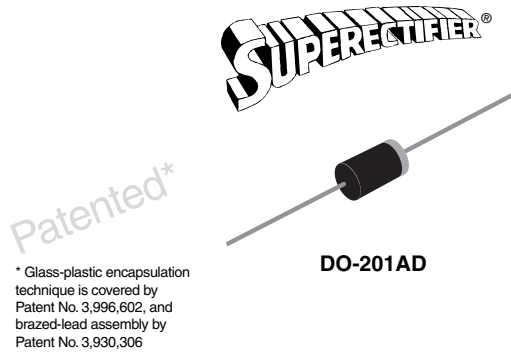


## Glass Passivated Junction Fast Switching Rectifier



### 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  $\mu\text{A}$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### TYPICAL APPLICATIONS

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

### 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-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC-Q101 qualified), 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
$V_F$	1.3 V
$I_R$	5.0 $\mu\text{A}$
$T_J$ max.	175 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_A = 55\text{ °C}$	$I_{F(AV)}$	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 $T_A = 55\text{ °C}$	$I_{R(AV)}$	100							$\mu\text{A}$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175							°C



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT
Maximum instantaneous forward voltage	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	4.0 V, 1 MHz		$C_J$	60						pF	

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT	
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	20						$^\circ\text{C/W}$		

**Note:**

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

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
RGP30J-E3/54	1.28	54	1400	13" diameter paper tape and reel
RGP30J-E3/73	1.28	73	1000	Ammo pack packaging
RGP30JHE3/54 <sup>(1)</sup>	1.28	54	1400	13" diameter paper tape and reel
RGP30JHE3/73 <sup>(1)</sup>	1.28	73	1000	Ammo pack packaging

**Note:**

(1) Automotive grade AEC-Q101 qualified

### RATINGS AND CHARACTERISTICS CURVES

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

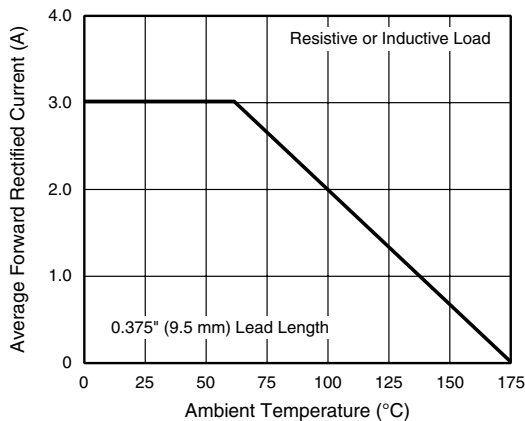


Figure 1. Forward Current Derating Curve

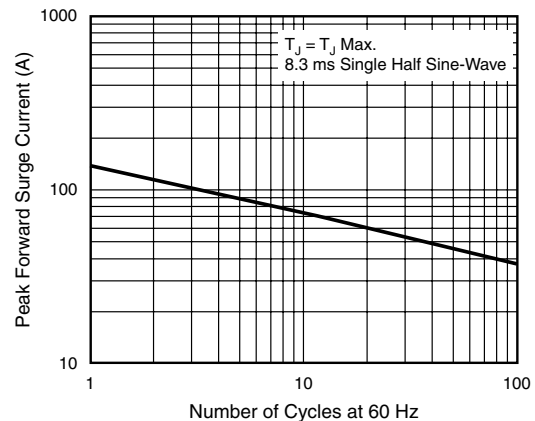


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

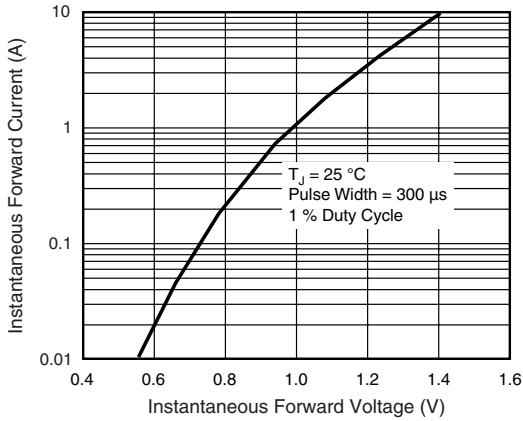


Figure 3. Typical Instantaneous Forward Characteristics

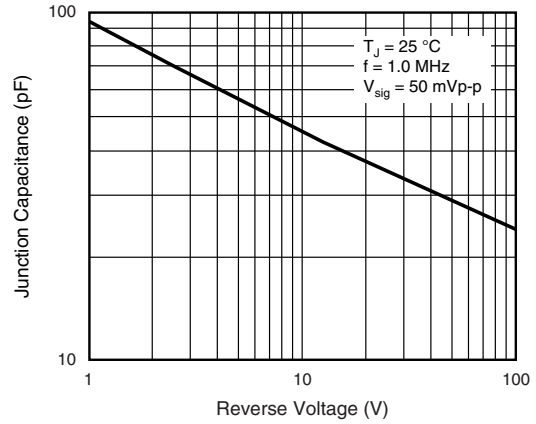


Figure 5. Typical Junction Capacitance

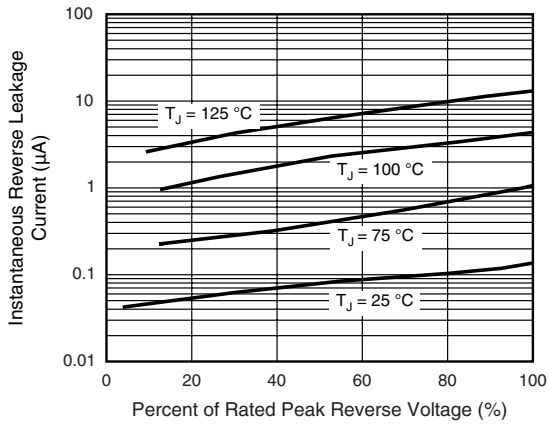
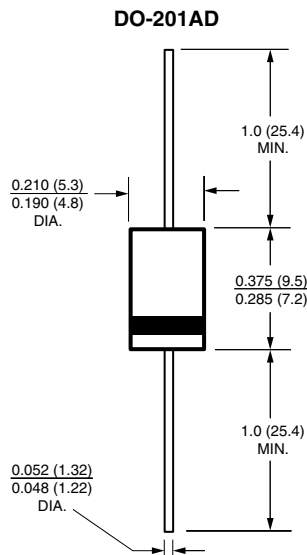


Figure 4. Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





## Disclaimer

All product specifications and data are subject to change without notice.

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