



# SMBRP1045

Schottky Barrier Rectifier

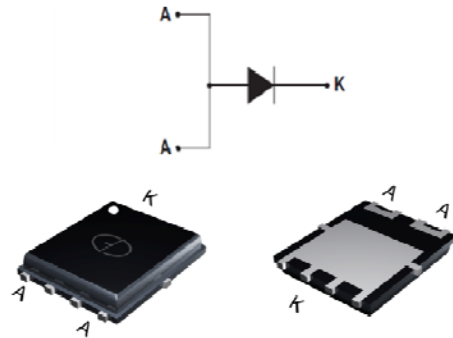
Reverse Voltage 45 Volts Forward Current 10 Amperes

## Features

Ultra Low  $V_f=0.30V(TYP)$  at  $I_F=1A (25^\circ C)$

Ultra Low  $V_f=0.43V(TYP)$  at  $I_F=10A (25^\circ C)$

- 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	SMBRP1045	UNIT
Maximum repetitive peak reverse voltage			$V_{RRM}$	45	V
Working peak reverse voltage			$V_{RWM}$	45	V
Maximum DC blocking voltage			$V_{DC}$	45	V
Maximum average forward rectified current at $T_c=105^\circ C$ total device per diode			$I_{F(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode			$I_{FSM}$	200	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	$^\circ C$
Storage temperature range			$T_{STG}$	-55 to +150	$^\circ C$
Maximum instantaneous forward voltage per leg	$I_F=10A$ $I_F=10A$	$T_C=25^\circ C$ $T_C=125^\circ C$	$V_F$	0.47(0.43TYP) 0.39	V
Maximum reverse current per leg at working peak Reverse voltage			$I_R$	500 50	$\mu A$ 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		$^\circ C / W$
R $\theta$ JA	Thermal Resistance, Junction to Ambient per Leg		50		$^\circ C / W$

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)

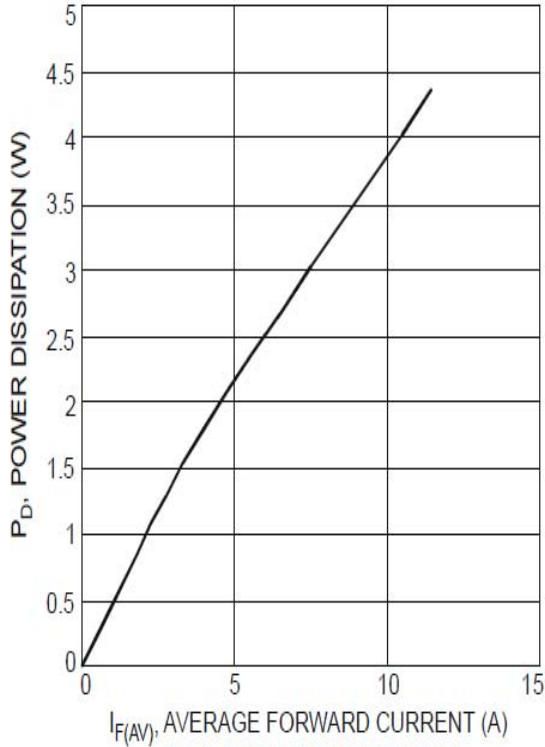


Fig. 1 Forward Power Dissipation

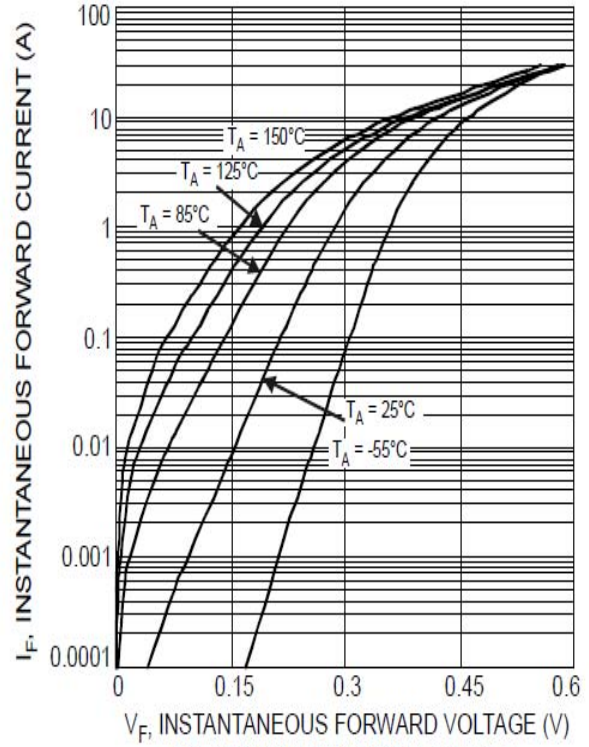


Fig. 2 Typical Forward Characteristics

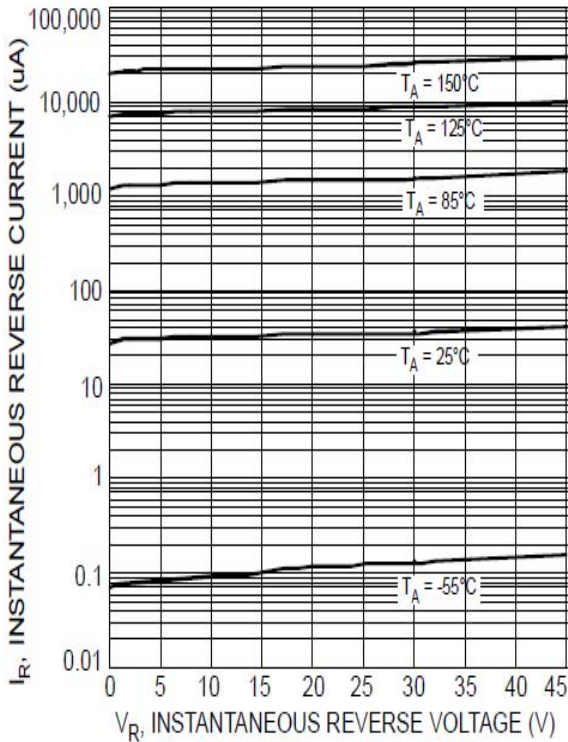


Fig. 3 Typical Reverse Characteristics

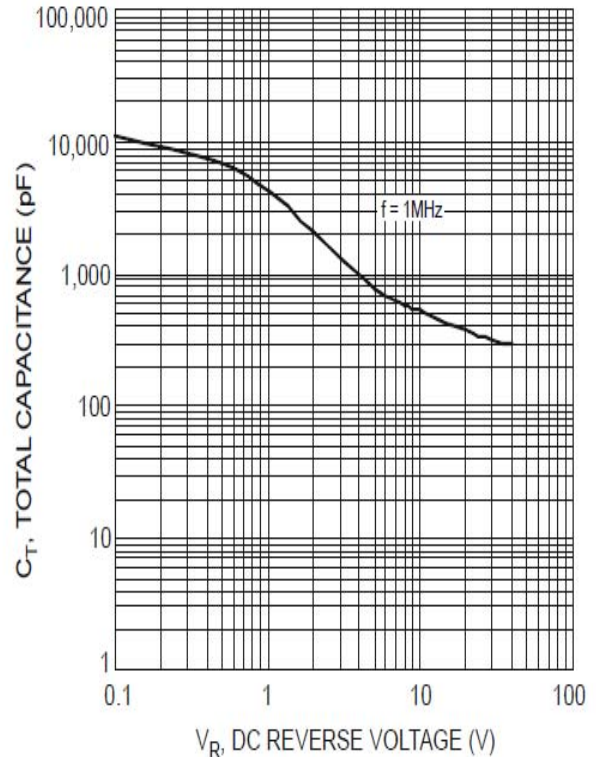


Fig. 4 Total Capacitance vs. Reverse Voltage



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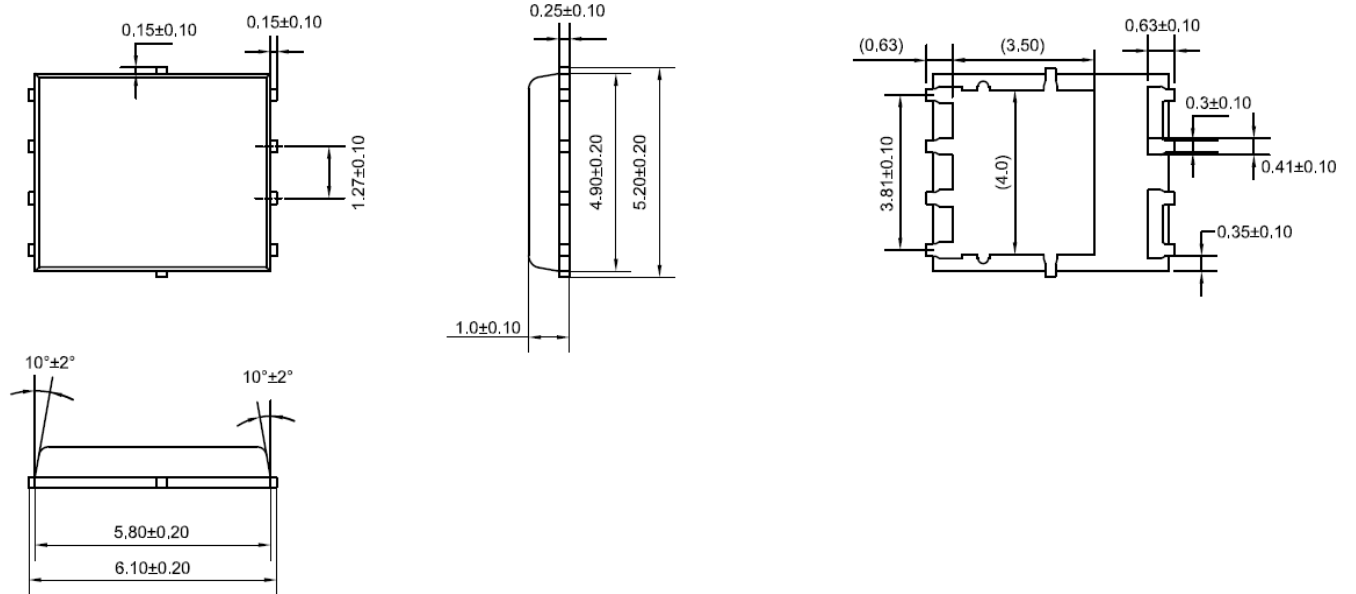
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## Package Outline Dimensions

Unit: millimeters

### POWER QFN 5x6





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