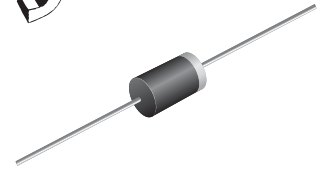




## Glass Passivated Junction Fast Switching Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	3.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	125 A
$t_{rr}$	150 ns, 250 ns, 500 ns
$I_R$	5.0 $\mu$ A
$V_F$	1.3 V
$T_j$ max.	175 °C



DO-201AD

Patented\*

\* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

### Features

- Superrectifier structure for High Reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current, typical  $I_R$  less than 0.2  $\mu$ A
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-201AD, 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

### Typical Applications

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer, automotive and Telecommunication

### Maximum Ratings

( $T_A = 25$  °C unless otherwise noted)

Parameter	Symbol	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	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 $T_A = 55$ °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 $T_A = 55$ °C	$I_{R(AV)}$	100							$\mu$ A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175							°C

## Electrical Characteristics

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

Parameter	Test condition	Symbol	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	Unit
Maximum instantaneous forward voltage	at 3.0 A	$V_F$	1.3							V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$	$I_R$	5.0 100							$\mu\text{A}$
Maximum reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{rr} = 0.25\text{ A}$	$t_{rr}$	150					250	500	ns
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$	60							pF

## Thermal Characteristics

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

Parameter	Symbol	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	20							$^\circ\text{C/W}$

Notes:

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

## Ratings and Characteristics Curves

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

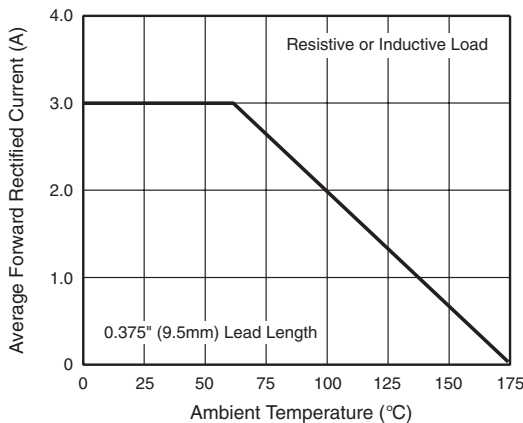


Figure 1. Forward Current Derating Curve

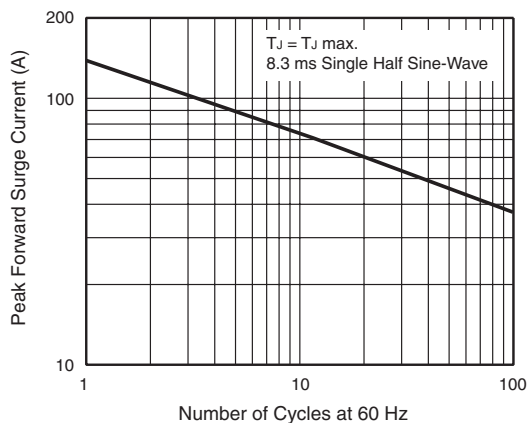


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

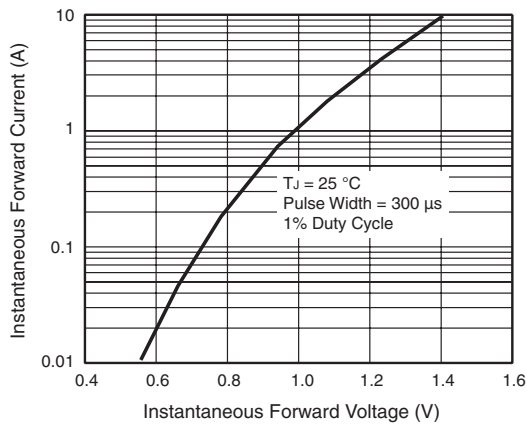


Figure 3. Typical Instantaneous Forward Characteristics

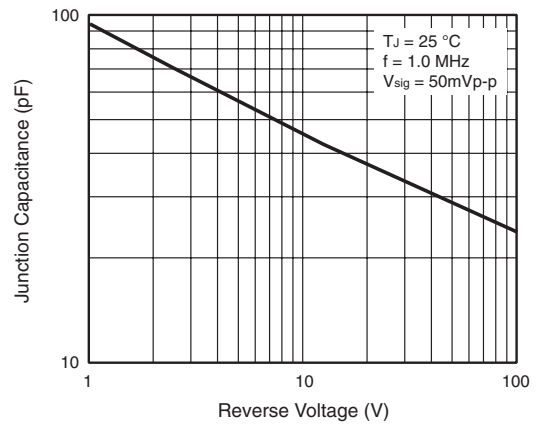


Figure 5. Typical Junction Capacitance

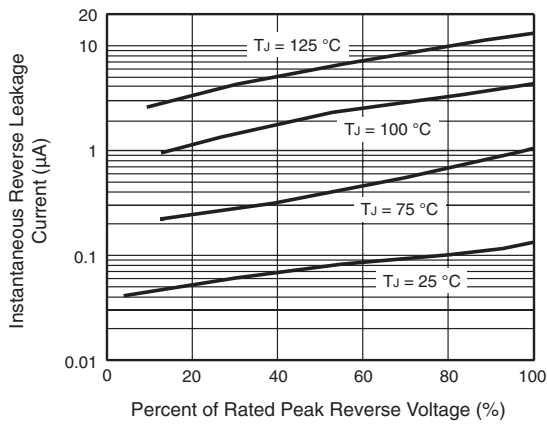
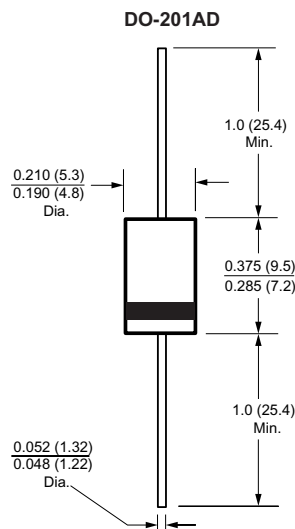


Figure 4. Typical Reverse Characteristics

## Package outline dimensions in inches (millimeters)





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