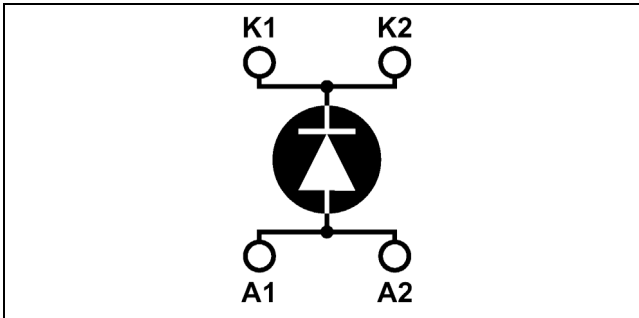


Single diode Power Module

$V_{CES} = 1000V$
 $I_C = 430A @ T_c = 80^\circ C$

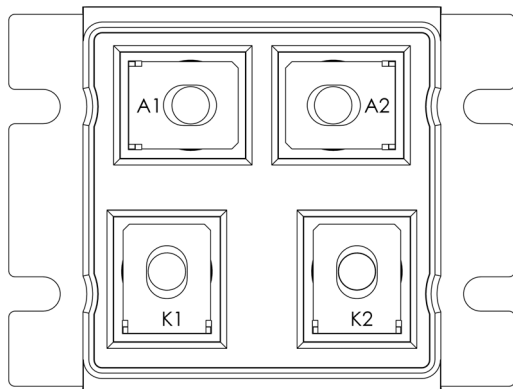


Application

- 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	1000	V		
V_{RRM}	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	$T_c = 25^\circ C$	500	A
			$T_c = 80^\circ C$	430	
$I_{F(RMS)}$	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

All ratings @ $T_j = 25^\circ C$ unless otherwise specified

Electrical Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit
V _F	Diode Forward Voltage	I _F = 500A		2.0	2.3	V
		I _F = 1000A		2.5		
		I _F = 500A	T _j = 150°C			
I _{RM}	Maximum Reverse Leakage Current	V _R = 1000V	T _j = 25°C		2500	μA
			T _j = 150°C		5000	
C _T	Junction Capacitance	V _R = 200V		580		pF

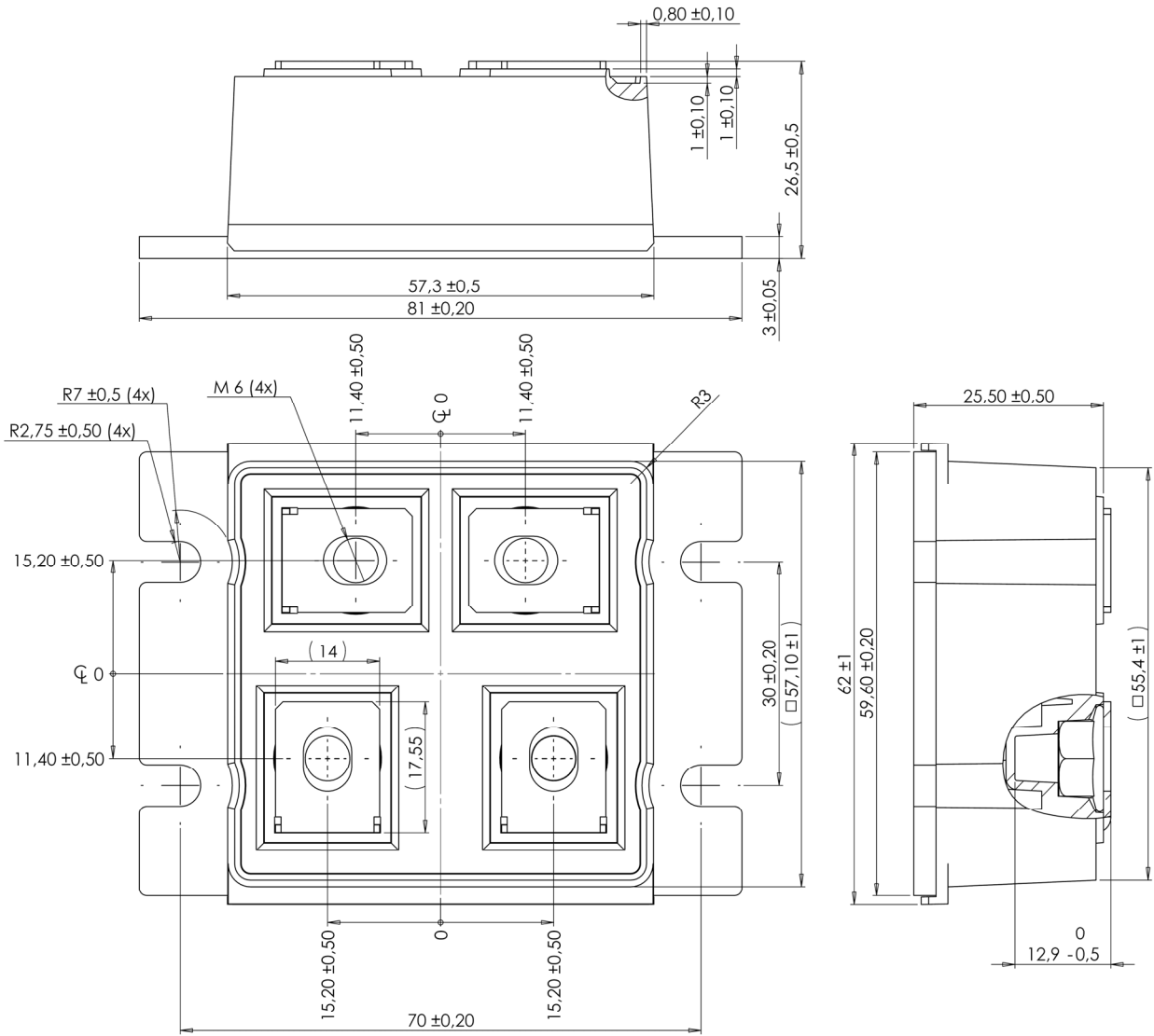
Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit		
t _{rr1}	Reverse Recovery Time	I _F =1A, V _R =30V di/dt = 15A/μs	T _j = 25°C		80	95	ns	
t _{rr2}			I _F = 500A	T _j = 25°C		100		120
t _{rr3}			V _R = 540V di/dt=1000A/μs	T _j = 100°C		200		300
t _{fr1}	Forward Recovery Time	I _F = 500A V _R = 540V di/dt=1000A/μs	T _j = 25°C		135		ns	
t _{fr2}			T _j = 100°C		200			
I _{RRM1}	Reverse Recovery Current		T _j = 25°C		35	50	A	
I _{RRM2}			T _j = 100°C		65	85		
Q _{rr1}	Reverse Recovery Charge		T _j = 25°C		1.75	3	μC	
Q _{rr2}			T _j = 100°C		6.5	12.8		
V _{fr1}	Forward Recovery Voltage		T _j = 25°C		31		V	
V _{fr2}			T _j = 100°C		31			
d _I M/dt	Rate of Fall of Recovery Current		T _j = 25°C		1000		A/μs	
			T _j = 100°C		500			

Thermal and package characteristics

Symbol	Characteristic	Min	Typ	Max	Unit	
R _{thJC}	Junction to Case Thermal Resistance			0.08	°C/W	
V _{ISOL}	RMS Isolation Voltage, any terminal to case	t = 1 min, 50/60Hz	4000		V	
T _J	Operating junction temperature range	-40		150	°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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