



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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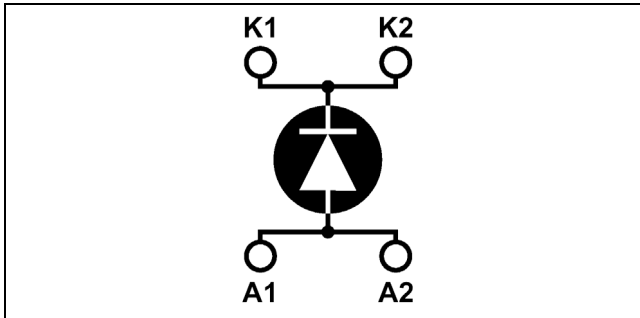
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## Single diode Power Module

$V_{CES} = 600V$   
 $I_C = 450A @ T_c = 80^\circ C$

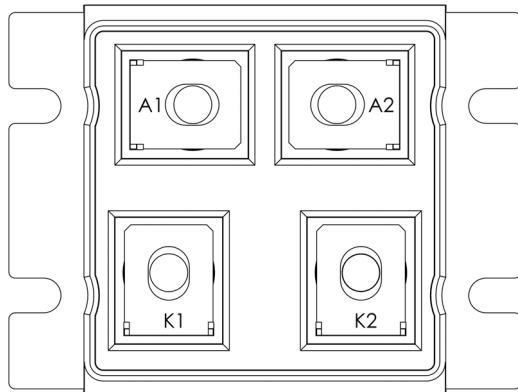


### Application

- 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

### Absolute maximum ratings

Symbol	Parameter	Max ratings	Unit	
$V_R$	Maximum DC reverse Voltage	600	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	850		
$I_{FSM}$	Non-Repetitive Forward Surge Current	$T_j = 25^\circ C$	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)

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	$I_F = 500\text{A}$		1.4	1.8	V
		$I_F = 1000\text{A}$		1.7		
		$I_F = 500\text{A}$	$T_j = 150^\circ\text{C}$			
$I_{RM}$	Maximum Reverse Leakage Current	$V_R = 600\text{V}$	$T_j = 25^\circ\text{C}$		2500	$\mu\text{A}$
			$T_j = 150^\circ\text{C}$			
$C_T$	Junction Capacitance	$V_R = 200\text{V}$		825		pF

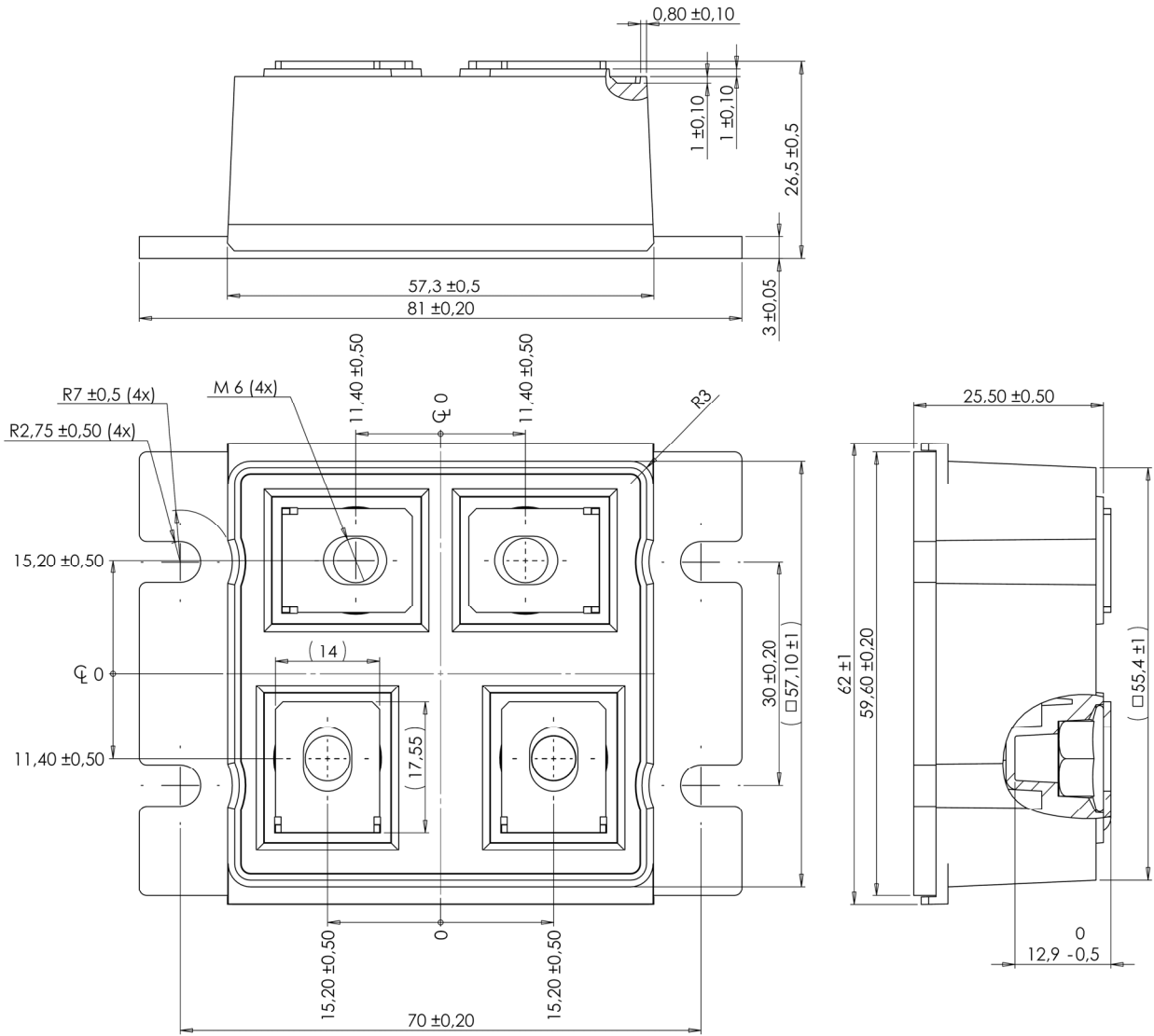
**Dynamic Characteristics**

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
$t_{rr1}$	Reverse Recovery Time	$I_F = 1\text{A}, V_R = 30\text{V}$ $di/dt = 15\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		60	75	ns
$t_{rr2}$			$T_j = 25^\circ\text{C}$		90	115	
$t_{rr3}$			$T_j = 100^\circ\text{C}$		135	255	
$t_{fr1}$	Forward Recovery Time	$I_F = 500\text{A}$ $V_R = 350\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$		135		ns
$t_{fr2}$			$T_j = 100^\circ\text{C}$		135		
$I_{RRM1}$	Reverse Recovery Current		$T_j = 25^\circ\text{C}$		35	50	A
$I_{RRM2}$			$T_j = 100^\circ\text{C}$		55	70	
$Q_{rr1}$	Reverse Recovery Charge		$T_j = 25^\circ\text{C}$		1575	2875	nC
$Q_{rr2}$			$T_j = 100^\circ\text{C}$		3715	8925	
$V_{fr1}$	Forward Recovery Voltage		$T_j = 25^\circ\text{C}$		23		V
$V_{fr2}$			$T_j = 100^\circ\text{C}$		23		
$d_{IM}/dt$	Rate of Fall of Recovery Current		$T_j = 25^\circ\text{C}$		600		$\text{A}/\mu\text{s}$
			$T_j = 100^\circ\text{C}$		400		

**Thermal and package characteristics**

Symbol	Characteristic	Min	Typ	Max	Unit	
$R_{thJC}$	Junction to Case Thermal Resistance			0.08	$^\circ\text{C}/\text{W}$	
$V_{ISOL}$	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	3.5	N.m
		For terminals	M6	3	4	
Wt	Package Weight			250	g	

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





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