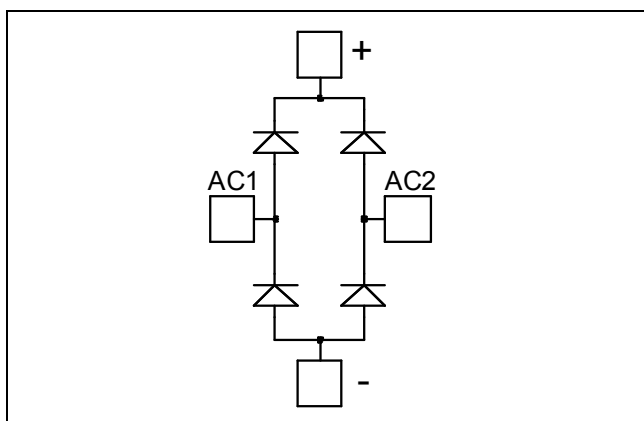


Diode Full Bridge Power Module

$$V_{RRM} = 1000V$$

$$I_C = 100A @ T_c = 70^{\circ}C$$



Application

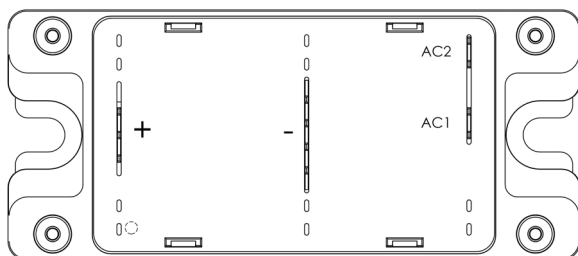
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers

Features

- Ultra fast recovery times
- Soft recovery characteristics
- High blocking voltage
- High current
- Low leakage current
- Very low stray inductance
 - Symmetrical design
 - Lead frames for power connections
- High level of integration

Benefits

- Outstanding performance at high frequency operation
- Low losses
- Low noise switching
- Solderable terminals for easy PCB mounting
- 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

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°C	130	A	
			T _C = 70°C	100		
I _{F(RMS)}	RMS Forward Current	Duty cycle = 50%	T _C = 45°C	130		
I _{FSM}	Non-Repetitive Forward Surge Current		8.3ms	T _C = 45°C		500

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

Electrical Characteristics

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
V_F	Diode Forward Voltage	$I_F = 100A$			2.1	2.7	V
		$I_F = 150A$			2.3		
		$I_F = 100A$	$T_j = 125^\circ C$		1.7		
I_{RM}	Maximum Reverse Leakage Current	$V_R = 1000V$	$T_j = 25^\circ C$			100	μA
			$T_j = 125^\circ C$			500	
C_T	Junction Capacitance	$V_R = 1000V$			120		pF

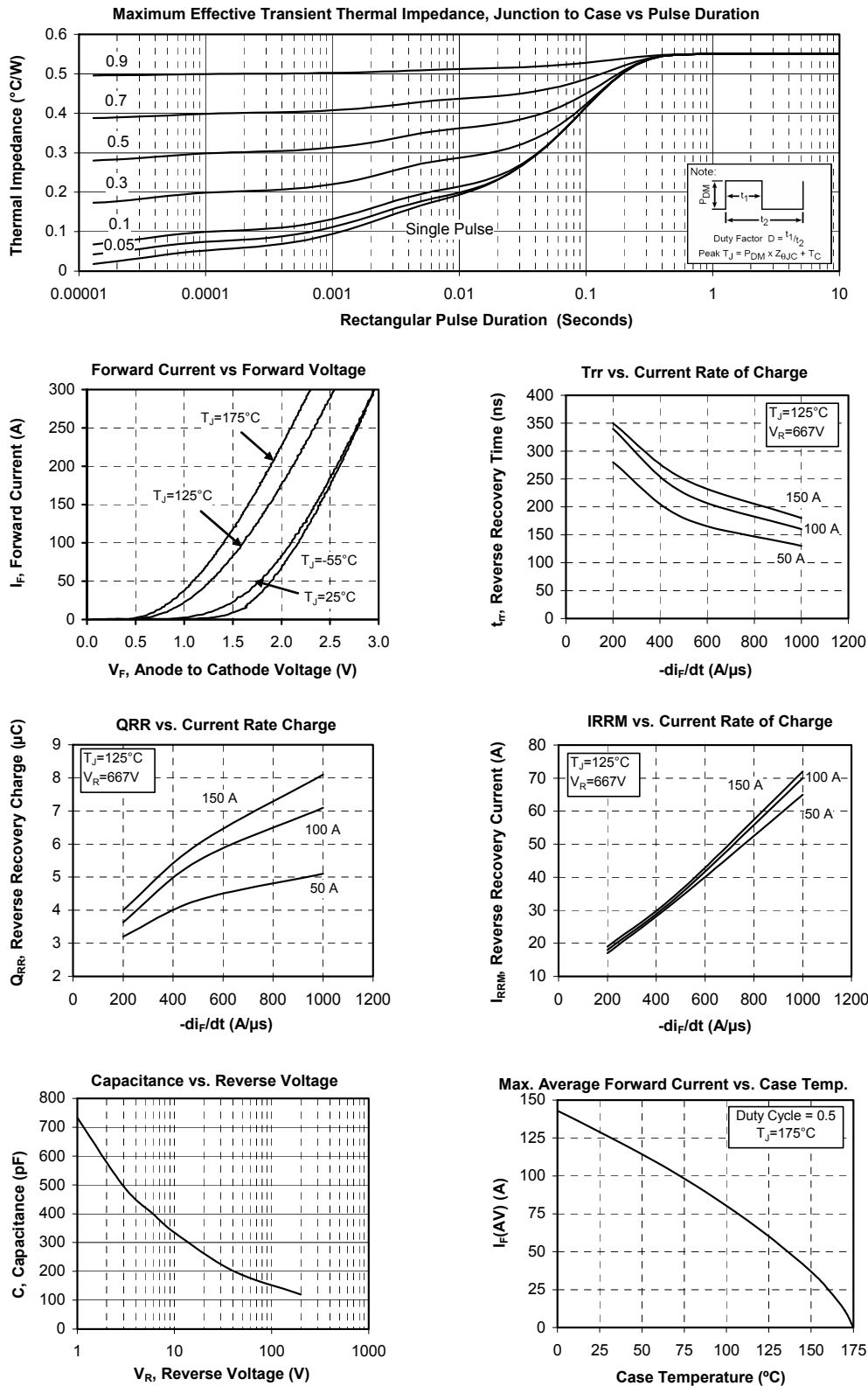
Dynamic Characteristics

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit
t _{rr}	Reverse Recovery Time	I _F =1A, V _R =30V di/dt = 100A/μs	T _j = 25°C		45		ns
t _{rr}	Reverse Recovery Time	I _F = 100A V _R = 667V di/dt = 200A/μs	T _j = 25°C		290		ns
			T _j = 125°C		340		
Q _{rr}	Reverse Recovery Charge		T _j = 25°C		685		nC
			T _j = 125°C		3645		
I _{RRM}	Reverse Recovery Current		T _j = 25°C		6		A
		T _j = 125°C		18			
t _{rr}	Reverse Recovery Time	I _F = 100A V _R = 667V di/dt=1000A/μs	T _j = 125°C		160		ns
Q _{rr}	Reverse Recovery Charge				7100		nC
I _{RRM}	Reverse Recovery Current				70		A

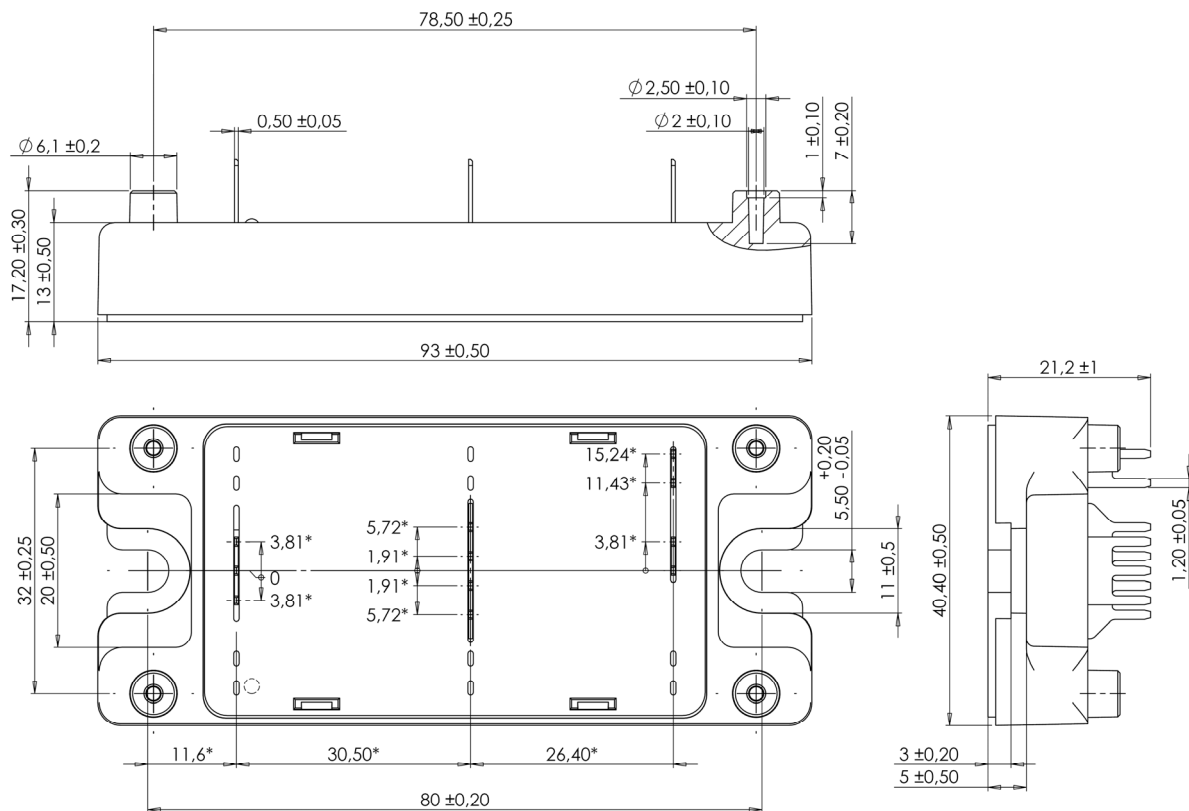
Thermal and package characteristics

Symbol	Characteristic	Min		Typ	Max	Unit
R_{thJC}	Junction to Case Thermal Resistance				0.55	$^\circ C/W$
V_{ISOL}	RMS Isolation Voltage, any terminal to case $t = 1$ min, 50/60Hz	4000				V
T_J	Operating junction temperature range	-40			175	$^\circ C$
T_{STG}	Storage Temperature Range	-40			125	
T_C	Operating Case Temperature	-40			100	
Torque	Mounting torque	To Heatsink	M5	2.5	4.7	N.m
Wt	Package Weight				160	g

Typical Performance Curve



SP4 Package outline (dimensions in mm)



ALL DIMENSIONS MARKED * ARE TOLERANCED AS: $\pm \phi 1$

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