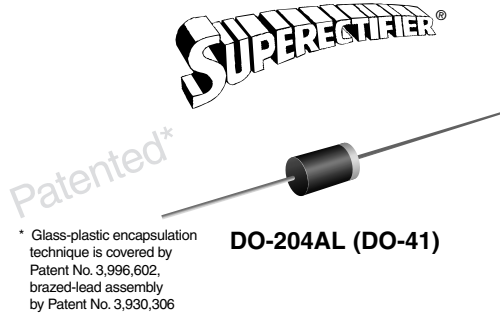


## Glass Passivated Junction Rectifier



### FEATURES

- Superrectifier 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 $\mu$ 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												$\mu$ A	
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175						- 65 to + 150						°C	

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$	$I_R$				5.0			50						$\mu\text{A}$	
Typical reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$				3.0									$\mu\text{s}$	
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$	8.0			7.0			5.0						pF	

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)															
PARAMETER	SYMBOL	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$				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

<b>ORDERING INFORMATION</b>				
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)

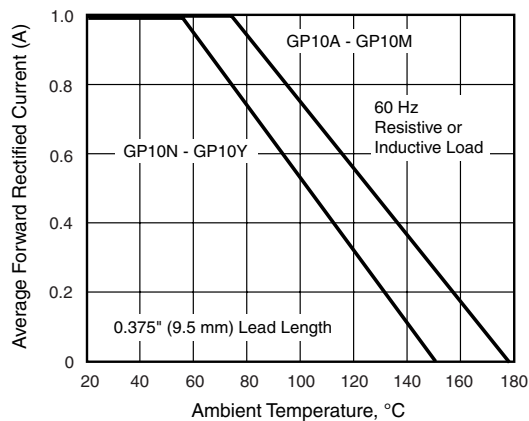


Figure 1. Forward Current Derating Curve

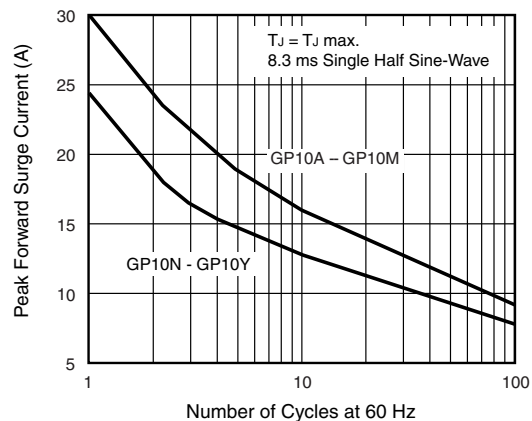


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

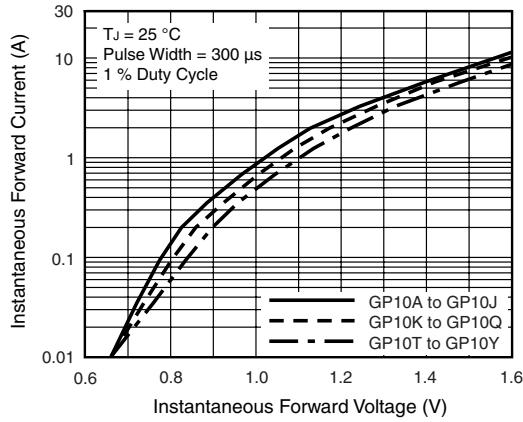


Figure 3. Typical Instantaneous Forward Characteristics

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,  $V_{RRM}$

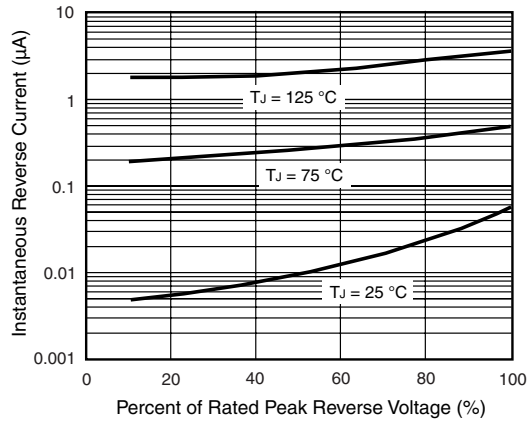


Figure 4. Typical Reverse Characteristics

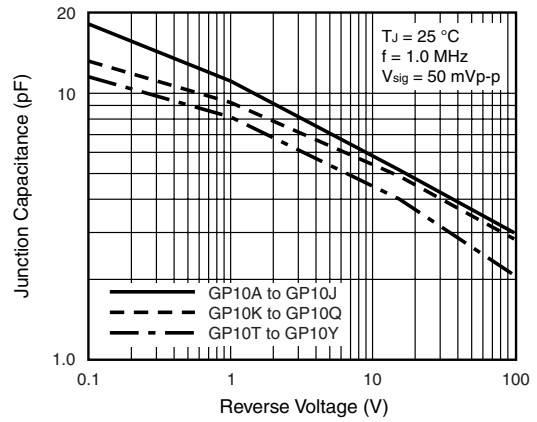
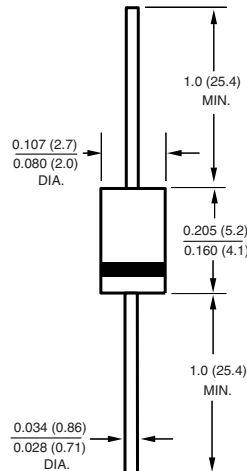


Figure 6. Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AL (DO-41)



NOTE: Lead diameter is  $\frac{0.026 (0.66)}{0.023 (0.58)}$  for suffix "E" part numbers



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