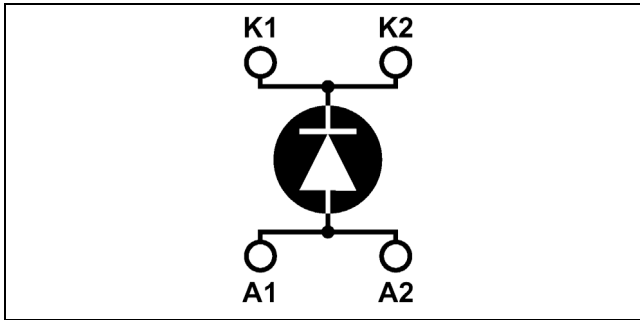


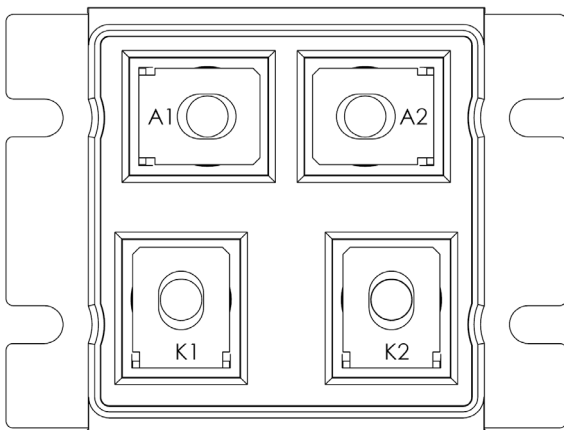
Single diode Power Module

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



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

Absolute maximum ratings

Symbol	Parameter	Max ratings	Unit		
V_R	Maximum DC reverse Voltage	400	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
			$T_c = 80^\circ C$		
$I_{F(RMS)}$	RMS Forward Current			850	
I_{FSM}	Non-Repetitive Forward Surge Current	$T_j = 25^\circ C$			

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com

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

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

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_{rr}	Reverse Recovery Time			$T_j = 25^\circ\text{C}$		50	ns
				$T_j = 125^\circ\text{C}$		150	
Q_{rr}	Reverse Recovery Charge	$I_F = 500\text{A}$ $V_R = 268\text{V}$ $di/dt = 1000\text{A}/\mu\text{s}$		$T_j = 25^\circ\text{C}$		750	nC
				$T_j = 125^\circ\text{C}$		5250	
I_{rr}	Reverse Recovery Current			$T_j = 25^\circ\text{C}$		30	A
				$T_j = 125^\circ\text{C}$		65	
t_{rr}	Reverse Recovery Time	$I_F = 500\text{A}$ $V_R = 268\text{V}$ $di/dt = 4000\text{A}/\mu\text{s}$	$T_j = 125^\circ\text{C}$			90	ns
Q_{rr}	Reverse Recovery Charge					10.5	μC
I_{rr}	Reverse Recovery Current					195	A

Thermal and package characteristics

<i>Symbol</i>	<i>Characteristic</i>			<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
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

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