

Glass Passivated Junction Fast Switching Plastic Rectifier



FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current
- 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?99912



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

MECHANICAL DATA

Case: DO-15 (DO-204AC), 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}	50 A
t_{rr}	150 ns, 250 ns, 300 ns, 500 ns
I_R	0.5 μ A
V_F	1.2 V
T_J max.	175 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	1N5615GP	1N5617GP	1N5619GP	1N5621GP	1N5623GP	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 $T_A = 55$ °C	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50					A
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175					°C

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

PARAMETER	TEST CONDITIONS		SYMBOL	1N5615GP	1N5617GP	1N5619GP	1N5621GP	1N5623GP	UNIT
Maximum instantaneous forward voltage	1.0 A		V_F	1.2				V	
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	I_R	0.5				μA	
		$T_A = 100^\circ\text{C}$		25					
Maximum reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$		t_{rr}	150		250	300	500	ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	25				pF	

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

PARAMETER	SYMBOL	1N5615GP	1N5617GP	1N5619GP	1N5621GP	1N5623GP	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	45				$^\circ\text{C}/\text{W}$	

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
1N5619GP-E3/54	0.425	54	4000	13" diameter paper tape and reel
1N5619GP-E3/73	0.425	73	2000	Ammo pack packaging

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

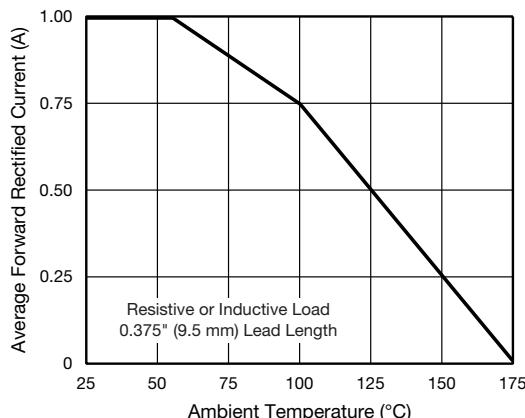


Fig. 1 - Forward Current Derating Curve

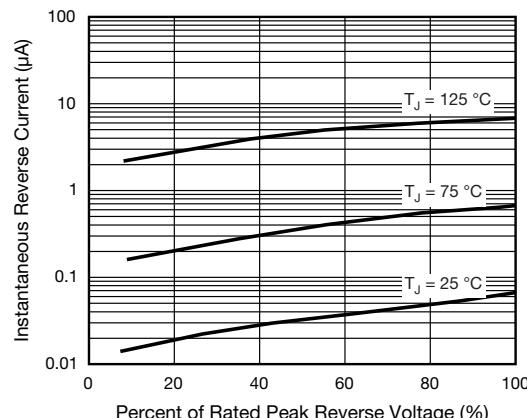


Fig. 4 - Typical Reverse Characteristics

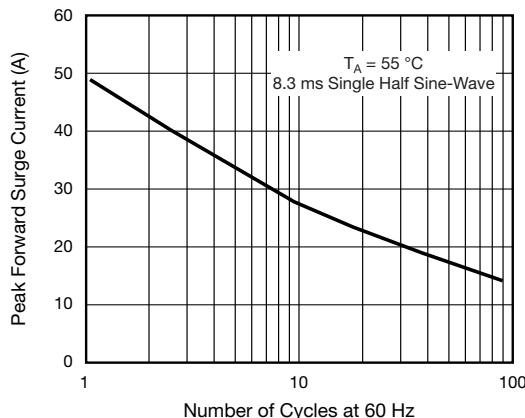


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

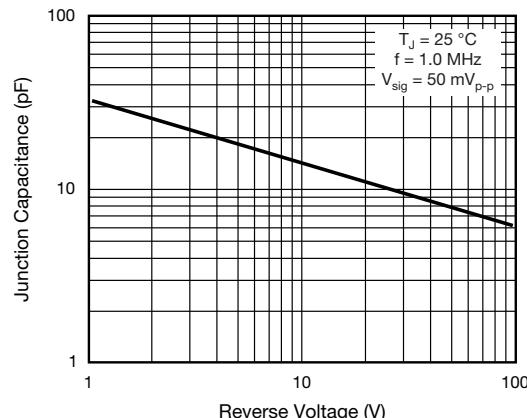


Fig. 5 - Typical Junction Capacitance

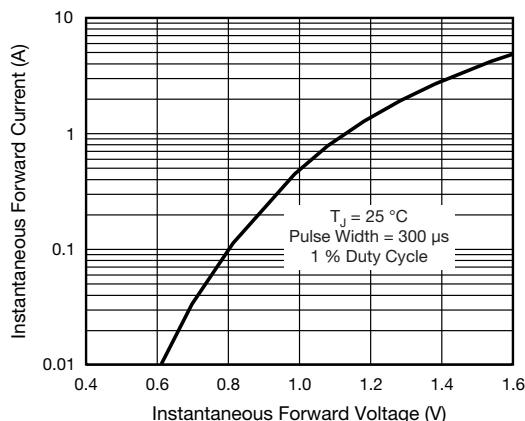


Fig. 3 - Typical Instantaneous Forward Characteristics

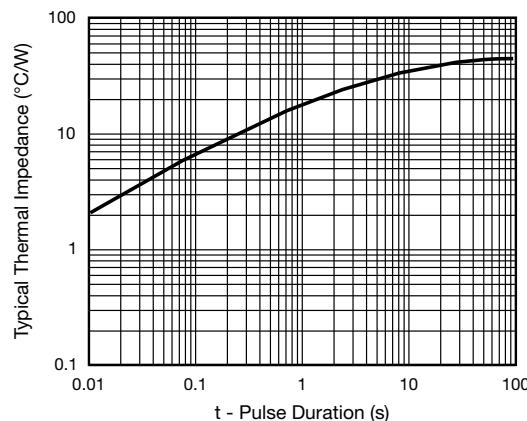
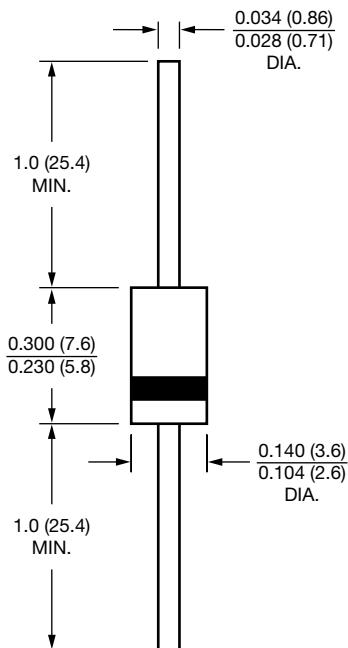


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)**DO-15 (DO-204AC)**

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