

Vishay General Semiconductor

Clamper/Damper Glass Passivated Rectifier



PRIMARY CHARACTERISTICS					
I _{F(AV)}	3.0 A				
V _{RRM}	1400 V, 1500 V				
I _{FSM}	100 A				
I _R	5.0 μA				
V _F	1.2 V				
T _J max.	175 °C				

FEATURES

- Superectifier structure
- · Cavity-free glass passivated junction
- Low forward voltage drop
- Typical I_R less than 0.1 μA
- · 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

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 _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 $T_A = 50 ^{\circ}\text{C}$	I _{F(AV)}	3.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100		А	
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 70$ °C	I _{R(AV)}	200		μА	
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to	°C		

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	CGP30	DGP30	UNIT
Maximum instantaneous forward voltage	I _F = 3.0 A		V _F ⁽¹⁾	1.2		V
Maximum reverse current	Rated V _R	T _A = 25 °C	5.0		0	μА
	Raied V _R	T _A = 100 °C	I _R	100		
Maximum reverse recovery time	I _F = 0.5 A, I _R = 50 mA		t _{rr}	15	20	μs
Reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	Typical	+	1.0		- μs
		Maximum	t _{rr}	2.0		
Typical junction capacitance	4.0 V, 1 MHz		CJ	40		pF

Note

 $^{^{(1)}\,}$ Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	CGP30	DGP30	UNIT	
Typical thermal resistance	R _{0JA} (1)	20		°C/W	

Note

⁽¹⁾ 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)	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

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

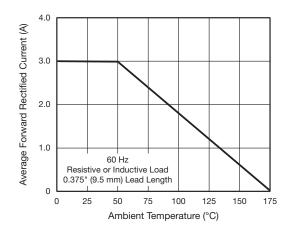


Fig. 1 - Forward Current Derating Curve

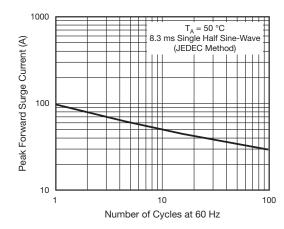


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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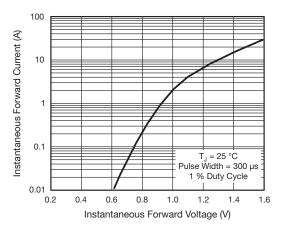


Fig. 3 - Typical Instantaneous Forward Characteristics

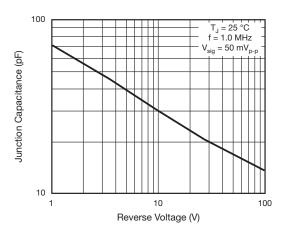


Fig. 5 - Typical Junction Capacitance

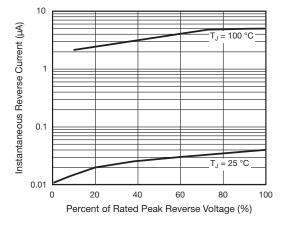
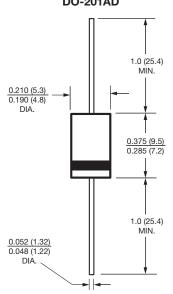


Fig. 4 - Typical Reverse Characteristics

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



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