

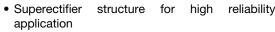
### Vishay General Semiconductor

### **Glass Passivated Junction Rectifier**



PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub>	1.5 A						
V <sub>RRM</sub>	50 V to 1000 V						
I <sub>FSM</sub>	50 A						
I <sub>R</sub>	5.0 μΑ						
V <sub>F</sub>	1.1 V						
T <sub>J</sub> max.	175 °C						

#### **FEATURES**





· Cavity-free glass-passivated junction

Low forward voltage drop

COMPLIANT

- Low leakage current, I<sub>R</sub> less than 0.1 μA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

#### **TYPICAL APPLICATIONS**

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

#### **MECHANICAL DATA**

Case: DO-204AC, molded epoxy over glass body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS compliant, commercial grade Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	GP15A	GP15B	GP15D	GP15G	GP15J	GP15K	GP15M	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T <sub>A</sub> = 55 °C	I <sub>F(AV)</sub>	1.5					Α		
Peak forward surge current 8.3 ms single half-sine wave superimposed on rated load	I <sub>FSM</sub>	50					Α		
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at T <sub>A</sub> = 55 °C	I <sub>R(AV)</sub>	100					μΑ		
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 175					°C		

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	GP15A	GP15B	GP15D	GP15G	GP15J	GP15K	GP15M	UNIT
Maximum instantaneous forward voltage	1.5 A		V <sub>F</sub>	1.1						V	
Maximum reverse current at rated DC		T <sub>A</sub> = 25 °C	I_	5.0							μА
blocking voltage		T <sub>A</sub> = 150 °C	I <sub>R</sub>	200							
Typical reverse recovery time	I <sub>F</sub> = 0.5 I <sub>rr</sub> = 0.2	A, I <sub>R</sub> = 1.0 V, 5 A	t <sub>rr</sub>	3.5				μs			
Typical junction capacitance	4.0 V, 1	MHz	CJ	15					pF		

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL GP15A GP15B GP15D GP15G GP15J GP15K GP15M UNI						UNIT		
Typical thormal registance	R <sub>0JA</sub> (1)	45							°C/W
Typical thermal resistance	R <sub>0</sub> JL (1)	20							C/VV

#### Note

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
GP15J-E3/54	0.425	54	4000	13" diameter paper tape and reel					
GP15J-E3/73	0.425	73	2000	Ammo pack packaging					
GP15JHE3/54 <sup>(1)</sup>	0.425	54	4000	13" diameter paper tape and reel					
GP15JHE3/73 <sup>(1)</sup>	0.425	73	2000	Ammo pack packaging					

#### Note

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

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

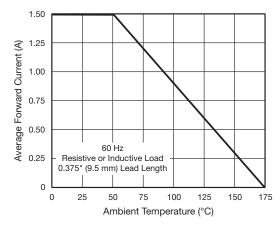


Fig. 1 - Forward Current Derating Curve

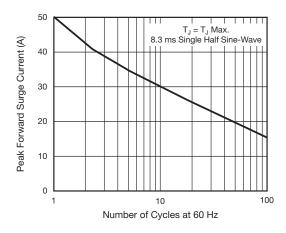


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

<sup>(1)</sup> AEC-Q101 qualified



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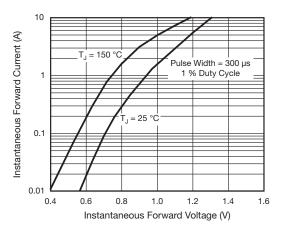
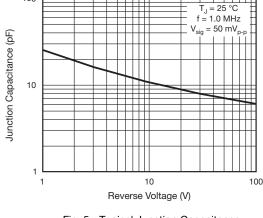


Fig. 3 - Typical Instantaneous Forward Characteristics



100

Fig. 5 - Typical Junction Capacitance

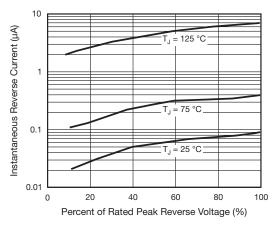


Fig. 4 - Typical Reverse Characteristics

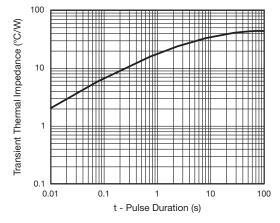
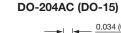
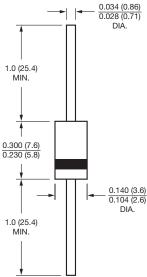


Fig. 6 - Typical Transient Thermal Impedance

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





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For technical questions within your region, please contact one of the following: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com



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