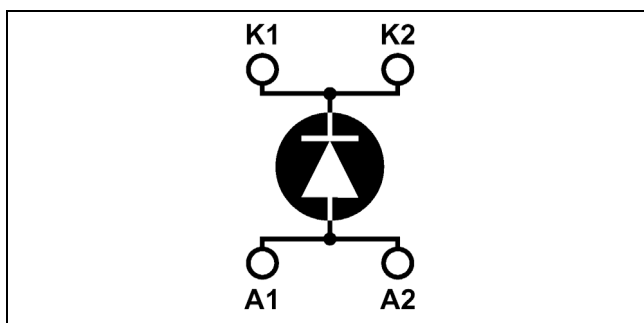


Single diode Power Module

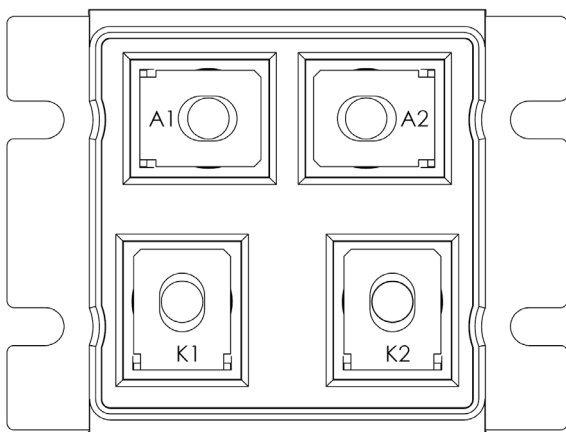
$$V_{CES} = 400V$$

$$I_C = 500A @ T_c = 80^{\circ}C$$



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°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. See application note APT0502 on 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	$I_F = 500\text{A}$			1.3	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

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		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 $t = 1\text{ min}$, 50/60Hz	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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