

Glass Passivated Junction Rectifier



FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current
- 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



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
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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	200 V to 800 V
I_{FSM}	50 A
I_R	5.0 μ A
V_F	1.2 V
T_J max.	175 °C

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER		SYMBOL	1N5059GP	1N5060GP	1N5061GP	1N5062GP	UNIT
Maximum repetitive peak reverse voltage		V _{RRM} ⁽¹⁾	200	400	600	800	V
Maximum RMS voltage		V _{RMS}	140	280	420	560	V
Maximum DC blocking voltage		V _{DC} ⁽¹⁾	200	400	600	800	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T _A = 75 °C		I _{F(AV)} ⁽¹⁾	1.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I _{FSM} ⁽¹⁾	50				A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at	T _A = 25 °C	I _{R(AV)} ⁽¹⁾	5.0				μA
	T _A = 75 °C		150				
Operating junction and storage temperature range		T _J , T _{STG}	- 65 to + 175				°C

Note

⁽¹⁾ JEDEC registered values

1N5059GP thru 1N5062GP

Vishay General Semiconductor



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

PARAMETER	TEST CONDITIONS		SYMBOL	1N5059GP	1N5060GP	1N5061GP	1N5062GP	UNIT
Max. instantaneous forward voltage	1.0 A	T _A = 75 °C	V _F ⁽¹⁾	1.2				V
Maximum DC reverse current at rated DC blocking voltage		T _A = 25 °C	I _R ⁽¹⁾	5.0				μA
		T _A = 175 °C		300				
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	2.0				μs
Typical junction capacitance	4.0 V, 1 MHz		C _J	15				pF

Note

(1) JEDEC registered values

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

PARAMETER	SYMBOL	1N5059GP	1N5060GP	1N5061GP	1N5062GP	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	45				°C/W
	R _{θJL} ⁽¹⁾	20				

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
1N5061GP-E3/54	0.425	54	4000	13" diameter paper tape and reel
1N5061GP-E3/73	0.425	73	2000	Ammo pack packaging
1N5061GPHE3/54 (1)	0.425	54	4000	13" diameter paper tape and reel
1N5061GPHE3/73 (1)	0.425	73	2000	Ammo pack packaging

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

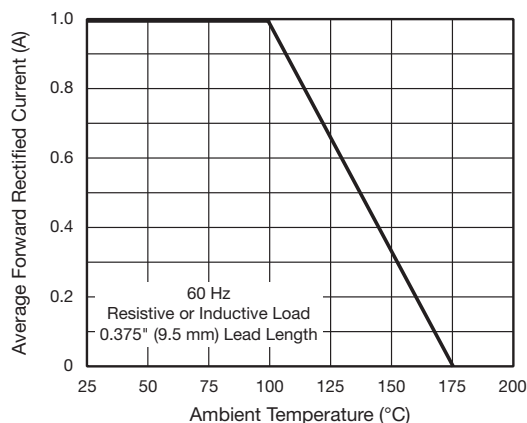


Fig. 1 - Forward Current Derating Curve

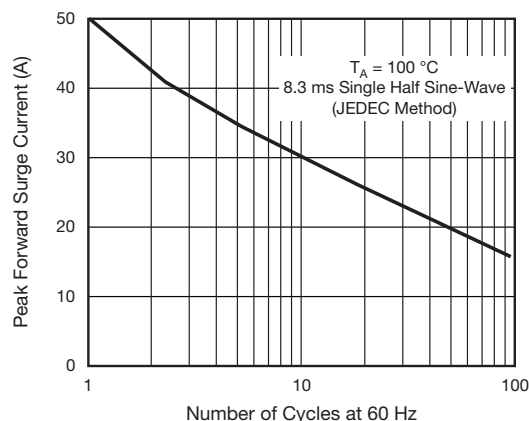


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

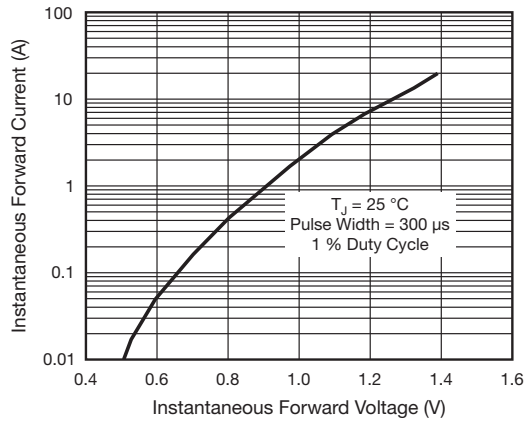


Fig. 3 - Typical Instantaneous Forward Characteristics

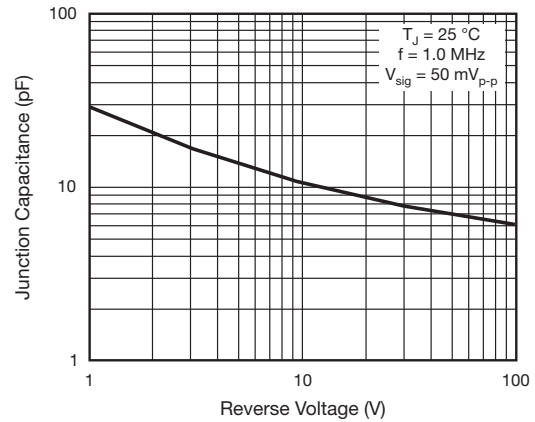


Fig. 5 - Typical Junction Capacitance

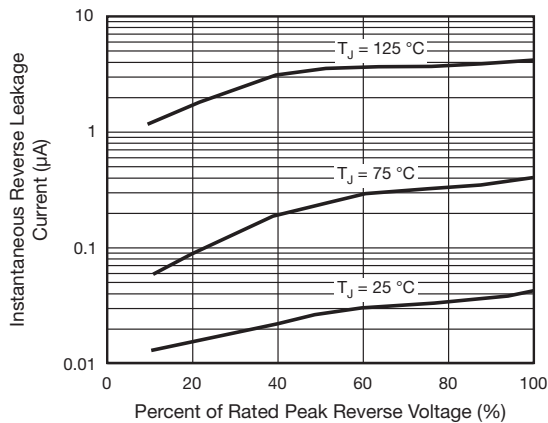


Fig. 4 - Typical Reverse Characteristics

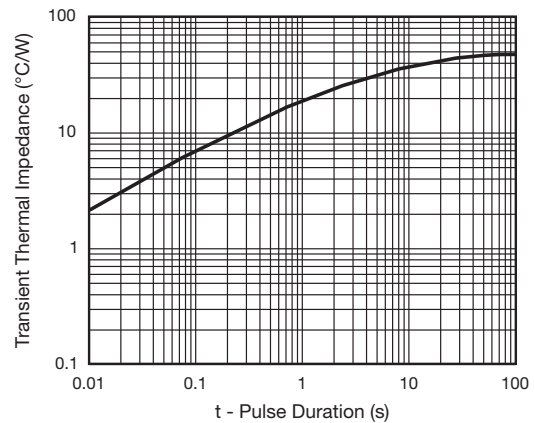
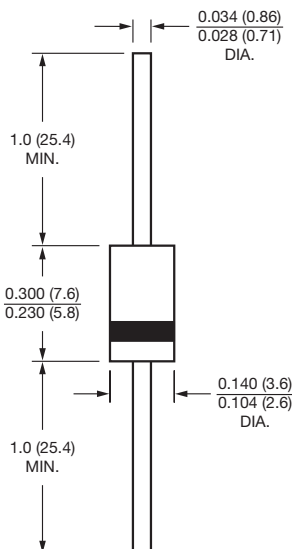


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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