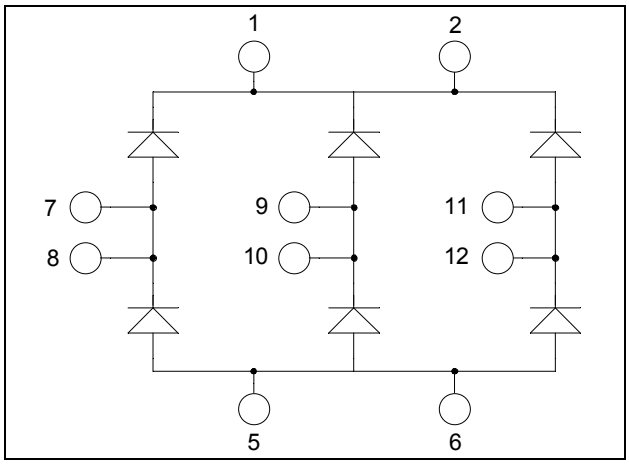
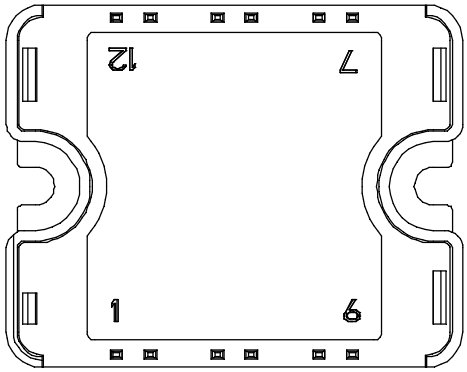
3 Phase rectifier bridge Power Module

V_{RRM} = 1600V
I_C = 90A @ Tc = 80°C





All multiple inputs and outputs must be shorted together
1/2 ; 5/6 ; 7/8 ; 9/10 ; 11/12

Application

- Input rectifiers for inverter
- Battery DC power supply

Features

- High blocking voltage
- High surge current
- Low leakage current
- Very low stray inductance
  - Symmetrical design
- High level of integration

Benefits

- Solderable terminals for easy PCB mounting
- Direct mounting to heatsink (isolated package)
- Low profile
- RoHS compliant

Absolute maximum ratings

Symbol	*Parameter*			*Max ratings*	*Unit*
V_R	Maximum DC reverse Voltage			1600	V
V_{RRM}	Maximum Peak Repetitive Reverse Voltage				
I_F	DC Forward Current		T_C = 80°C	90	A
I_{FSM}	Non-Repetitive Forward Surge Current	t=10ms	T_J = 45°C	850	

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°C unless otherwise specified

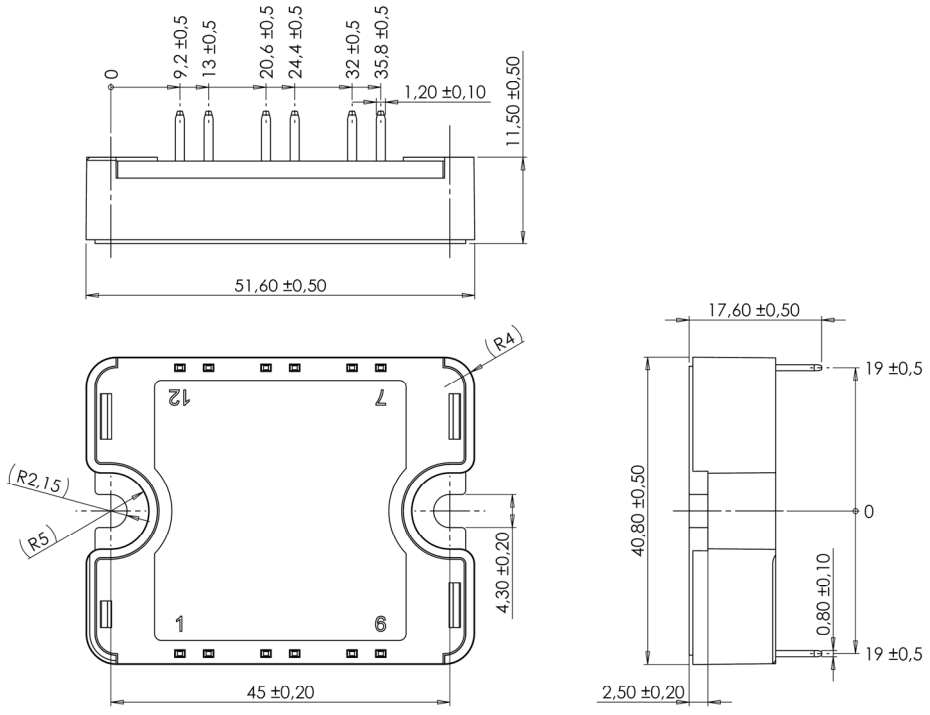
Electrical Characteristics

Symbol	*Characteristic*	*Test Conditions*		*Min*	*Typ*	*Max*	*Unit*
I_R	Reverse Current	V_R = 1600V	T_j = 25°C		50		µA
			T_j = 125°C		4		mA
V_F	Forward Voltage	I_F = 90A	T_j = 25°C		1.3		V
			T_j = 125°C		1.1		
V_T	On – state Voltage				0.8		V
r_T	On – state Slope resistance				4.8		mΩ

Thermal and package characteristics

Symbol	*Characteristic*			*Min*	*Typ*	*Max*	*Unit*
R_{thJC}	Junction to Case Thermal Resistance					0.85	°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	M4	2		3	N.m
Wt	Package Weight					80	g

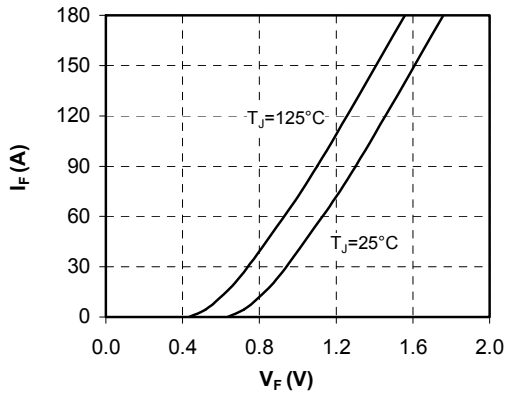
SP1 Package outline (dimensions in mm)



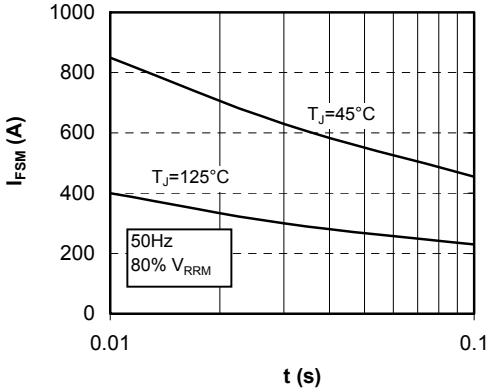
See application note 1904 - Mounting Instructions for SP1 Power Modules on www.microsemi.com

Typical Performance Curve

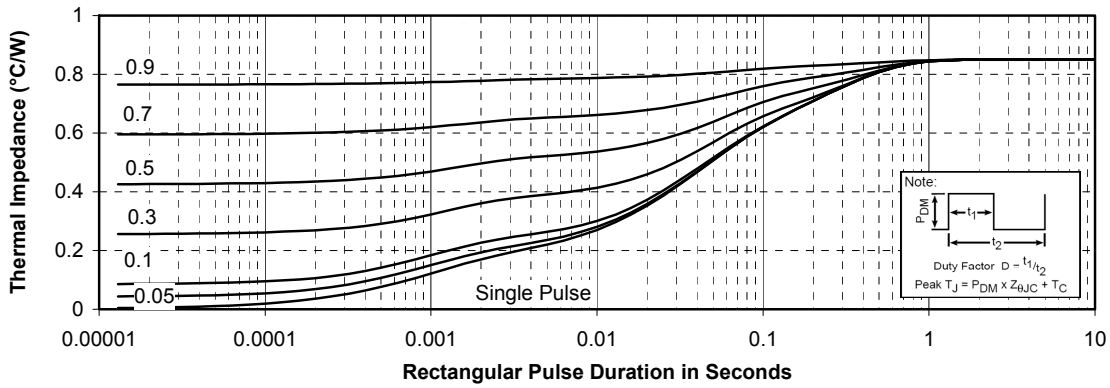
Forward Characteristic



Non-Repetitive Forward Surge Current



maximum Effective Transient Thermal Impedance, Junction to Case vs Pulse Duration



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