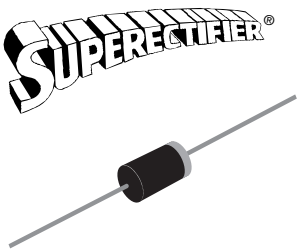
Clamper/Damper Glass Passivated Rectifier



Patented*

DO-201AD

* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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

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

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 µA
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		µA
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175		°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**CGP30**	**DGP30**	**UNIT**
Maximum instantaneous forward voltage (1)	I_F = 3.0 A		V_F	1.2		V
Maximum reverse current (1)	rated V_R	T_A = 25 °C T_A = 100 °C	I_R	5.0 100		µA
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 maximum	t_{rr}	1.0 2.0		µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	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 (1)	$R_{\theta JA}$	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)**	**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 °C unless otherwise noted)

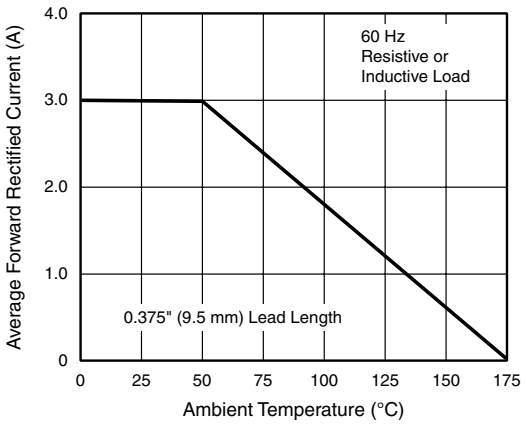


Figure 1. Forward Current Derating Curve

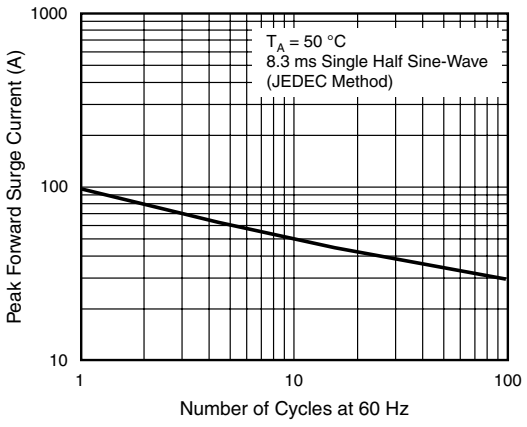


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

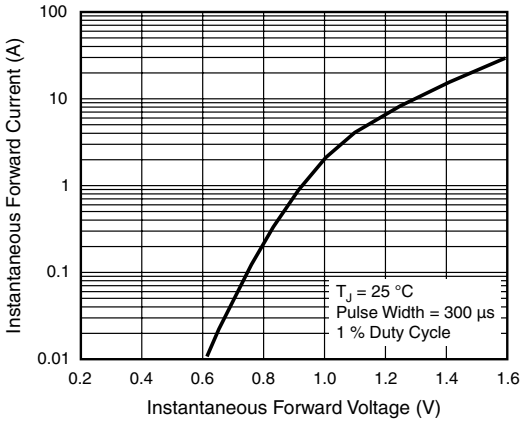


Figure 3. Typical Instantaneous Forward Characteristics

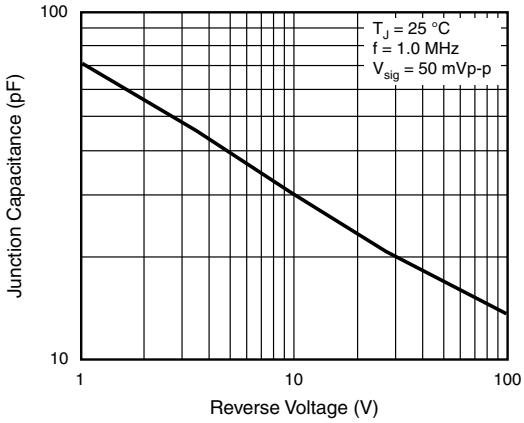


Figure 5. Typical Junction Capacitance

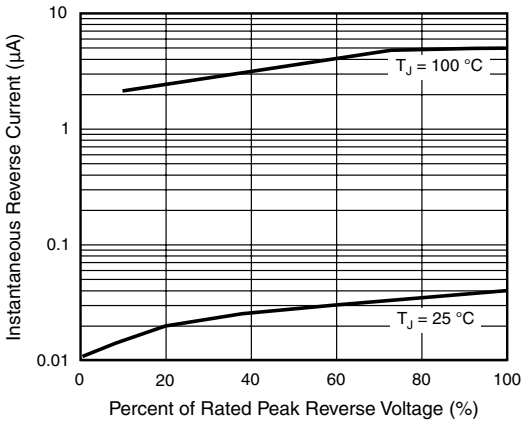
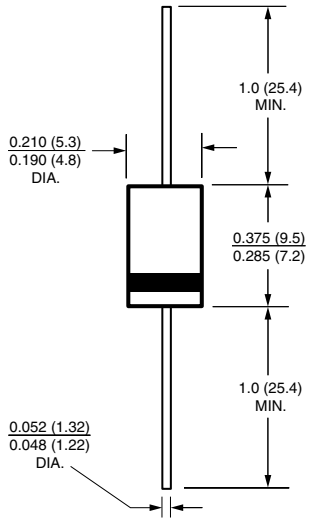


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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