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### **Glass Passivated Junction Plastic Rectifier**



DO-41 (DO-204AL)

PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	1.0 A					
V <sub>RRM</sub>	200 V, 400 V, 600 V, 800 V, 1000 V					
I <sub>FSM</sub>	30 A					
I <sub>R</sub>	1.0 µA					
V <sub>F</sub>	1.0 V					
T <sub>J</sub> max.	175 °C					
Package	DO-41 (DO-204AL)					
Circuit configuration	Single					

#### **FEATURES**

Superectifier structure for high reliability application



· Cavity-free glass-passivated junction

- Low forward voltage drop
- Low leakage current, I<sub>R</sub> less than 0.1 μA
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### **TYPICAL APPLICATIONS**

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

#### **MECHANICAL DATA**

**Case:** DO-41 (DO-204AL), molded epoxy over glass body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

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

E3 suffix meets JESD 201 class 1A 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	٧
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)	1.0					
current at rated DC blocking voltage		T <sub>A</sub> = 150 °C	I <sub>R</sub> <sup>(1)</sup> 300		300		μA		
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	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	СЈ	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
Typical thermal resistance	R <sub>0JA</sub> (1)	55					°C/W
Typical trieffilal 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				

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

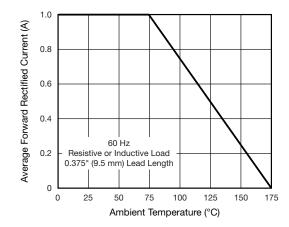


Fig. 1 - Max. Forward Current Derating

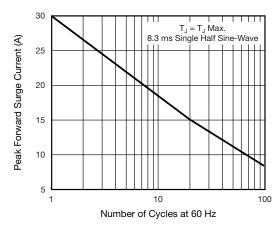


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current



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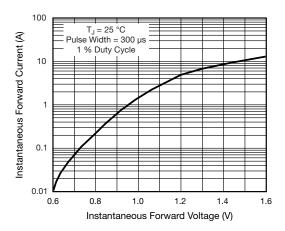


Fig. 3 - Typical Instantaneous Forward Characteristics

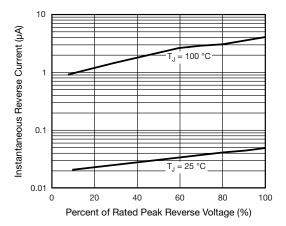


Fig. 4 - Typical Reverse Characteristics

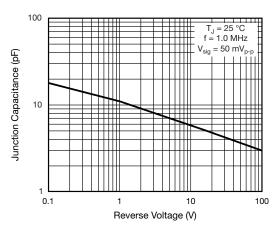


Fig. 5 - Typical Junction Capacitance

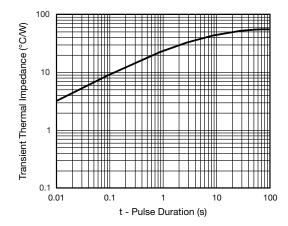


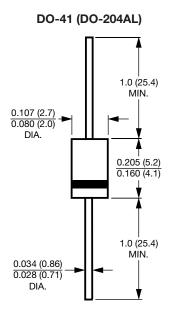
Fig. 6 - Typical Transient Thermal Impedance



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





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