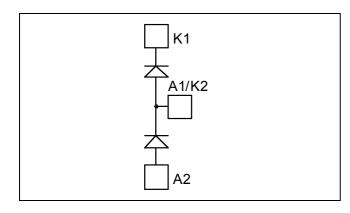


Diode Phase leg Power Module

$$V_{RRM} = 200V$$

 $I_F = 400A$ @ $Tc = 80$ °C



A1/K2

Application

- Anti-Parallel diode
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers

Features

- Ultra fast recovery times
- Soft recovery characteristics
- High blocking voltage
- High current
- Low leakage current
- Very low stray inductance
 - Symmetrical design
 - M5 power connectors
- High level of integration

Benefits

- Outstanding performance at high frequency operation
- 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			200	V	
V_{RRM}	Maximum Peak Repetitive Revers	e Voltage			200	V
$I_{F(AV)}$	Maximum Average Forward	Duty cycl	a – 500/-	$T_C = 25^{\circ}C$	500	
	Current	Duty Cyci	C - 3070	$T_C = 80$ °C	400	Α
I _{F(RMS)}	RMS Forward Current	Duty cycle = 50%		$T_C = 45^{\circ}C$	500	11
I_{FSM}	Non-Repetitive Forward Surge Cu	rrent	8.3ms	$T_C = 45$ °C	3000	

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



All ratings @ $T_j = 25$ °C unless otherwise specified

Electrical Characteristics

Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
V_{F}	Diode Forward Voltage	$I_F = 400A$			1.0	1.1	
		$I_F = 800A$			1.4		V
		$I_F = 400A$	$T_{j} = 125^{\circ}C$		0.9		
Ţ	Maximanum Davanca Laglaga Cumment	$T_{i} = 25^{\circ}C$	$T_i = 25^{\circ}C$			750	4
I_{RM}	Maximum Reverse Leakage Current	$V_R = 200V$	$T_{j} = 125^{\circ}C$			1000	μA
C_T	Junction Capacitance	$V_R = 200V$			1600		pF

Dynamic Characteristics

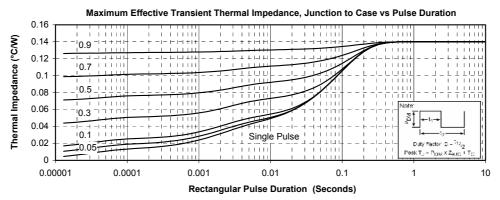
Symbol	Characteristic	Test Conditions	Min	Typ	Max	Unit	
t_{rr}	Reverse Recovery Time	$I_F=1A, V_R=30V$ $di/dt = 400A/\mu s$	$T_j = 25$ °C		39		ns
t_{rr}	Reverse Recovery Time		$T_j = 25^{\circ}C$		60		ns
· rr	Reverse Recovery Time		$T_{j} = 125^{\circ}C$		110		
Q _{rr}	Reverse Recovery Charge	$I_F = 400A$ $V_R = 133V$ $di/dt = 800A/\mu s$	$T_j = 25^{\circ}C$		800		nC
Qrr	Reverse Recovery Charge		$T_{j} = 125^{\circ}C$		3360		пс
T	Reverse Recovery Current	,	$T_j = 25^{\circ}C$		24		A
I_{RRM}	Reverse Recovery Current		$T_{\rm j} = 125^{\circ}{\rm C}$		60		Λ
t_{rr}	Reverse Recovery Time	$I_F = 400A$ $V_R = 133V$ $di/dt = 4000A/\mu s$			80		ns
Qrr	Reverse Recovery Charge		$T_j = 125$ °C		7.64		μС
I_{RRM}	Reverse Recovery Current				176		A

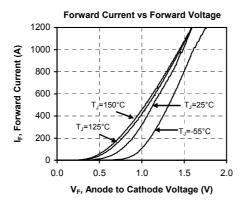
Thermal and package characteristics

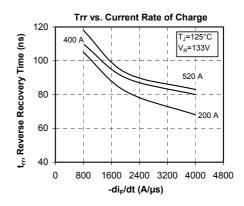
Symbol	Characteristic			Min	Тур	Max	Unit
R_{thJC}	Junction to Case Thermal Resistance					0.14	°C/W
V_{ISOL}	RMS Isolation Voltage, any terminal to case t =1 min, 50/60Hz			4000			V
T_{J}	Operating junction temperature range			-40		150	°C
T _{STG}	Storage Temperature Range			-40		125	
T_{C}	Operating Case Temperature			-40		100	
Torque	Mounting torque	To heatsink	M6	3		5	N.m
	Wounting torque	For terminals	M5	2		3.5	11.111
Wt	Package Weight					300	g

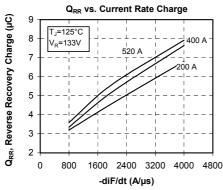


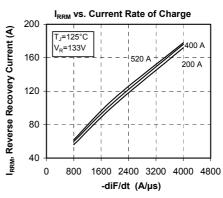
Typical Performance Curve

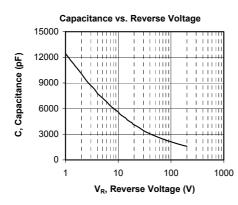


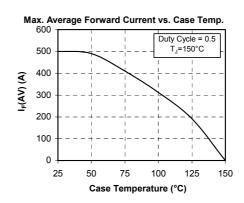








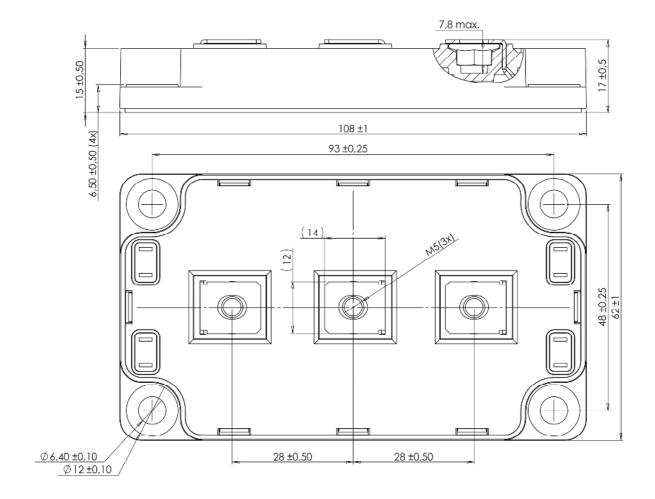




3 - 5



SP6 Package outline (dimensions in mm)





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