



# SMBRP2050

Schottky Barrier Rectifier

Reverse Voltage 50 Volts Forward Current 20 Amperes

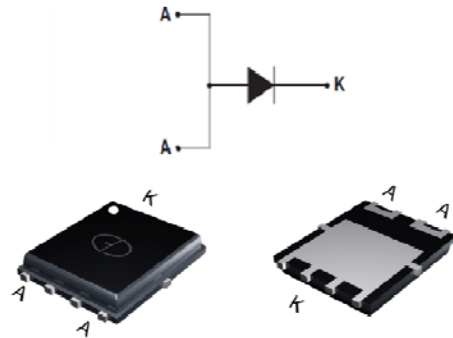
## Features

Ultra Low  $V_f=0.40V$  at  $I_F=10A$  (25°C)/ $V_f=0.49 V$  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	SMBRP2050	UNIT
Maximum repetitive peak reverse voltage				$V_{RRM}$	50	V
Working peak reverse voltage				$V_{RWM}$	50	V
Maximum DC blocking voltage				$V_{DC}$	50	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				$I_{FSM}$	200	A
Peak repetitive reverse current per leg at $t_p=2.0\mu s$ , 1KHz				$I_{RRM}$	2.0	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		$I_F=20A$ $I_F=20A$	$T_C=25^{\circ}C$ $T_C=125^{\circ}C$	$V_F$	0.55(0.49 TYP) 0.45	V
Maximum reverse current per leg at working peak Reverse voltage			$T_J=25^{\circ}C$ $T_J=100^{\circ}C$	$I_R$	500 50	$\mu A$ mA
Thermal Characteristics $T_A=25^{\circ}C$ unless otherwise noted						
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 CURRENT DERATING CURVE

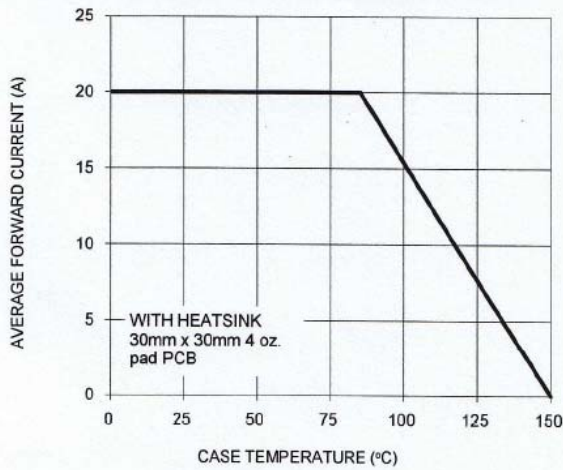


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

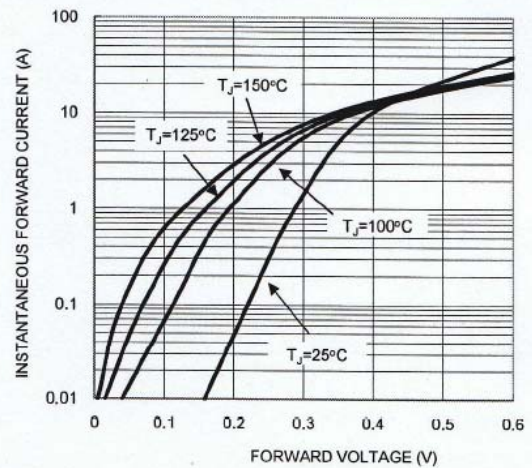


FIG. 3 TYPICAL REVERSE CHARACTERISTICS

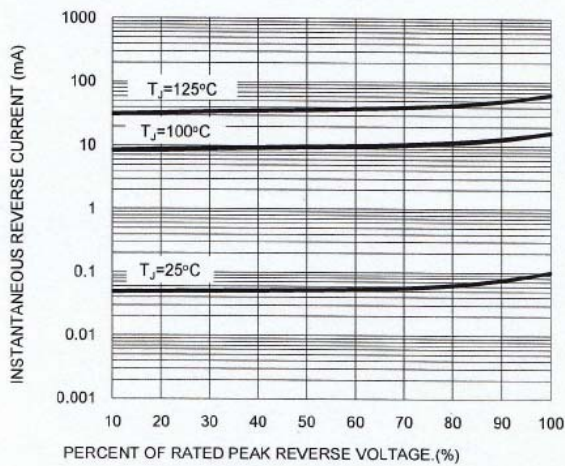
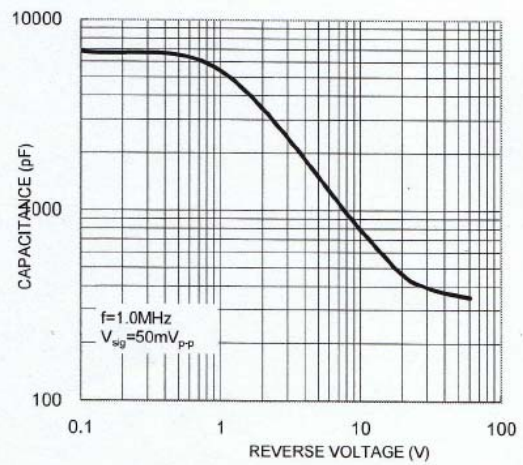


FIG. 4 TYPICAL JUNCTION CAPACITANCE





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