

## 1N3611GP, 1N3612GP, 1N3613GP, 1N3614GP, 1N3957GP

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Vishay General Semiconductor

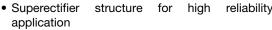
## **Glass Passivated Junction Plastic Rectifier**



DO-204AL (DO-41)

PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	1.0 A				
$V_{RRM}$	200 V, 400 V, 600 V, 800 V, 1000 V				
I <sub>FSM</sub>	30 A				
I <sub>R</sub>	1.0 μΑ				
$V_{F}$	1.0 V				
T <sub>J</sub> max.	175 °C				
Package	DO-204AL (DO-41)				
Diode variation	Single die				

#### **FEATURES**





· Cavity-free glass-passivated junction

Low forward voltage drop

RoHS

- $\bullet$  Low leakage current,  $I_R$  less than 0.1  $\mu A$
- · High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application

#### **MECHANICAL DATA**

Case: DO-204AL, 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) <sup>(1)</sup>							
PARAMETER	SYMBOL	1N3611GP	1N3612GP	1N3613GP	1N3614GP	1N3957GP	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	1000	Α
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T <sub>A</sub> = 75 °C	I <sub>F(AV)</sub>	1.0					Α
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30				Α	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 175					°C

#### Note

(1) JEDEC® registered values



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	1N3611GP	1N3612GP	1N3613GP	1N3614GP	1N3957GP	UNIT
Maximum instantaneous forward voltage	1.0 A		V <sub>F</sub>	1.0					V
Maximum DC reverse	T <sub>A</sub> = 25 °C		1.0						μА
current at rated DC blocking voltage		T <sub>A</sub> = 150 °C	I <sub>R</sub> <sup>(1)</sup>	300					
Typical reverse recovery time	I <sub>F</sub> = 0.5 I <sub>rr</sub> = 0.2	A, I <sub>R</sub> = 1.0 A, 5 A	t <sub>rr</sub>	2.0				μs	
Typical junction capacitance	4.0 V, 1	MHz	CJ	8.0				pF	

#### Note

<sup>(1)</sup> JEDEC registered values

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL   1N3611GP   1N3612GP   1N3613GP   1N3614GP   1N3957GP   UNIT					UNIT	
Typical thermal resistance	R <sub>0JA</sub> (1)	55				°C/W	
Typical thermal resistance	R <sub>0JL</sub> (1)	25				C/VV	

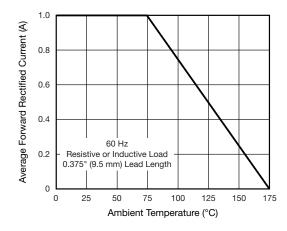
#### Note

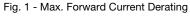
<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
1N3612GP-E3/54	0.335	54	5500	13" diameter paper tape and reel				
1N3612GP-E3/73	0.335	73	3000	Ammo pack packaging				
1N3612GPHE3/54 (1)	0.335	54	5500	13" diameter paper tape and reel				
1N3612GPHE3/73 (1)	0.335	73	3000	Ammo pack packaging				

#### Note

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)





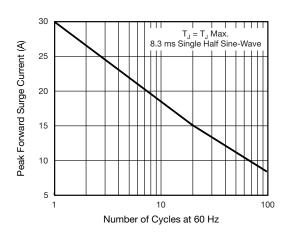


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

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

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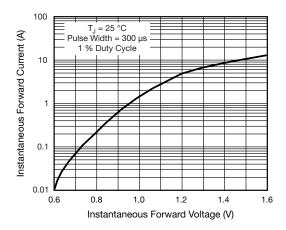


Fig. 3 - Typical Instantaneous Forward Characteristics

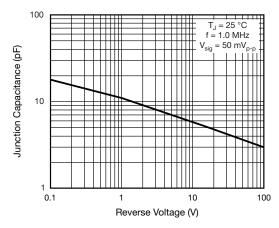


Fig. 5 - Typical Junction Capacitance

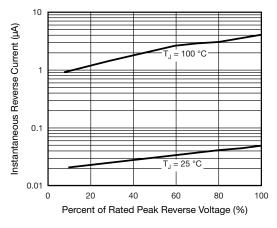


Fig. 4 - Typical Reverse Characteristics

• Lead diameter is  $\frac{0.020 (0.05)}{0.023 (0.58)}$ 

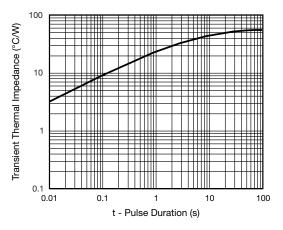


Fig. 6 - Typical Transient Thermal Impedance

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

# 0.107 (2.7) 0.080 (2.0) DIA. 0.205 (5.2) 0.205 (5.2) 0.160 (4.1) 1.0 (25.4) MIN. 0.205 (5.2) 0.160 (4.1) 1.0 (25.4) MIN. 1.0 (25.4) MIN.

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