

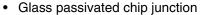
# Vishay General Semiconductor

## **Ultrafast Plastic Rectifier**



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	1.5 A			
V <sub>RRM</sub>	400 V, 600 V			
I <sub>FSM</sub>	50 A			
t <sub>rr</sub>	35 ns			
$V_{F}$	1.8 V			
T <sub>J</sub> max.	150 °C			

### **FEATURES**





- · Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS

### **TYPICAL APPLICATIONS**

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

### **MECHANICAL DATA**

Case: GP20

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class

1A whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SUF15G	SUF15J	UNIT	
Maximum repetitive peak reverse voltage	$V_{RRM}$	400	V		
Maximum RMS voltage	V <sub>RMS</sub> 28		420	V	
Maximum DC blocking voltage	$V_{DC}$	C 400 600		V	
Maximum average forward rectified current, 0.375" (9.5 mm) lead length at $T_{A} = 50\ ^{\circ}\text{C}$	I <sub>F(AV)</sub>	1.5		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50		А	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150		°C	

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SUF15G	SUF15J	UNIT
Maximum instantaneous forward voltage (1)	1.5 A		V <sub>F</sub>	V <sub>F</sub> 1.8		V
Maximum peak reverse current at rated peak reverse voltage		T <sub>A</sub> = 25 °C T <sub>A</sub> = 100 °C	I <sub>R</sub>	10 100		μΑ
Maximum reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t <sub>rr</sub>	35		ns
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub> 35		pF	

#### Note:

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

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THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER SYMBOL SUF15G		SUF15J	UNIT		
Typical thermal resistance <sup>(1)</sup>	$R_{ hetaJA} \ R_{ hetaJL}$	65 20		°C/W	

### Note:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
SUF15J-E3/54	0.886	54	1400	13" diameter paper tape and reel	
SUF15J-E3/73	0.886	73	1000	Ammo pack packaging	

#### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

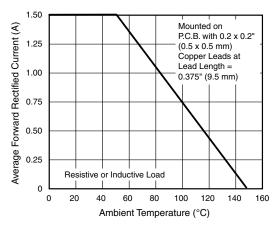


Figure 1. Maximum Forward Current Derating Curve

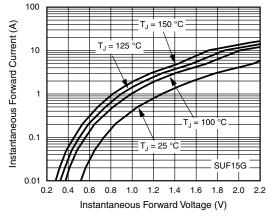


Figure 3. Typical Instantaneous Forward Characteristics

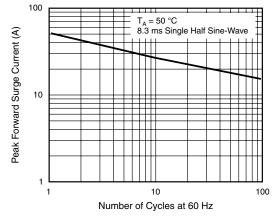


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

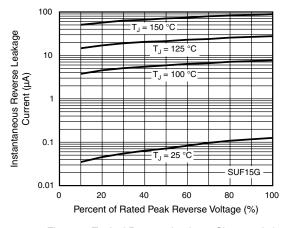


Figure 4. Typical Reverse Leakage Characteristics



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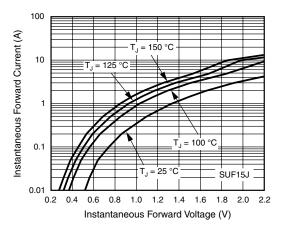
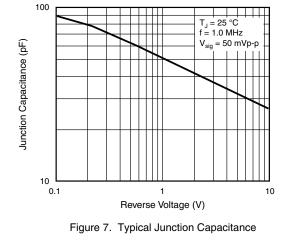


Figure 5. Typical Instantaneous Forward Characteristics



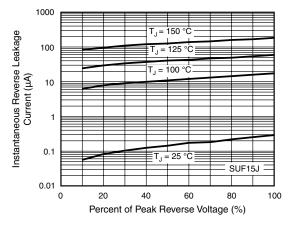


Figure 6. Typical Reverse Leakage Characteristics

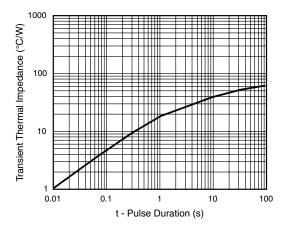
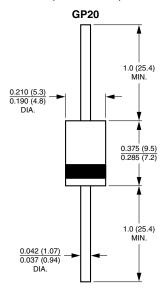


Figure 8. Typical Transient Thermal Impedance

### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



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