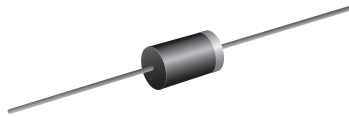




## Glass Passivated Junction Plastic Rectifier

SUPERECTIFIER®



DO-204AL (DO-41)

### FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- 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
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?999912](http://www.vishay.com/doc?999912)



RoHS COMPLIANT

### 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

**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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	30 A
$I_R$	1.0 $\mu A$
$V_F$	1.0 V
$T_J$ max.	175 °C
Package	DO-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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	$V_{RMS}$	140	280	420	560	700	V	
Maximum DC blocking voltage	$V_{DC}$	200	400	600	800	1000	A	
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 75\text{ °C}$	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30						A
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175						°C

#### Note

(1) JEDEC® registered values



ELECTRICAL CHARACTERISTICS (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 current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>			1.0			μA
	T <sub>A</sub> = 150 °C				300			
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>			2.0			μs
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>			8.0			pF

**Note**

(1) 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>θJA</sub> <sup>(1)</sup>			55			°C/W
	R <sub>θJL</sub> <sup>(1)</sup>			25			

**Note**

(1) 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)**

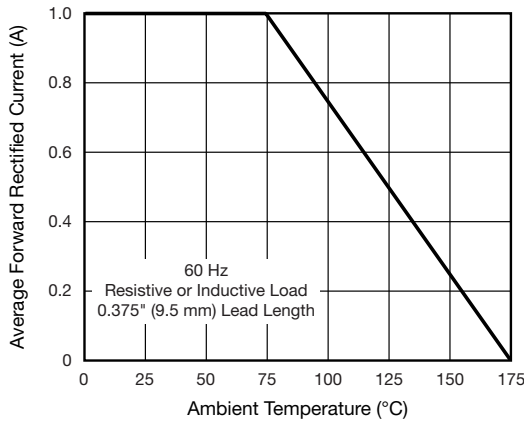


Fig. 1 - Max. Forward Current Derating

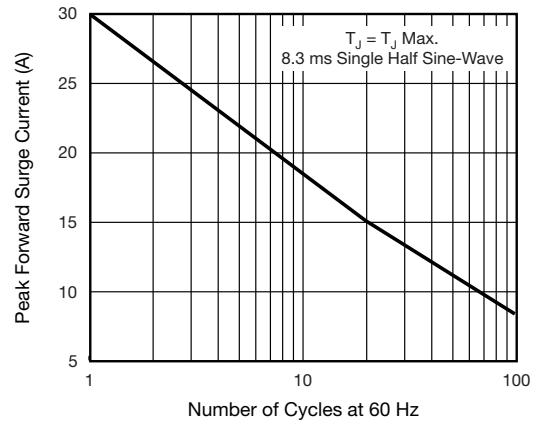


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

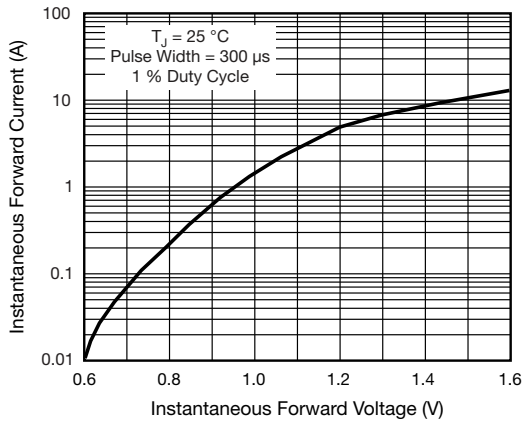


Fig. 3 - Typical Instantaneous Forward Characteristics

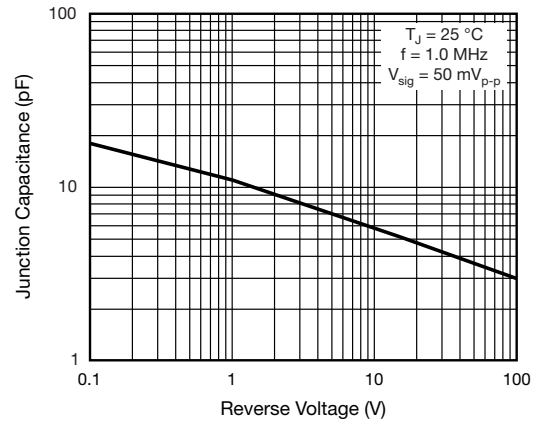


Fig. 5 - Typical Junction Capacitance

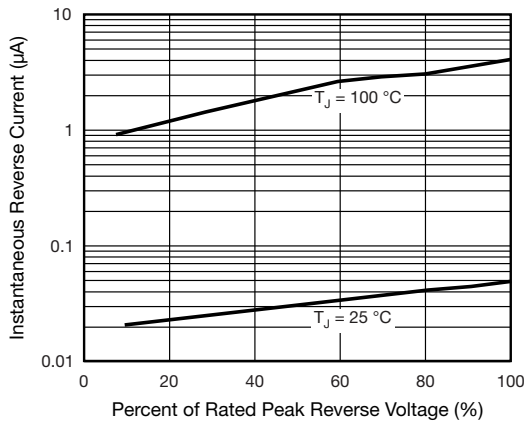


Fig. 4 - Typical Reverse Characteristics

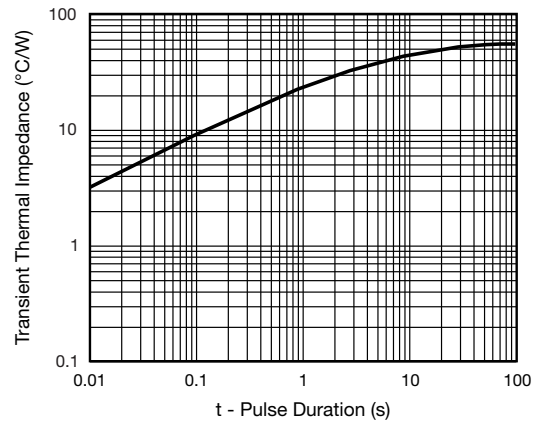
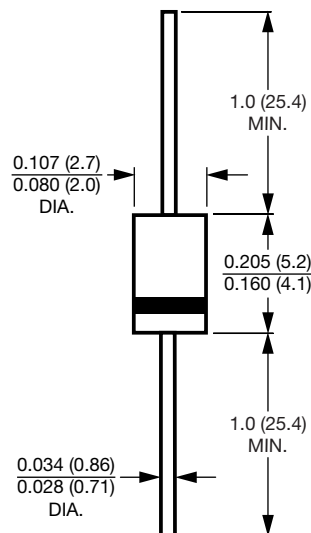


Fig. 6 - Typical Transient Thermal Impedance

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

**DO-204AL (DO-41)**



**Note**

- Lead diameter is  $\frac{0.026 (0.66)}{0.023 (0.58)}$  for suffix "E" part numbers



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