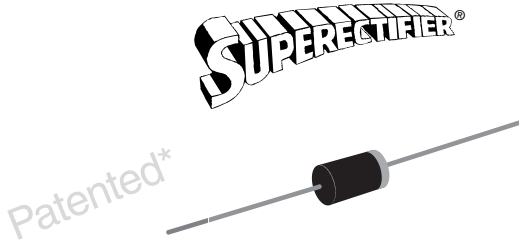


## Glass Passivated Junction Rectifier



\* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

**DO-204AC (DO-15)**

### FEATURES

- Superrectifier 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
- Meets environmental standard MIL-S-19500
- Solder dip  $260^\circ C$ , 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** DO-204AC, molded epoxy over glass body

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	200 V to 1000 V
$I_{FSM}$	50 A
$I_R$	$0.5 \mu A$
$V_F$	1.2 V
$T_J$ max.	$175^\circ C$

MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)								
PARAMETER	SYMBOL	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNIT	
Maximum repetitive peak reverse voltage <sup>(1)</sup>	$V_{RRM}$	200	400	600	800	1000	V	
Maximum RMS voltage	$V_{RMS}$	140	280	420	560	700	V	
Maximum DC blocking voltage <sup>(1)</sup>	$V_{DC}$	200	400	600	800	1000	V	
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55^\circ C$	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load <sup>(1)</sup>	$I_{FSM}$	50						A
Operating junction and storage temperature range <sup>(1)</sup>	$T_J, T_{STG}$	- 65 to + 175						$^\circ C$

**Note:**

(1) JEDEC registered values

ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNIT
Minimum reverse breakdown voltage <sup>(1)</sup>	50 $\mu\text{A}$	$V_{BR}$	220	440	660	880	1100	V
Maximum instantaneous forward voltage <sup>(1)</sup>	1.0 A	$V_F$	1.2					V
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$	0.5 25					$\mu\text{A}$
Maximum reverse recovery time <sup>(1)</sup>	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	2.0					$\mu\text{s}$
Maximum junction capacitance	at 12 V, 1 MHz	$C_J$	45	35	25	20	15	pF

**Note:**

(1) JEDEC registered values

THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNIT	
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	45						$^\circ\text{C/W}$

**Note:**

(1) Thermal resistance from junction to ambient 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
1N5618GP-E3/54	0.425	54	4000	13" diameter paper tape and reel
1N5618GP-E3/73	0.425	73	2000	Ammo pack packaging
1N5618GPHE3/54 <sup>(1)</sup>	0.425	54	4000	13" diameter paper tape and reel
1N5618GPHE3/73 <sup>(1)</sup>	0.425	73	2000	Ammo pack packaging

**Note:**

(1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

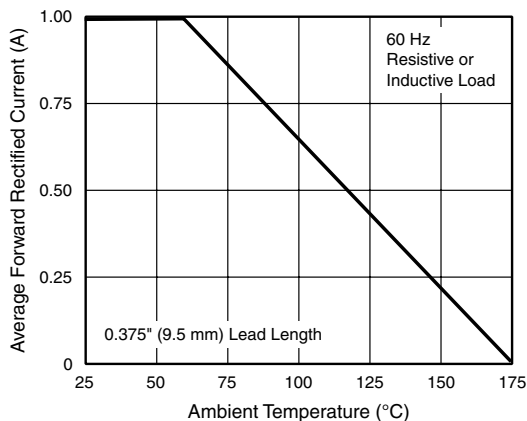


Figure 1. Forward Current Derating Curve

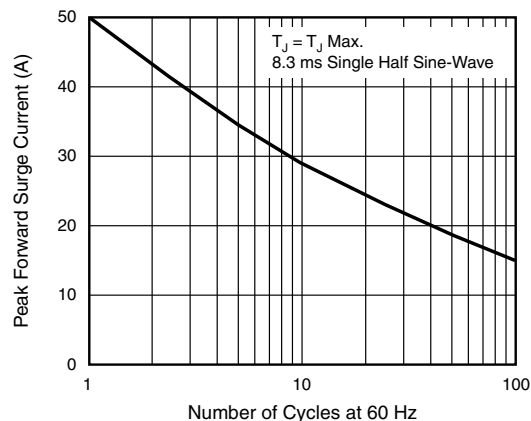


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

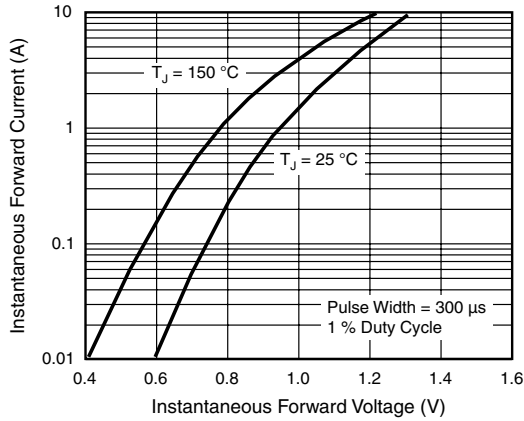


Figure 3. Typical Instantaneous Forward Characteristics

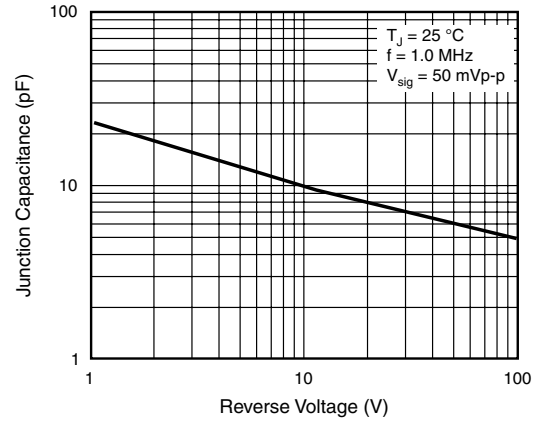


Figure 5. Typical Junction Capacitance

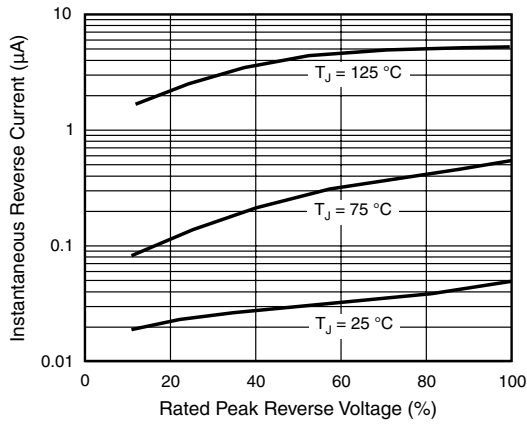


Figure 4. Typical Reverse Characteristics

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

**DO-204AC (DO-15)**

