

## Clamper/Damper Glass Passivated Rectifier



### FEATURES

- Superelectifier structure
- Cavity-free glass passivated junction
- Low forward voltage drop
- Typical  $I_R$  less than 0.1  $\mu A$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high voltage rectification of power supplies, inverters, converters and freewheeling diodes specially designed for clamping circuits, horizontal deflection systems and damper applications.

### 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
$V_{RRM}$	1400 V, 1500 V
$I_{FSM}$	100 A
$I_R$	5.0 $\mu A$
$V_F$	1.2 V
$T_J$ max.	175 °C

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

PARAMETER	SYMBOL	CGP30	DGP30	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	1400	1500	V
Maximum RMS voltage	$V_{RMS}$	980	1050	V
Maximum DC blocking voltage	$V_{DC}$	1400	1500	V
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at $T_A = 50$ °C	$I_{F(AV)}$	3.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	100		A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 70$ °C	$I_{R(AV)}$	200		$\mu A$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175		°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	CGP30	DGP30	UNIT
Maximum instantaneous forward voltage	I <sub>F</sub> = 3.0 A		V <sub>F</sub> <sup>(1)</sup>	1.2		V
Maximum reverse current	Rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0		μA
		T <sub>A</sub> = 100 °C		100		
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 50 mA		t <sub>rr</sub>	15	20	μs
Reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	Typical	t <sub>rr</sub>	1.0		μs
		Maximum		2.0		
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	40		pF

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	CGP30	DGP30	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	20		$^{\circ}\text{C/W}$

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, with leads attached to heat sink

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
CGP30-E3/54	1.28	54	1400	13" diameter paper tape and reel
CGP30-E3/73	1.28	73	1000	Ammo pack packaging

**RATINGS AND CHARACTERISTICS CURVES**

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

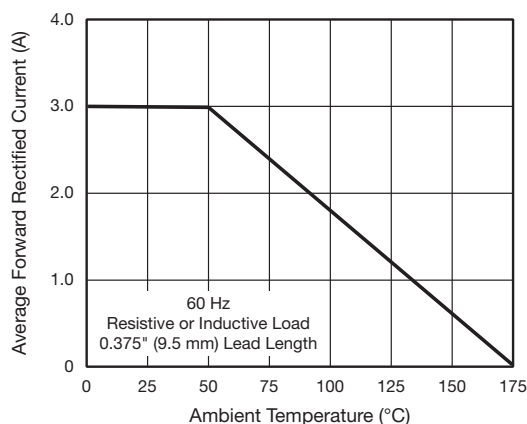


Fig. 1 - Forward Current Derating Curve

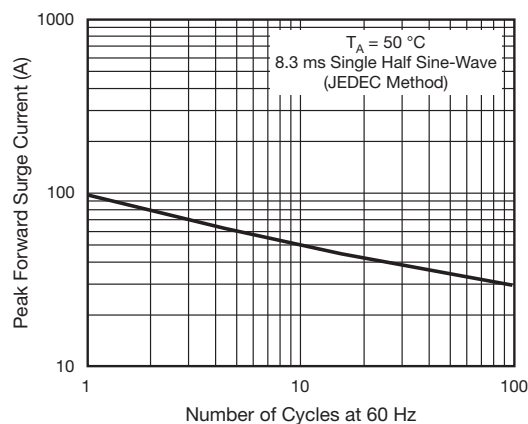


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

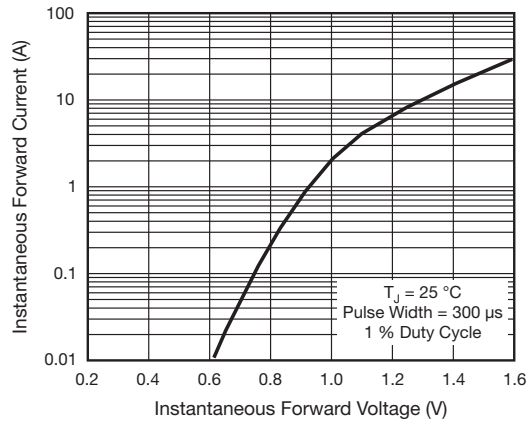


Fig. 3 - Typical Instantaneous Forward Characteristics

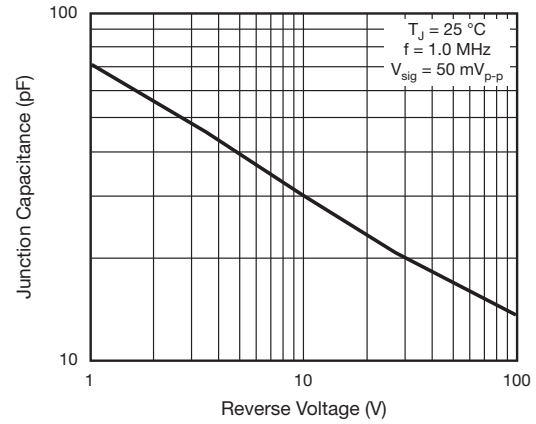


Fig. 5 - Typical Junction Capacitance

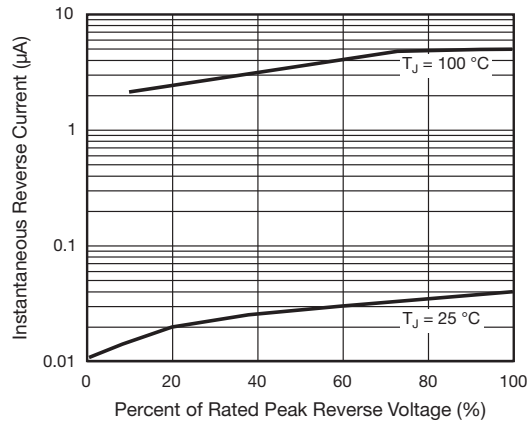
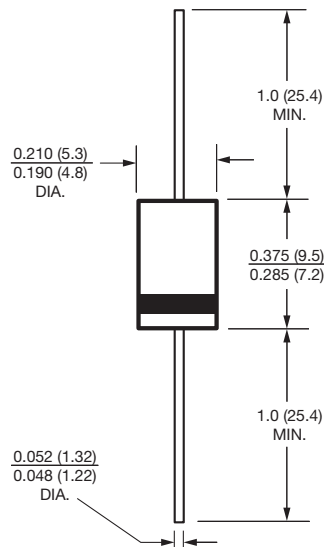


Fig. 4 - Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-201AD





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