RoHS



# Vishay General Semiconductor

# Clamper/Damper Glass Passivated Plastic Rectifier



PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	3.0 A				
$V_{RRM}$	1400 V, 1500 V				
I <sub>FSM</sub>	100 A				
I <sub>R</sub>	5.0 μA				
$V_{F}$	1.2 V				
$T_J$ max.	175 °C				
Package	DO-201AD				
Diode variations	Single die				

#### **FEATURES**

- Superectifier structure
- · Cavity-free glass passivated junction
- Low forward voltage drop
- Typical I<sub>R</sub> less than 0.1 μA
- · High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see <a href="https://www.vishav.com/doc?99912">www.vishav.com/doc?99912</a>

#### **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

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	CGP30	DGP30	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	1400	1500	V	
Maximum RMS voltage	V <sub>RMS</sub>	980	1050	V	
Maximum DC blocking voltage	V <sub>DC</sub>	1400	1500	V	
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at $T_A = 50$ °C	I <sub>F(AV)</sub>	3.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100		А	
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 70  ^{\circ}\text{C}$	I <sub>R(AV)</sub>	200		μА	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to	°C		



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<b>ELECTRICAL CHARACTERISTICS</b> (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>	T <sub>A</sub> = 100 °C		100		•
Maximum reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 50 \text{ mA}$		t <sub>rr</sub>	15	20	μs
Reverse recovery time	IF = 0.5 A, IR = 1.0 A,	Typical	+	1.0		- µs
		Maximum	t <sub>rr</sub>	2.0		
Typical junction capacitance	4.0 V, 1 MHz		CJ	40		pF

#### Note

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	CGP30	DGP30	UNIT
Typical thermal resistance	R <sub>0JA</sub> (1)	20		°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

ORDERING INFORMATION (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<sub>A</sub> = 25 °C unless otherwise noted)

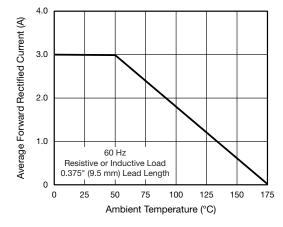


Fig. 1 - Forward Current Derating Curve

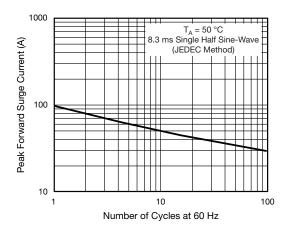


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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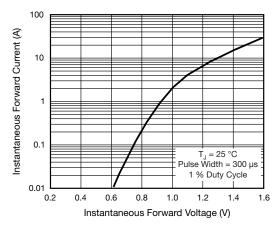


Fig. 3 - Typical Instantaneous Forward Characteristics

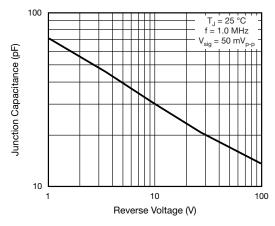


Fig. 5 - Typical Junction Capacitance

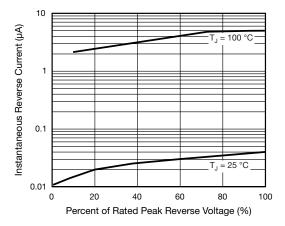
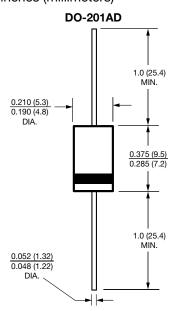


Fig. 4 - Typical Reverse Characteristics

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





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