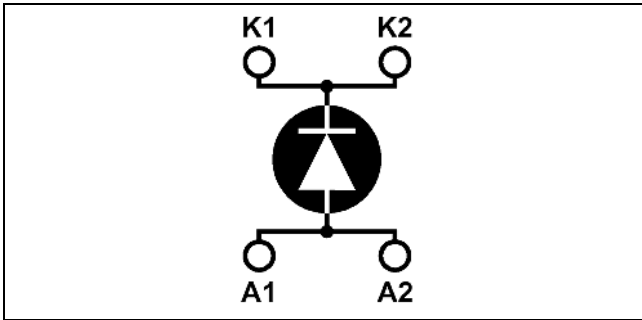
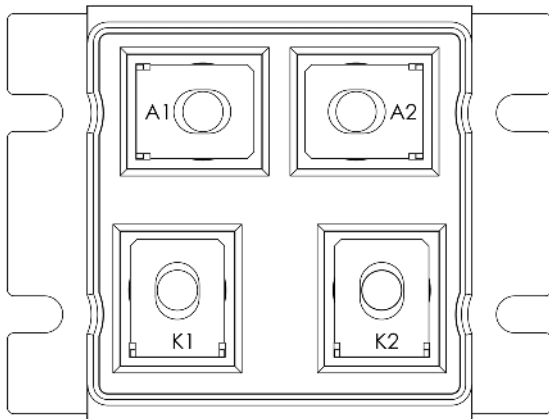


## Single diode Power Module

**$V_{CES} = 1200V$**   
 **$I_C = 400A @ T_c = 80^{\circ}C$**


**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**

<i>Symbol</i>	<i>Parameter</i>	<i>Max ratings</i>	<i>Unit</i>		
$V_R$	Maximum DC reverse Voltage	1200	V		
$V_{RRM}$	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_c = 25^{\circ}C$	450	A
			$T_c = 80^{\circ}C$	400	
$I_{F(RMS)}$	RMS Forward Current	750			
$I_{FSM}$	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 @  $T_j = 25^{\circ}C$  unless otherwise specified**

**Electrical Characteristics**

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 500A				2.5	V
		I <sub>F</sub> = 1000A			2.5		
		I <sub>F</sub> = 500A	T <sub>j</sub> = 150°C			2.0	
I <sub>RM</sub>	Maximum Reverse Leakage Current	V <sub>R</sub> = 1200V	T <sub>j</sub> = 25°C			2500	μA
			T <sub>j</sub> = 125°C			5000	
C <sub>T</sub>	Junction Capacitance	V <sub>R</sub> = 200V			600		pF

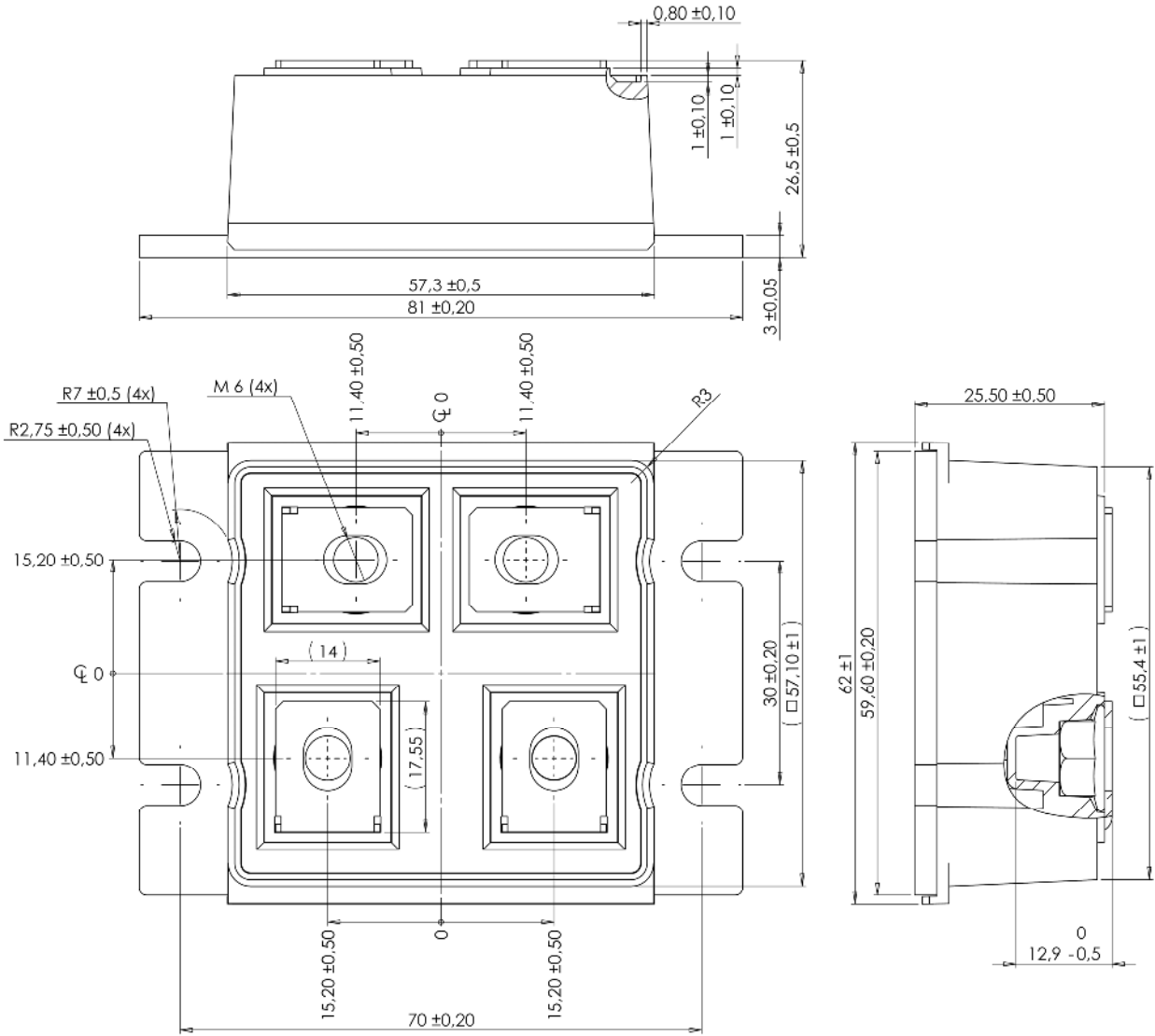
**Dynamic Characteristics**

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit	
t <sub>rr1</sub>	Reverse Recovery Time	I <sub>F</sub> =1A, V <sub>R</sub> =30V di/dt = 15A/μs	T <sub>j</sub> = 25°C		90		ns	
t <sub>rr2</sub>			I <sub>F</sub> = 500A	T <sub>j</sub> = 25°C		110		
t <sub>rr3</sub>			V <sub>R</sub> = 650V di/dt=1000A/μs	T <sub>j</sub> = 100°C		175		
t <sub>fr1</sub>	Forward Recovery Time	I <sub>F</sub> = 500A V <sub>R</sub> = 650V di/dt=1000A/μs	T <sub>j</sub> = 25°C		220		ns	
t <sub>fr2</sub>			T <sub>j</sub> = 100°C		220			
I <sub>RRM1</sub>	Reverse Recovery Current		T <sub>j</sub> = 25°C		70		A	
I <sub>RRM2</sub>			T <sub>j</sub> = 100°C		120			
Q <sub>rr1</sub>	Reverse Recovery Charge		T <sub>j</sub> = 25°C		10		μC	
Q <sub>rr2</sub>			T <sub>j</sub> = 100°C		30			
V <sub>fr1</sub>	Forward Recovery Voltage		T <sub>j</sub> = 25°C		26		V	
V <sub>fr2</sub>			T <sub>j</sub> = 100°C		26			
d <sub>IM/dt</sub>	Rate of Fall of Recovery Current		T <sub>j</sub> = 25°C		1200		A/μs	
			T <sub>j</sub> = 100°C		800			

**Thermal and package characteristics**

Symbol	Characteristic	Min	Typ	Max	Unit	
R <sub>thJC</sub>	Junction to Case Thermal Resistance			0.08	°C/W	
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>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)



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