

## Product Specification

Type (POWER QFN Diode)

**MBRP1045**

Construction : Schottky Barrier Rectifier

Application : For General Purpose

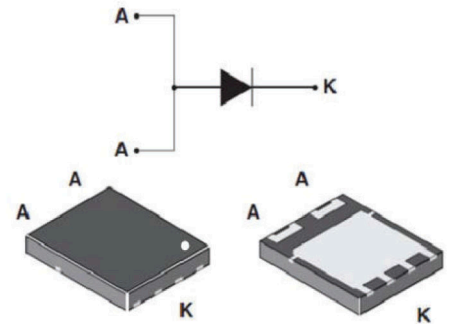
(Manufacturer) :

Surge Components Inc.

Prepared on May. 10<sup>th</sup>, 2012

Prepared: R & D Department

Approval: QRA Department



**SCHOTTKY BARRIER RECTIFIER**

**10 AMPERES**

**45 VOLTS**

**0.47V (10A Type)/ Low Vf Schottky**

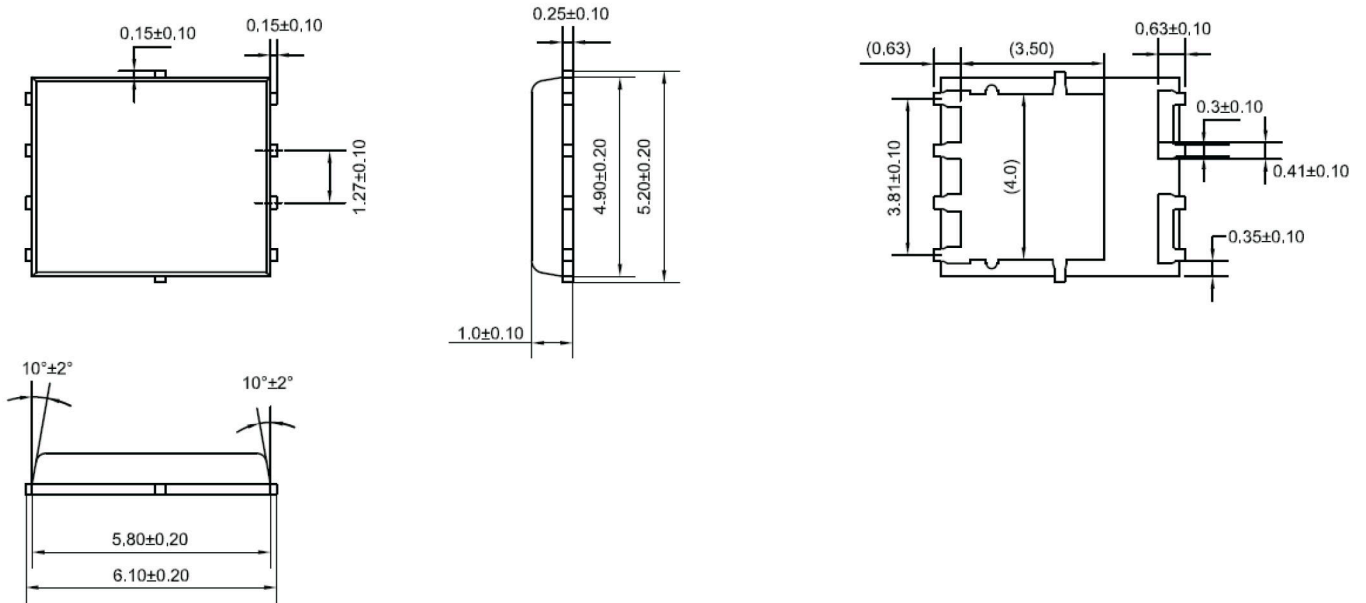
**Thin Package: 1.0mm**

**Halogen Free Package**

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### 1. Package Outline (POWER QFN5X6)




## 2.MARKING



1. Part Name : MBRP1045

2. Logo Mark: 

3. Polarity: 



### 3.Features& Mechanical Characteristics

#### Features

- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- For surface mounted application
- Metal of silicon rectifier, majority carrier conduction
- Low forward voltage, high efficiency
- Guarding for over voltage protection
- For use in low voltage, high frequency inverters,
- Free wheeling, and polarity protection applications

#### Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 0.1grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Shipped tape reel packing 3000/reel

### 4.Maximum Ratings and Electrical Characteristics

MAXIMUM RATINGS and ELECTRICAL CHARACTERISTICS(TC=25°C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	MBRP1045	UNIT
Maximum repetitive peak reverse voltage			VRRM	45	V
Working peak reverse voltage			VRWM	45	V
Maximum DC blocking voltage			VDC	45	V
Maximum average forward rectified current at Tc=105°C total device per diode			IF(AV)	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode			IFSM	200	A
Peak repetitive reverse current per leg at tp=2.0us , 1KHz			IRRM	1.0	A
Voltage rate of change (rated VR)			DV/dt	10000	V/us
Operating junction temperature range			TJ	—55 to+150	°C
Storage temperature range			TSTG	—55 to+150	°C
Maximum instantaneous forward voltage per leg	IF=10A	TC=25°C	VF	0.49	V
Maximum reverse current per leg at working peak Reverse voltage		TC=25°C	IR	300	uA

#### Thermal Characteristics Ta=25°C unless otherwise noted

Symbol	Parameter	Type Value	Unit
RθJC	Thermal Resistance, Junction to Case per Leg	2.5	°C /W
RθJA	Thermal Resistance, Junction to Ambient per Leg	50	°C /W

#### Note:

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

### 5. Rating and Characteristic Curves

(Tc=25°C Unless otherwise noted)

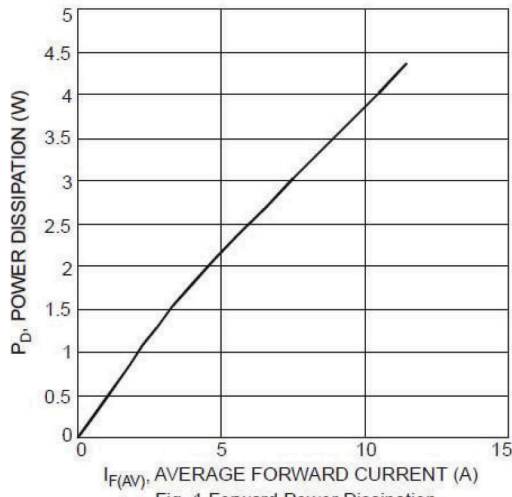


Fig. 1 Forward Power Dissipation

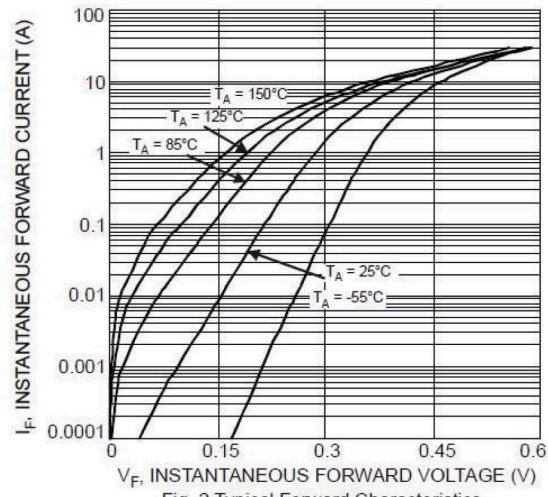


Fig. 2 Typical Forward Characteristics

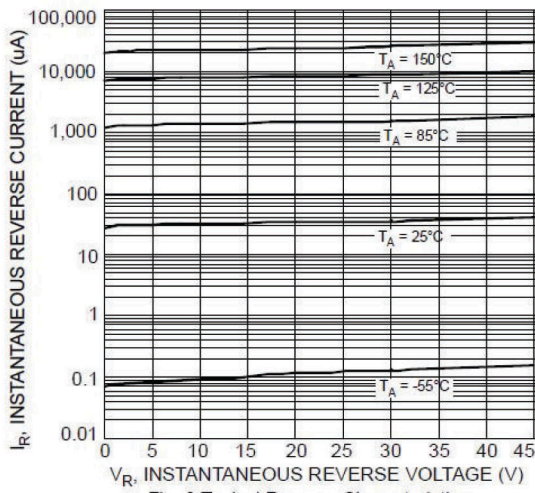


Fig. 3 Typical Reverse Characteristics

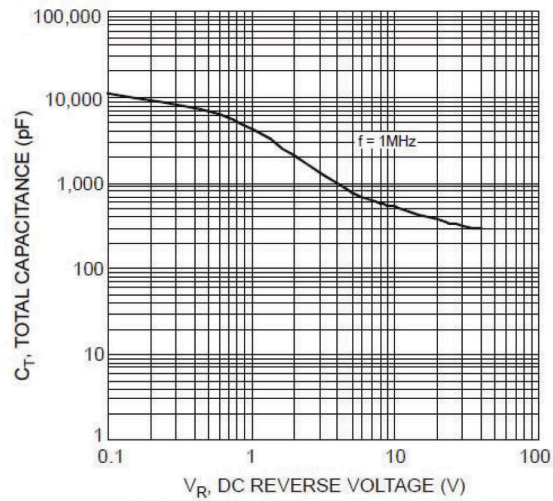


Fig. 4 Total Capacitance vs. Reverse Voltage

### 6. Packing Specification

Tape&reel packing

Packing size:3000 /reel( 13' reel)

**Figure 12. Tape and reel specifications**

