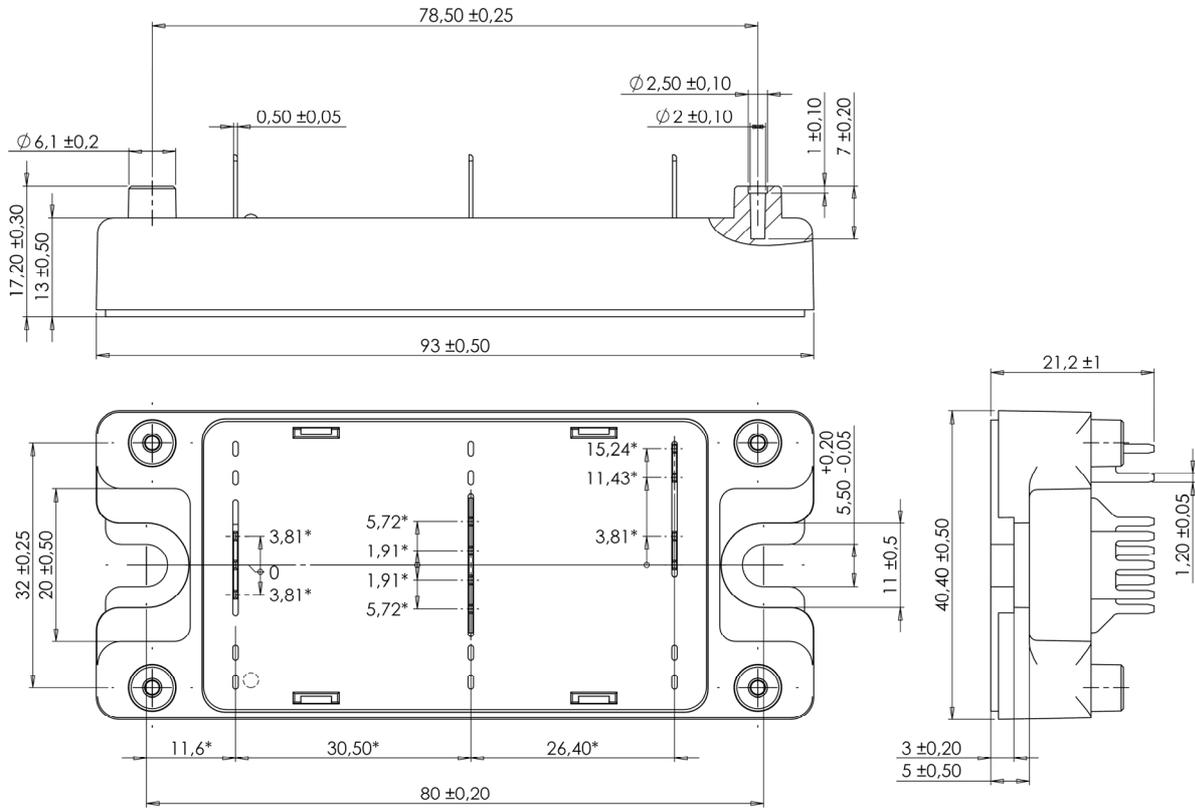
**Thermal and package characteristics**

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 $t = 1\text{ min}, 50/60\text{Hz}$	4000			V	
$T_j$	Operating junction temperature range	-40		150	$^\circ\text{C}$	
$T_{STG}$	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 TOLERANCED AS:  $\pm \phi 1$

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