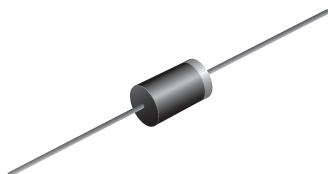




## Glass Passivated Junction Plastic Rectifier

SUPERECTIFIER®



DO-201AD

### FEATURES

- Superectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Low leakage current, typical  $I_R$  less than 0.1  $\mu A$
- Low forward voltage drop
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### TYPICAL APPLICATIONS

For use in high voltage rectification of power supply, inverters, converters, freewheeling diodes, and snubber circuit application.

### MECHANICAL DATA

**Case:** DO-201AD, molded epoxy over glass body  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** color band denotes cathode end

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	3.0 A
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	125 A
$I_R$	5.0 $\mu A$
$V_F$	1.2 V, 1.1 V
$T_J$ max.	175 °C
Package	DO-201AD
Circuit configuration	Single

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	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 CONDITIONS		SYMBOL	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	UNIT
Maximum instantaneous forward voltage	3.0 A		V <sub>F</sub>	1.2		1.1					V
Maximum reverse current at rated DC blocking voltage		T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0							μA
		T <sub>A</sub> = 125 °C		100							
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 V, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	5.0							μs
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	40							pF

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

PARAMETER	SYMBOL	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	20							°C/W
	$R_{\theta JL}^{(1)}$	10							

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP30J-E3/54	1.28	54	1400	13" diameter paper tape and reel
GP30J-E3/73	1.28	73	1000	Ammo pack packaging

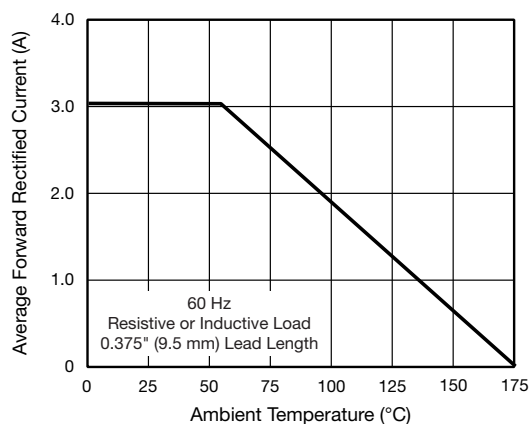
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

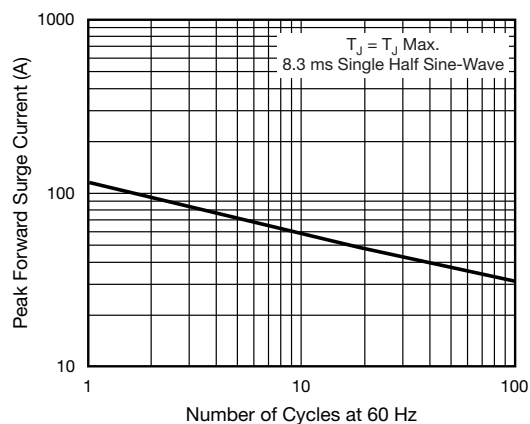


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

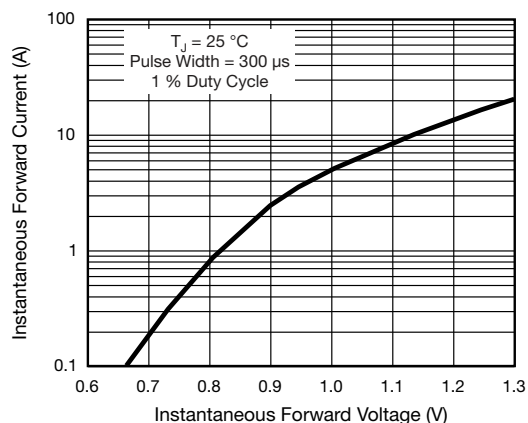


Fig. 3 - Typical Instantaneous Forward Characteristics

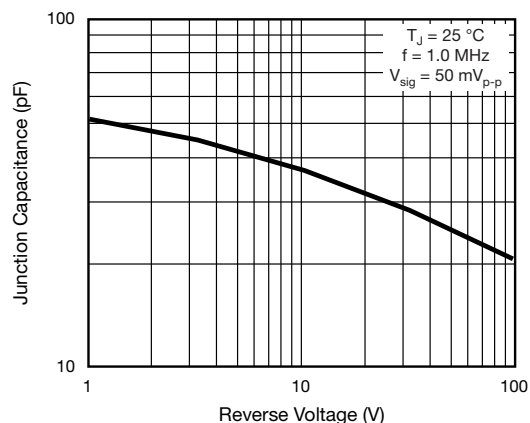


Fig. 5 - Typical Junction Capacitance

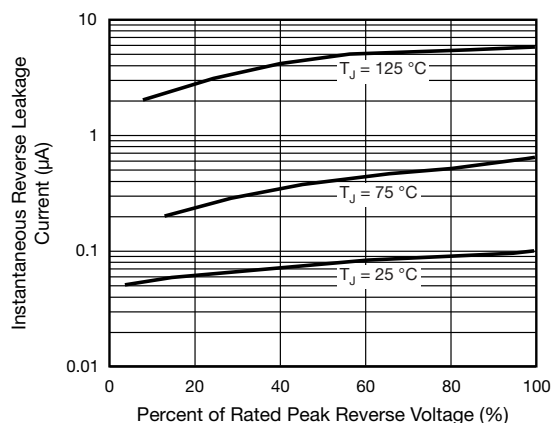
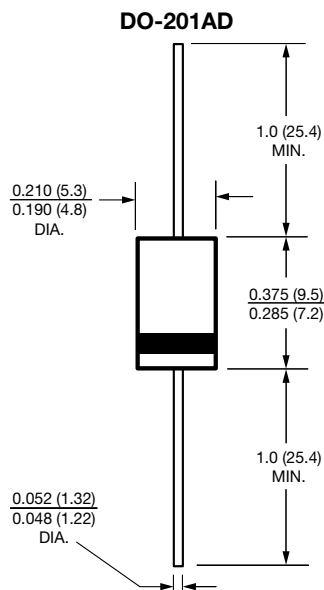


Fig. 4 - Typical Reverse Characteristics

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



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