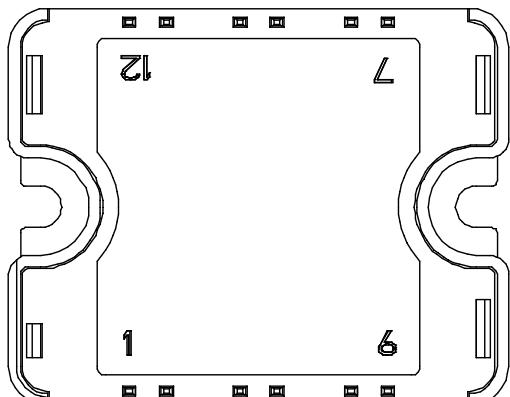
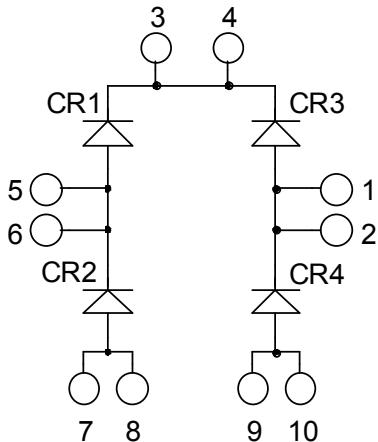


**Fast Diode Full Bridge Power Module**
 **$V_{RRM} = 600V$**   
 **$I_C = 30A @ T_c = 90^\circ C$** 


All multiple inputs and outputs must be shorted together  
 3/4 ; 5/6 ; 7/8 ; 1/2 ; 9/10

**Absolute maximum ratings**

Symbol	Parameter	Max ratings		Unit
$V_R$	Maximum DC reverse Voltage	600		V
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage	$T_c = 25^\circ C$	42	A
$I_{F(AV)}$	Maximum Average Forward Current		$T_c = 90^\circ C$	
$I_{FSM}$	Non-Repetitive Forward Surge Current	8.3ms	$T_j = 45^\circ C$	250

 **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	$I_F = 30\text{A}$		1.8	2.2		V
		$I_F = 60\text{A}$		2.2			
		$I_F = 30\text{A}$	$T_j = 125^\circ\text{C}$	1.5			
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$			250	$\mu\text{A}$
			$T_j = 125^\circ\text{C}$			500	
$C_T$	Junction Capacitance	$V_R = 200\text{V}$			36		pF

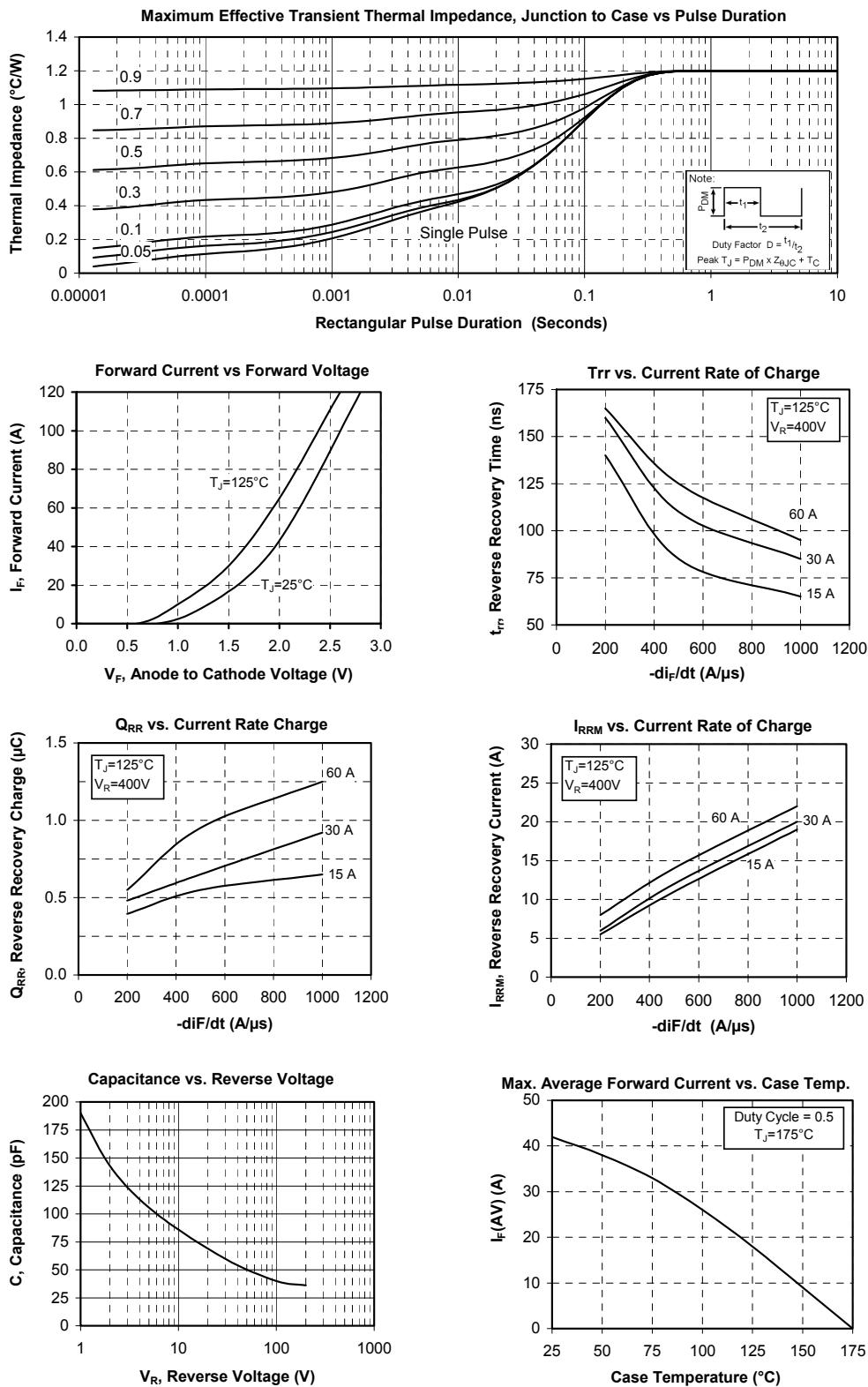
### Dynamic Characteristics

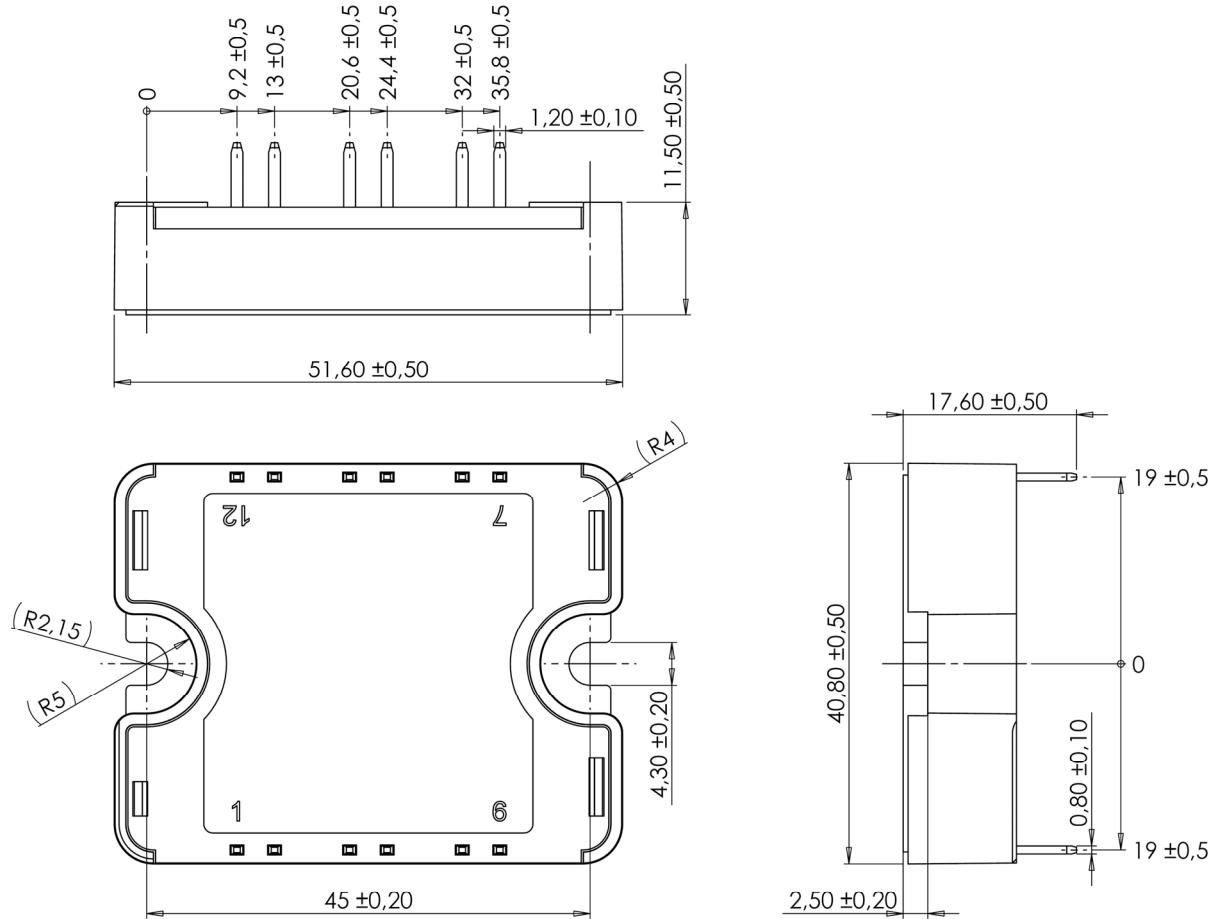
Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
$t_{rr}$	Reverse Recovery Time	$I_F = 30\text{A}$ $V_R = 400\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		25		ns
			$T_j = 125^\circ\text{C}$		160		
$Q_{rr}$	Reverse Recovery Charge	$I_F = 30\text{A}$ $V_R = 400\text{V}$ $di/dt = 200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		35		nC
			$T_j = 125^\circ\text{C}$		480		
$I_{RRM}$	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		3		A
			$T_j = 125^\circ\text{C}$		6		
$t_{rr}$	Reverse Recovery Time	$I_F = 30\text{A}$ $V_R = 400\text{V}$ $di/dt=1000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$		85		ns
$Q_{rr}$	Reverse Recovery Charge				920		
$I_{RRM}$	Reverse Recovery Current				20		A

### Thermal and package characteristics

Symbol	Characteristic		Min	Typ	Max	Unit
$R_{thJC}$	Junction to Case Thermal Resistance				1.2	$^\circ\text{C}/\text{W}$
$V_{ISOL}$	RMS Isolation Voltage, any terminal to case t = 1 min, 50/60Hz		4000			V
$T_j$	Operating junction temperature range		-40		175	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range		-40		125	
$T_c$	Operating Case Temperature		-40		100	
Torque	Mounting torque	To heatsink	M4	2	3	N.m
Wt	Package Weight				80	g

## Typical Performance Curve



**SP1 Package outline** (dimensions in mm)


See application note 1904 - Mounting Instructions for SP1 Power Modules on [www.microsemi.com](http://www.microsemi.com)

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