

Vishay General Semiconductor

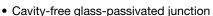
Glass Passivated Junction Rectifier



PRIMARY CHARACTERISTICS						
I _{F(AV)} 1.0 A						
V _{RRM}	200 V to 1000 V					
I _{FSM}	30 A					
I _R	1.0 μΑ					
V _F	1.0 V					
T _J max.	175 °C					

FEATURES





Low forward voltage drop

• Low leakage current, I_R 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 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 _A = 25 °C unless otherwise noted) ⁽¹⁾							
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 _{RMS}	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_A = 75 °C	I _{F(AV)}	1.0					Α
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30				А	
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to + 175				°C	

Note

(1) JEDEC registered values

1N3611GP thru 1N3615GP, 1N3957GP

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST (CONDITIONS SYMBOL 1N3611GP 1N3612		1N3612GP	1N3613GP	1N3614GP	1N3957GP	UNIT	
Maximum instantaneous forward voltage	1.0 A		V _F	1.0				V	
Maximum DC reverse current at rated DC		T _A = 25 °C	I _R ⁽¹⁾	1.0					
blocking voltage		T _A = 150 °C	300					– μA	
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	A, I _R = 1.0 A, 5 A	t _{rr}	2.0				μs	
Typical junction capacitance	4.0 V, 1	MHz	CJ	8.0					pF

Note

⁽¹⁾ JEDEC registered values

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

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead 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				
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_A = 25 °C unless otherwise noted)

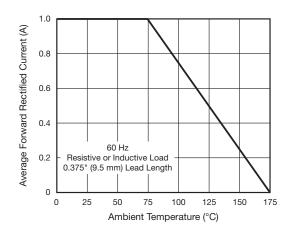


Fig. 1 - Max. Forward Current Derating

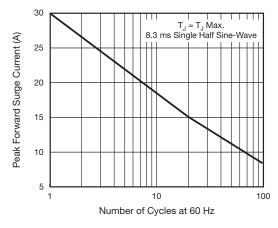


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

⁽¹⁾ AEC-Q101 qualified



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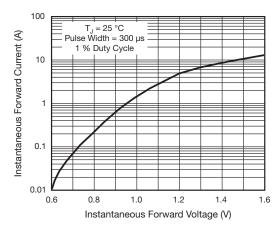


Fig. 3 - Typical Instantaneous Forward Characteristics

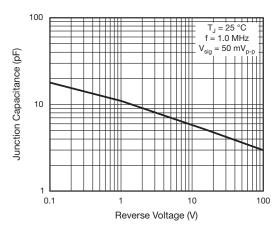


Fig. 5 - Typical Junction Capacitance

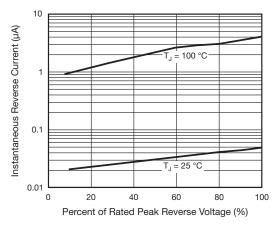


Fig. 4 - Typical Reverse Characteristics

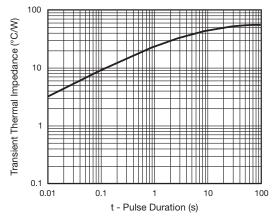


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41) 1.0 (25.4) 0.107 (2.7) 0.080 (2.0) DIA. 0.205 (5.2) 1.0 (25.4) MIN. 0.034 (0.86) 0.028 (0.71)

• Lead diameter is $\frac{0.020 \text{ (0.58)}}{0.023 \text{ (0.58)}}$ for suffix "E" part numbers

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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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