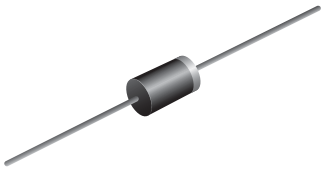
Glass Passivated Junction Rectifier

SUPERECTIFIER®



DO-204AC (DO-15)

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 µA
- 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.

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

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

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNIT
Maximum repetitive peak reverse voltage	V_{RRM} (1)	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC} (1)	200	400	600	800	1000	V
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} (1)	50					A
Operating junction and storage temperature range	T_J, T_{STG} (1)	- 65 to + 175					°C

Note
(1) JEDEC registered values

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

Note

(1) JEDEC registered values

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**1N5614GP**	**1N5616GP**	**1N5618GP**	**1N5620GP**	**1N5622GP**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	45					°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 (1)	0.425	54	4000	13" diameter paper tape and reel
1N5618GPHE3/73 (1)	0.425	73	2000	Ammo pack packaging

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

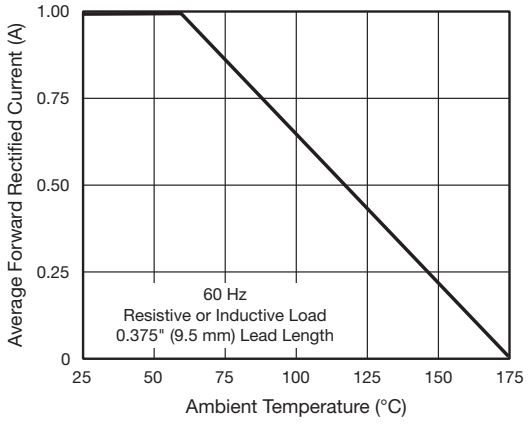

Fig. 1 - Forward Current Derating Curve

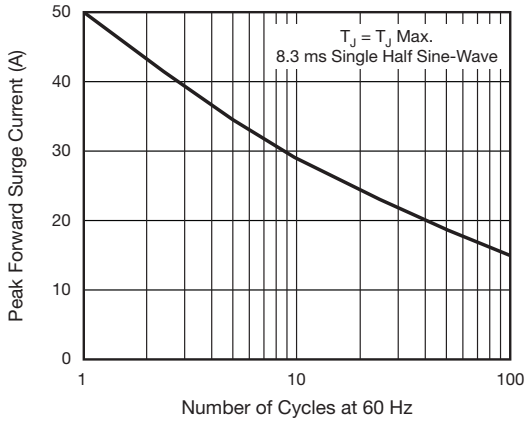

Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

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Document Number: 88520
Revision: 15-Mar-11

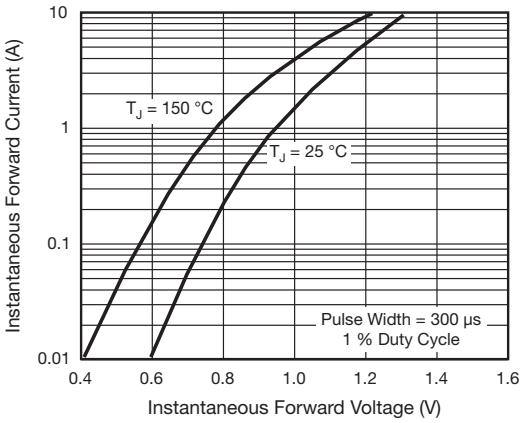


Fig. 3 - Typical Instantaneous Forward Characteristics

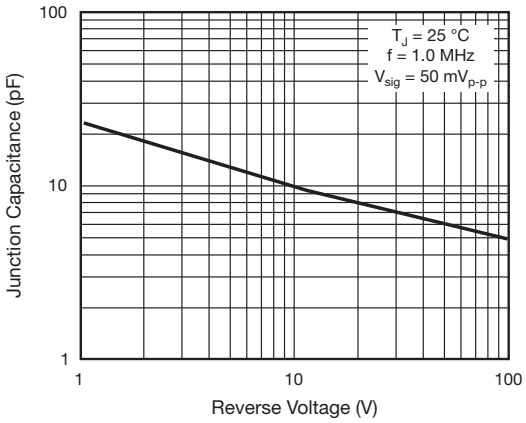


Fig. 5 - Typical Junction Capacitance

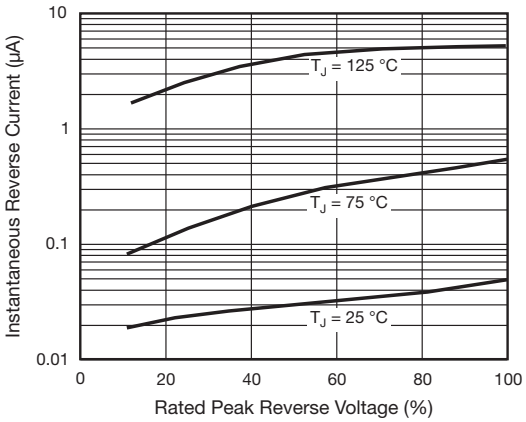
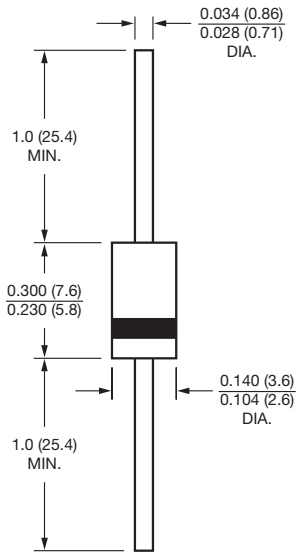


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



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