

Single diode Power Module

$V_{CES} = 400V$
 $I_C = 500A @ T_c = 80^\circ C$

Application

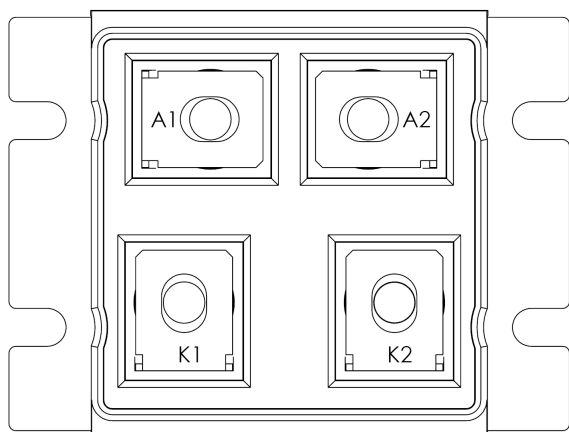
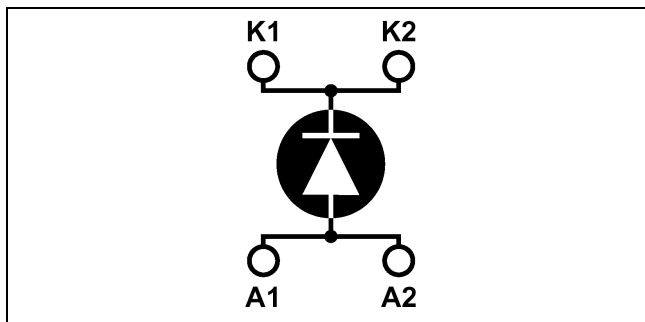
- Anti-Parallel diode
 - Switchmode Power Supply
 - Inverters
- Snubber diode
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers
- Electric vehicles

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

<i>Symbol</i>	<i>Parameter</i>			<i>Max ratings</i>	<i>Unit</i>
V _R	DC reverse Voltage			400	V
V _{RRM}	Peak Repetitive Reverse Voltage				
I _{F(AV)}	Average Forward Current	Duty cycle = 50%	T _c = 25°C	500	A
			T _c = 80°C	500	
I _{F(RMS)}	RMS Forward Current			850	
I _{FSM}	Non-Repetitive Forward Surge Current		T _j = 25°C	5000	

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed

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_F	Diode Forward Voltage	$I_F = 500A$			1.3	1.5	V
		$I_F = 1000A$			1.6		
		$I_F = 500A$	$T_j = 125^{\circ}C$		1.2		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 400V$	$T_j = 25^{\circ}C$			2000	μA
			$T_j = 125^{\circ}C$			5000	
C_T	Junction Capacitance	$V_R = 200V$			1300		pF

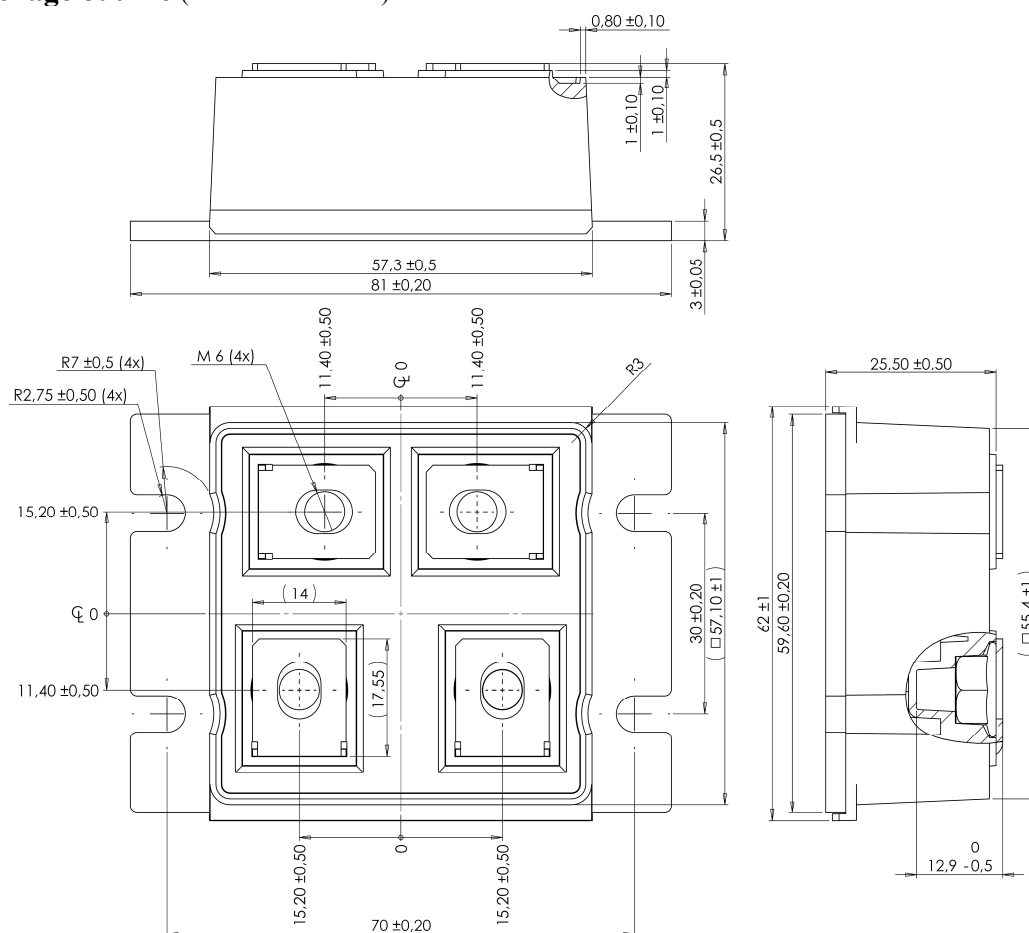
Dynamic Characteristics

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
t _{rr}	Reverse Recovery Time	I _F = 500A V _R = 268V di/dt=1000A/μs	T _j = 25°C		50		ns
			T _j = 125°C		150		
Q _{rr}	Reverse Recovery Charge		T _j = 25°C		750		nC
			T _j = 125°C		5250		
I _{rr}	Reverse Recovery Current		T _j = 25°C		30		A
			T _j = 125°C		65		
t _{rr}	Reverse Recovery Time	I _F = 500A V _R = 268V di/dt=4000A/μs	T _j = 125°C		90		ns
Q _{rr}	Reverse Recovery Charge				10.5		μC
I _{rr}	Reverse Recovery Current				195		A

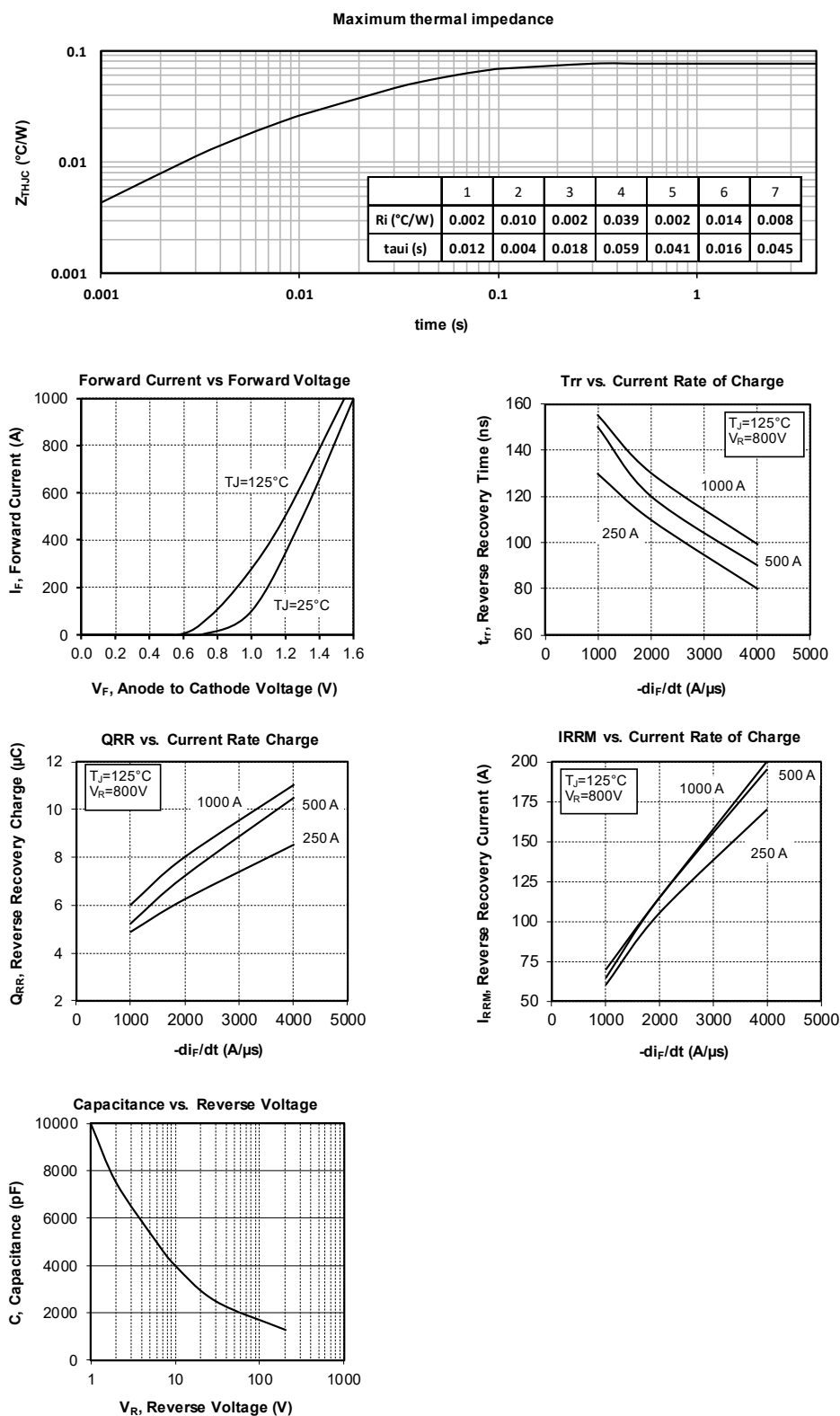
Thermal and package characteristics

Symbol	Characteristic			Min	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 _{JOP}	Recommended junction temperature under switching conditions			-40	T _{Jmax} -25	
T _{STG}	Storage Temperature Range			-40	125	
T _C	Operating Case Temperature			-40	125	
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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