

Glass Passivated Junction Plastic Rectifier



FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Low leakage current, typical I_R less than $0.1 \mu\text{A}$
- Low forward voltage drop
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275°C max. 10 s, per JESD 22-B102
- 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 high voltage rectification of power supply, inverters, converters, freewheeling diodes and snubber circuit application.

MECHANICAL DATA

Case: DO-201AD, 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	
$I_{F(AV)}$	3.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	125 A
I_R	$5.0 \mu\text{A}$
V_F	1.2 V, 1.1 V
T_J max.	175°C

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55^\circ\text{C}$	$I_{F(AV)}$	3.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	125							A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 55^\circ\text{C}$	$I_{R(AV)}$	100							μA
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175							$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	UNIT
Maximum instantaneous forward voltage	3.0 A	V_F	1.2				1.1			V
Maximum reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	I_R					5.0			μA
	$T_A = 125\text{ }^\circ\text{C}$						100			
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ V}$, $I_{rr} = 0.25\text{ A}$	t_{rr}					5.0			μs
Typical junction capacitance	4.0 V, 1 MHz	C_J					40			pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	UNIT	
Typical thermal resistance	$R_{\theta JA}^{(1)}$						20		$^\circ\text{C/W}$	
	$R_{\theta JL}^{(1)}$						10			

Note

(1) Thermal resistance from junction to ambient and from junction to lead 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
GP30J-E3/54	1.28	54	1400	13" diameter paper tape and reel
GP30J-E3/73	1.28	73	1000	Ammo pack packaging
GP30JHE3/54 ⁽¹⁾	1.28	54	1400	13" diameter paper tape and reel
GP30JHE3/73 ⁽¹⁾	1.28	73	1000	Ammo pack packaging

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

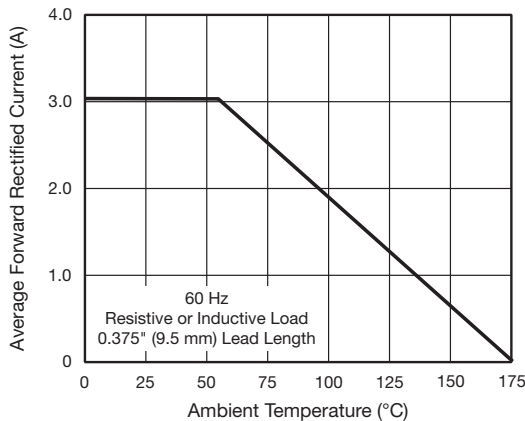


Fig. 1 - Forward Current Derating Curve

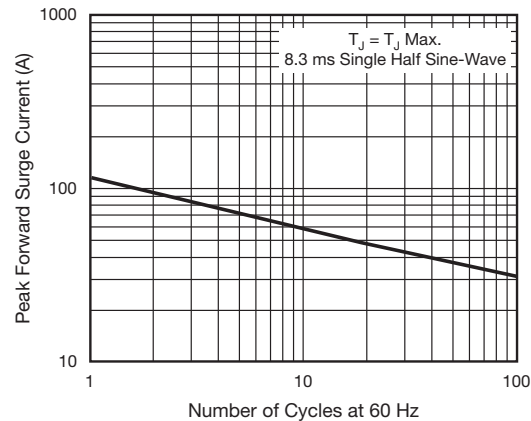


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

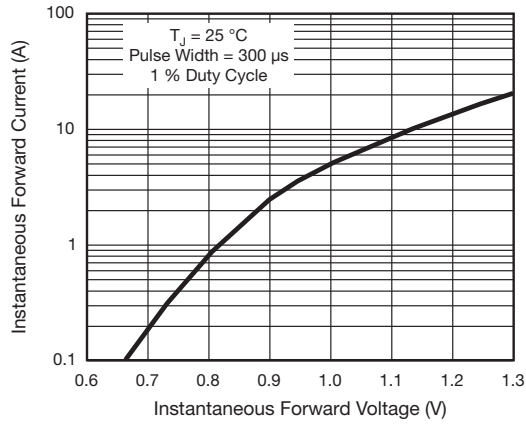


Fig. 3 - Typical Instantaneous Forward Characteristics

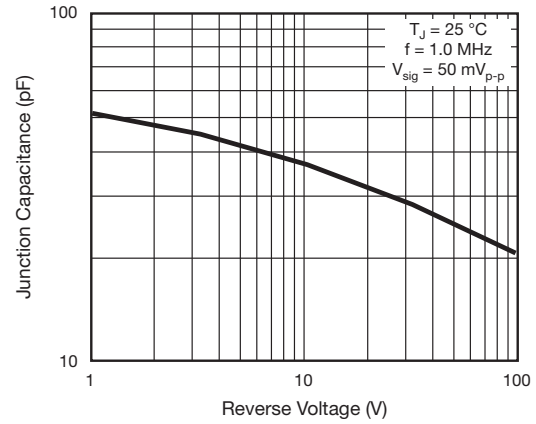


Fig. 5 - Typical Junction Capacitance

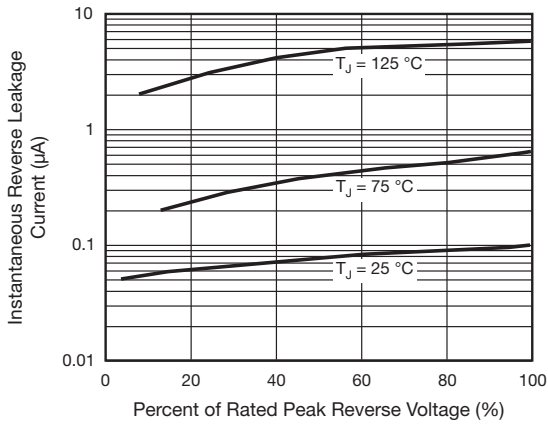
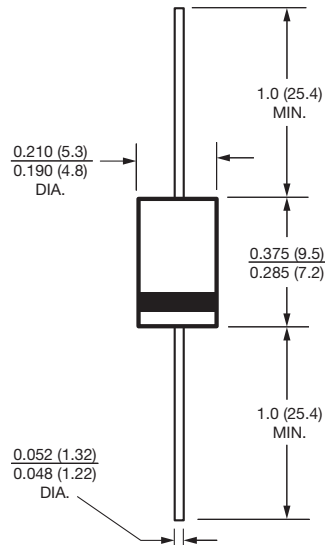


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD





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