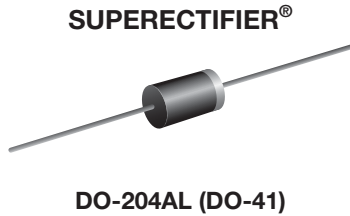


## Glass Passivated Junction Rectifier



### 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 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

### PRIMARY 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

### 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  
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	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNIT		
Maximum repetitive peak reverse voltage	$V_{RRM}$	50 to 1600 (fig. 5)													V		
Maximum average forward rectified current 0.375" (9.5 mm) lead length (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 length 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

# GP10A thru GP10Y

Vishay General Semiconductor



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	1.0 A	$V_F$	1.1			1.2			1.3						V	
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	5.0												$\mu\text{A}$	
	$T_A = 125\text{ }^\circ\text{C}$		50													
Typical reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	3.0												$\mu\text{s}$	
Typical junction capacitance	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	$R_{\theta JA}^{(1)}$	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 (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP10J-E3/54	0.335	54	5500	13" diameter paper tape and reel
GP10J-E3/73	0.335	73	3000	Ammo pack packaging
GP10JHE3/54 (1)	0.335	54	5500	13" diameter paper tape and reel
GP10JHE3/73 (1)	0.335	73	3000	Ammo pack packaging

**Note**

(1) AEC-Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

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

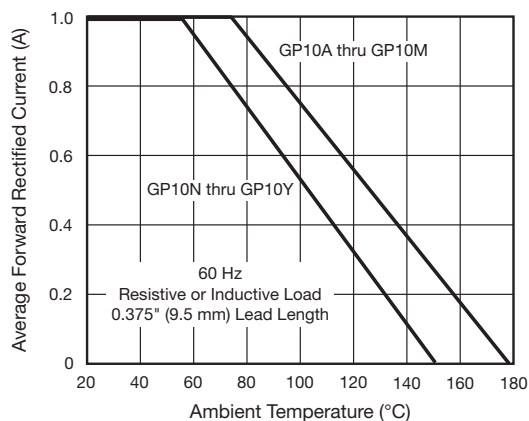


Fig. 1 - Forward Current Derating Curve

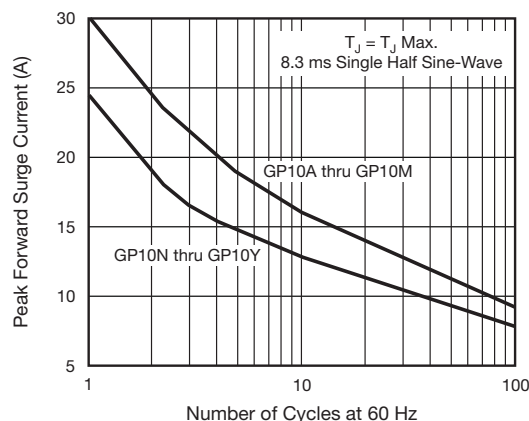


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

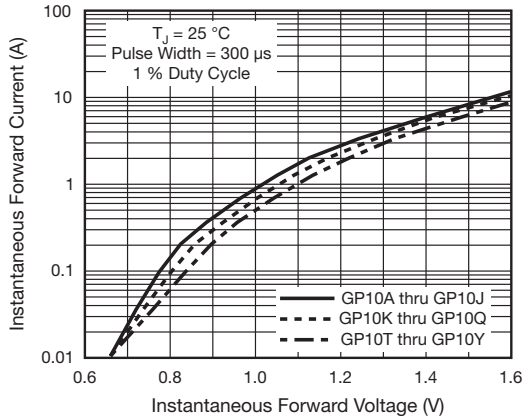


Fig. 3 - Typical Instantaneous Forward Characteristics

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

Fig. 5 - Maximum Repetitive Peak Reverse Voltage,  $V_{RRM}$

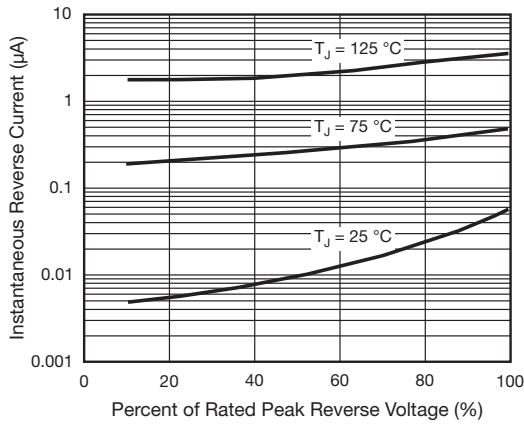


Fig. 4 - Typical Reverse Characteristics

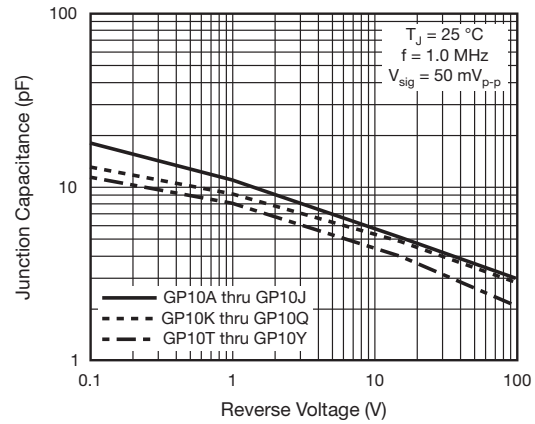
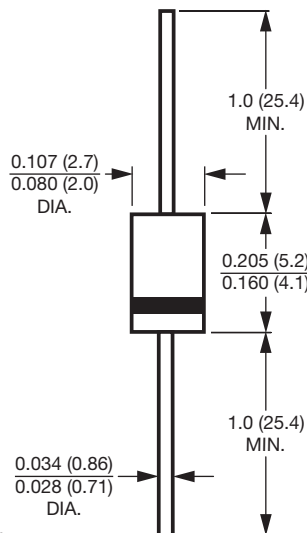


Fig. 6 - Typical Junction Capacitance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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



**Note**

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



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