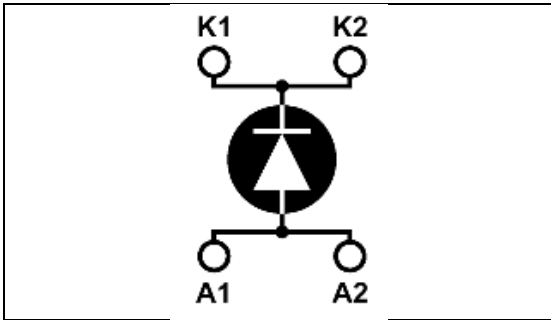


## Single diode Power Module

$V_{RRM} = 200V$   
 $I_F = 500A @ T_c = 80^\circ C$



### Application

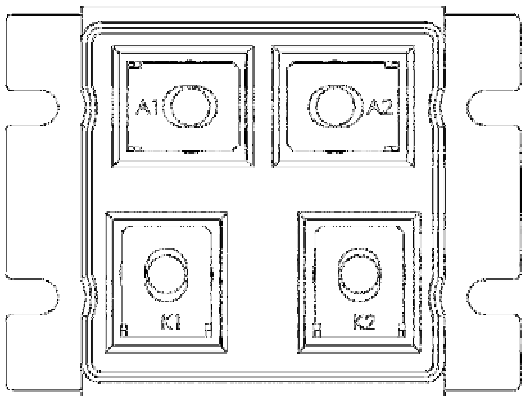
- Anti-Parallel diode
  - Switchmode Power Supply
  - Inverters
- Snubber diode
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers
- Electric vehicles

### Features

- Ultra fast recovery times
- Soft recovery characteristics
- Very low stray inductance
- High blocking voltage
- High current
- Low leakage current

### Benefits

- Low losses
- Low noise switching
- 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	
$V_R$	Maximum DC reverse Voltage	200	V	
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage			
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_c = 25^\circ C$	A
			$T_c = 80^\circ C$	
$I_{F(RMS)}$	RMS Forward Current	1000		
$I_{FSM}$	Non-Repetitive Forward Surge Current	$T_j = 45^\circ C ; 8.3ms$	5000	

**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**

<i>Symbol</i>	<i>Characteristic</i>	<i>Test Conditions</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 500A		1	1.1	V
		I <sub>F</sub> = 1000A		1.4		
		I <sub>F</sub> = 500A	T <sub>j</sub> = 125°C		0.9	
I <sub>RM</sub>	Maximum Reverse Leakage Current	V <sub>R</sub> = 200V			2.5	mA
C <sub>T</sub>	Junction Capacitance	V <sub>R</sub> = 200V		2		nF

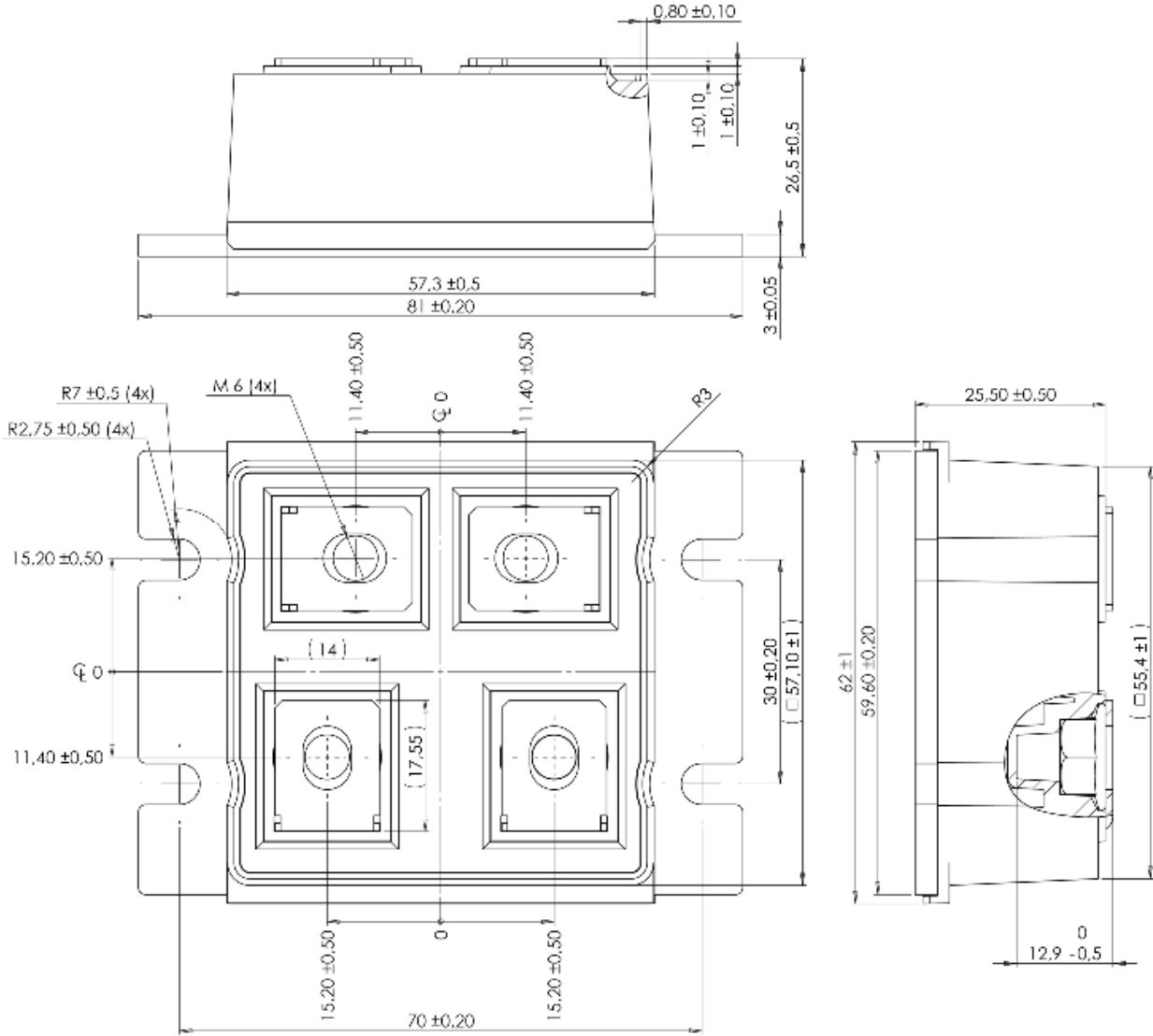
**Dynamic Characteristics**

<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> = 500A V <sub>R</sub> = 133V di/dt=1000A/μs	T <sub>j</sub> = 25°C		60		ns
			T <sub>j</sub> = 125°C		110		
Q <sub>RR</sub>	Reverse Recovery Charge		T <sub>j</sub> = 25°C		1		μC
			T <sub>j</sub> = 125°C		4.2		
I <sub>RR</sub>	Reverse Recovery Current		T <sub>j</sub> = 25°C		30		A
			T <sub>j</sub> = 125°C		75		
t <sub>RR</sub>	Reverse Recovery Time	I <sub>F</sub> = 500A V <sub>R</sub> = 133V di/dt=5000A/μs	T <sub>j</sub> = 125°C		80		ns
Q <sub>RR</sub>	Reverse Recovery Charge				9.9		μC
I <sub>RR</sub>	Reverse Recovery Current				220		A
R <sub>thJC</sub>	Junction to Case Thermal Resistance				0.11	°C/W	

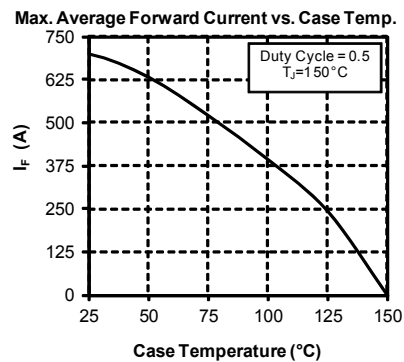
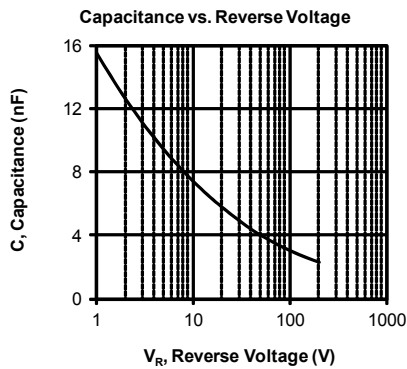
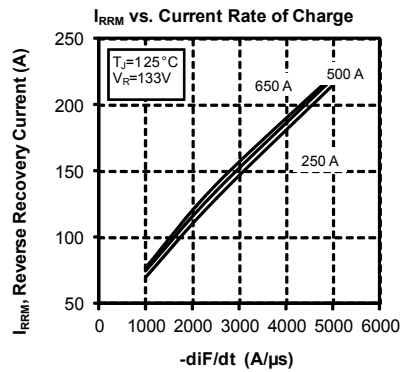
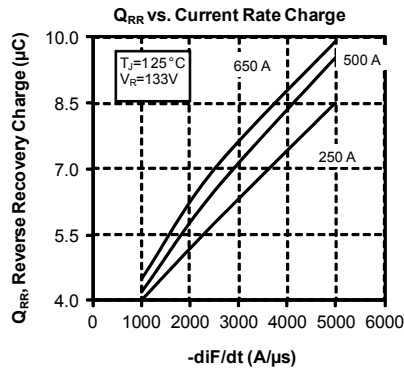
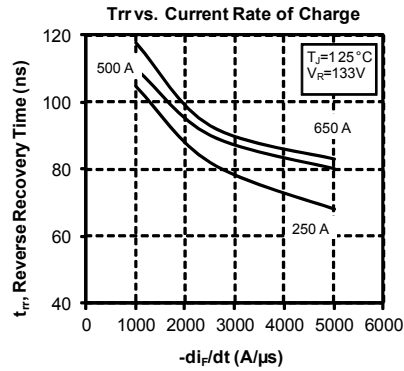
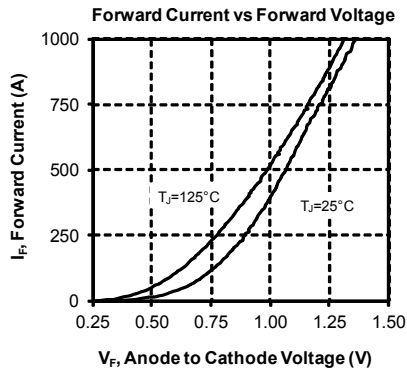
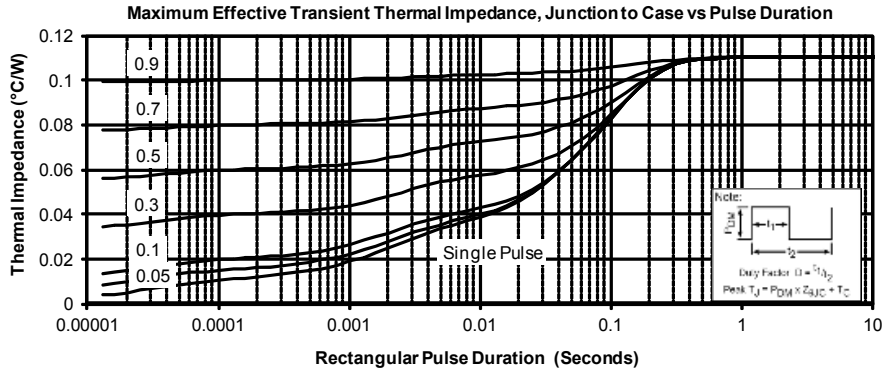
**Thermal and package characteristics**

<i>Symbol</i>	<i>Characteristic</i>	<i>Min</i>	<i>Max</i>	<i>Unit</i>		
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>JOP</sub>	Recommended junction temperature under switching conditions	-40	T <sub>Jmax</sub> -25			
T <sub>STG</sub>	Storage Temperature Range	-40	125			
T <sub>C</sub>	Operating Case Temperature	-40	100			
Torque	Mounting torque	To heatsink	M5	2.5	3.5	N.m
		For terminals	M6	3	4	
Wt	Package Weight				250	g

**LP4 Package outline** (dimensions in mm)



## Typical Performance Curve



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