

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 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

MECHANICAL DATA

Case: DO-204AL, molded epoxy over glass body
Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 1600 V
I_{FSM}	30 A, 25 A
I_R	5.0 μ A
V_F	1.1 V, 1.2 V, 1.3 V
T_j max.	175 °C

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)																
PARAMETER	SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	50 to 1600 V (see Fig. 5)														V
Maximum average forward rectified current 0.375" (9.5 mm) lead length (see Fig. 1)	I _{F(AV)}	1.0														A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30								25						A
Maximum full load reverse current, full cycle average, 0.375" (9.5 mm) lead lengths at T _A = 75 °C	I _{R(AV)}	30														μA
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to + 175								- 65 to + 150						°C

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

PARAMETER	TEST CONDITIONS	SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT
Maximum instantaneous forward voltage	at 1.0 A	V _F	1.1					1.2				1.3			V	
Maximum DC reverse current at rated DC blocking voltage	T _A = 25 °C T _A = 125 °C	I _R	5.0 50										μA			
Typical reverse recovery time	at I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	3.0										μs			
Typical junction capacitance	at 4.0 V, 1 MHz	C _J	8.0					7.0				5.0			pF	

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

PARAMETER	SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	55													$^{\circ}\text{C/W}$

Note:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP10J-E3/54	0.335	54	5500	13" Diameter Paper Tape & Reel
GP10J-E3/73	0.335	73	3000	Ammo Pack Packaging

RATINGS AND CHARACTERISTICS CURVES

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

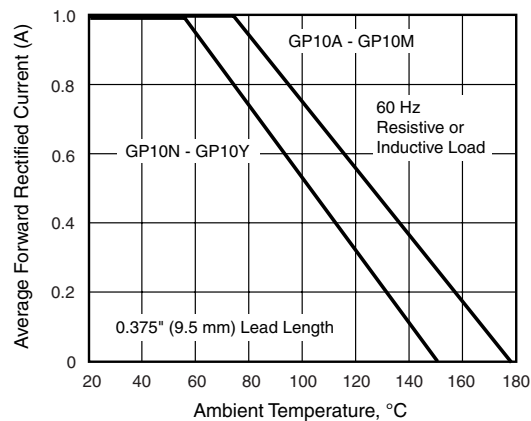


Figure 1. Forward Current Derating Curve

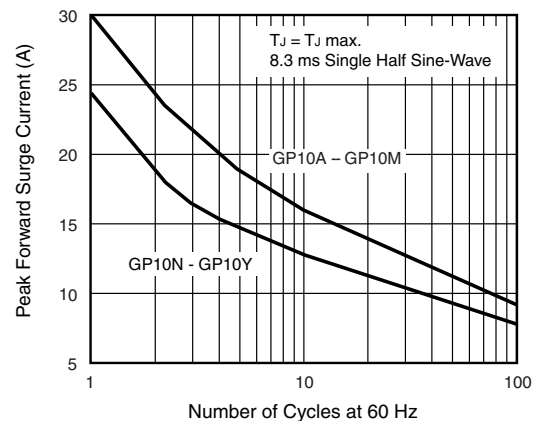


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

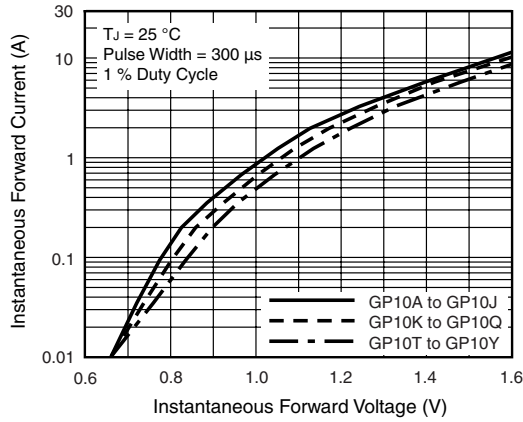


Figure 3. Typical Instantaneous Forward Characteristics

GP10A.....	50 V
GP10B.....	100 V
GP10D.....	200 V
GP10G.....	400 V
GP10J.....	600 V
GP10K.....	800 V
GP10M.....	1000 V
GP10N.....	1100 V
GP10Q.....	1200 V
GP10T.....	1300 V
GP10V.....	1400 V
GP10W.....	1500 V
GP10Y.....	1600 V

Figure 5. Maximum Repetitive Peak Reverse Voltage, V_{RRM}

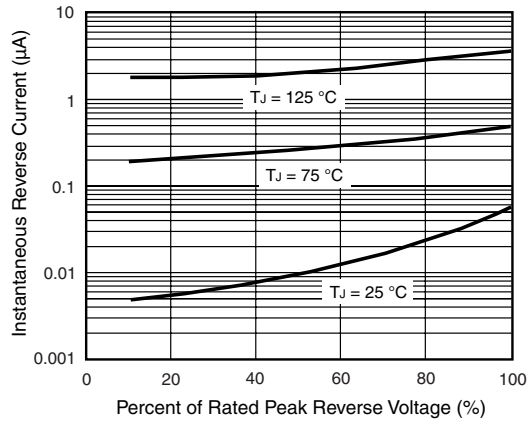


Figure 4. Typical Reverse Characteristics

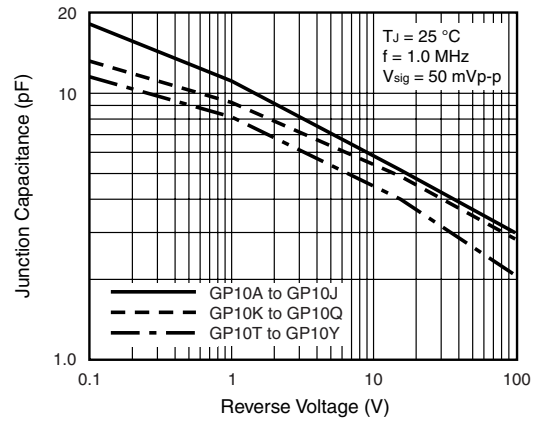
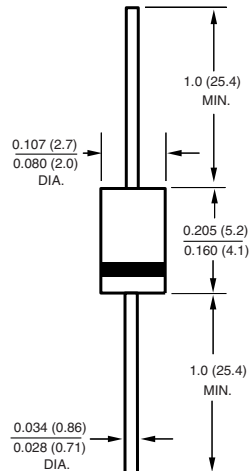


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



NOTE: Lead diameter is 0.026 (0.66) / 0.023 (0.58) for suffix "E" part numbers



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