



# SMBRP20100

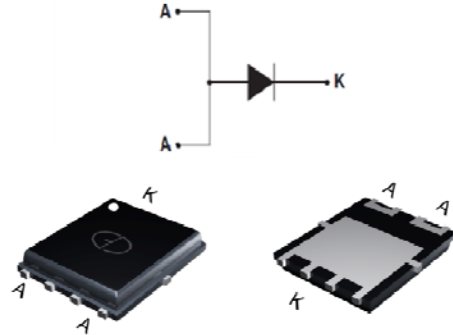
Trench Schottky Barrier Rectifier  
Reverse Voltage 100 Volts Forward Current 20 Amperes

## Features

Ultra Low  $V_F=0.31V$  at  $I_F=1A$  (25°C)

Ultra low  $V_F=0.74V$  at  $I_F=20A$ (25°C)

- Thin Package:1.0mm
- Low forward voltage drop, low power losses
- High efficiency operation
- Halogen Free Plastic package has underwriters Laboratory Flammability Classification 94V-0



## Mechanical Data

- Case: Epoxy, Molded
- Weight: 0.1grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 3000 units per reel

Package: POWER QFN5x6

## Maximum Ratings & Electrical Characteristics

( $T_A=25^\circ C$  unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SMBRP20100	UNIT
Maximum repetitive peak reverse voltage			$V_{RRM}$	100	V
Working peak reverse voltage			$V_{RWM}$	100	V
Maximum DC blocking voltage			$V_{DC}$	100	V
Maximum average forward rectified current at $T_c=105^\circ C$ total device per diode			$I_{F(AV)}$	20	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode			$I_{FSM}$	150	A
Peak repetitive reverse current per leg at $t_p=2.0\mu s$ , 1KHz			$I_{RRM}$	1.0	A
Operating junction temperature range			$T_J$	-55 to+150	°C
Storage temperature range			$T_{STG}$	-55 to+150	°C
Maximum instantaneous forward voltage per leg	$I_F=20A$ $I_F=20A$	$T_C=25^\circ C$ $T_C=125^\circ C$	$V_F$	0.80(0.74TYP ) 0.72	V
Maximum reverse current per leg at working peak Reverse voltage			$I_R$	200 15	$\mu A$ mA
<b>Thermal Characteristics <math>T_A=25^\circ C</math> unless otherwise noted</b>					
Symbol	Parameter		TYP (POWER QFN 5x6)		Unit
R $\theta$ JC	Thermal Resistance, Junction to Case per Leg		2.5		°C /W
R $\theta$ JA	Thermal Resistance, Junction to Ambient per Leg		50		°C /W

Note: Pulse test:300us pulse width, duty cycle=2%



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## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

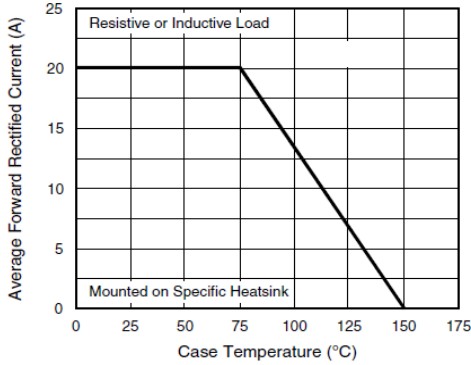


Fig. 1 - Maximum Forward Current Derating Curve

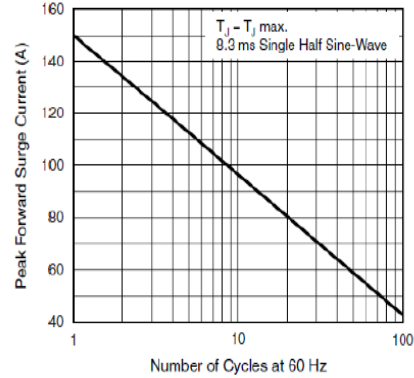


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

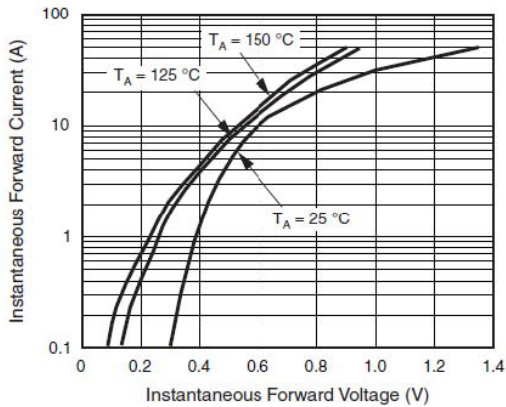


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

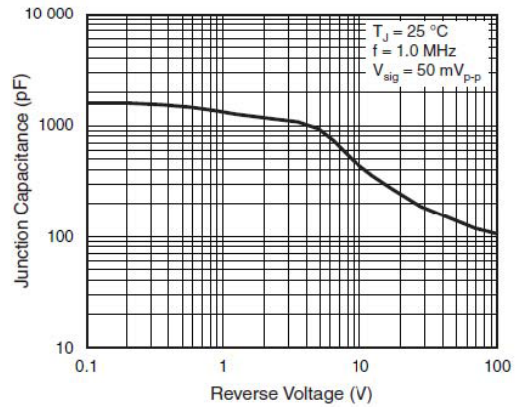


Fig. 5 - Typical Junction Capacitance

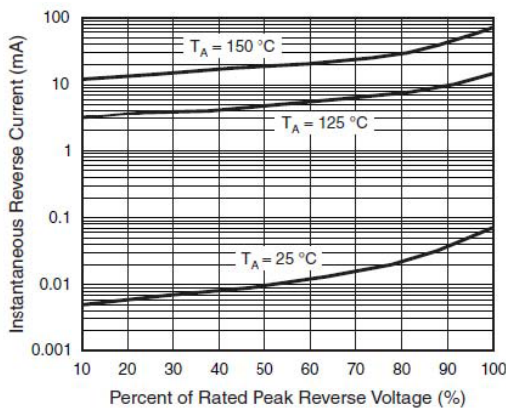


Fig. 4 - Typical Reverse Characteristics Per Diode

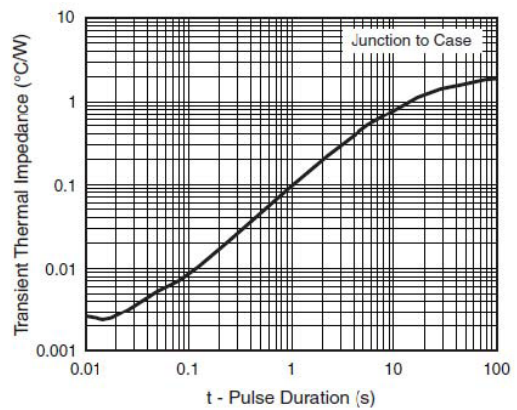


Fig. 6 - Typical Transient Thermal Impedance Per Diode



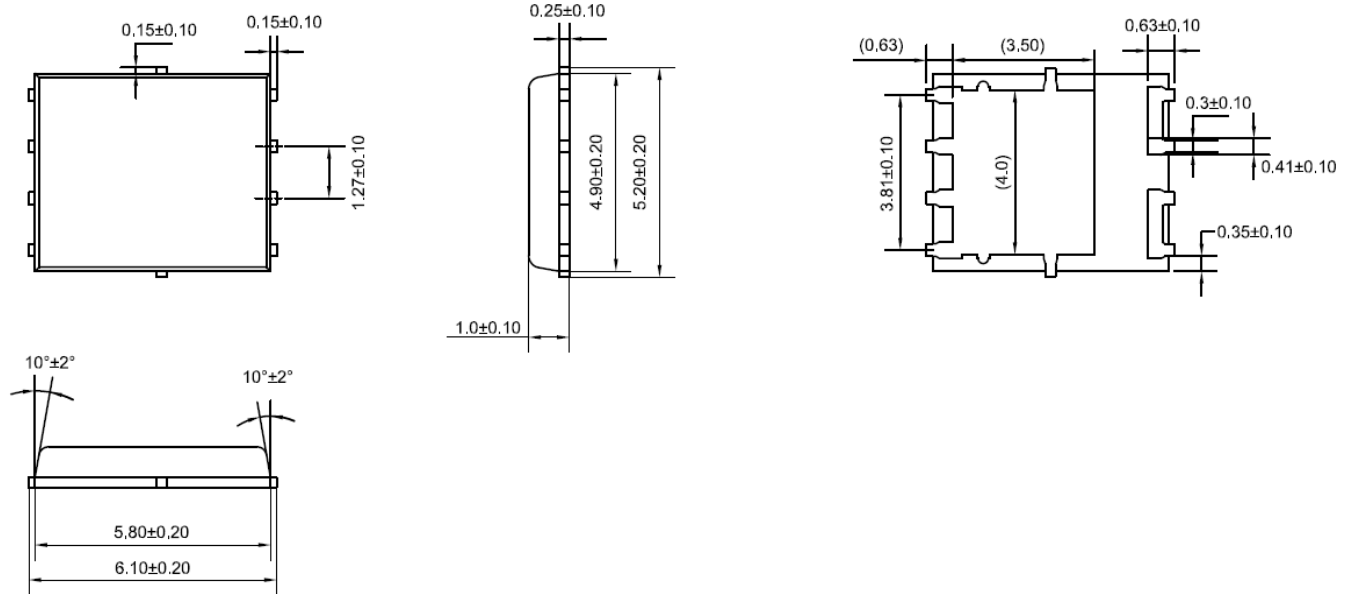
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## Package Outline Dimensions

Unit: millimeters

### POWER QFN 5x6





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