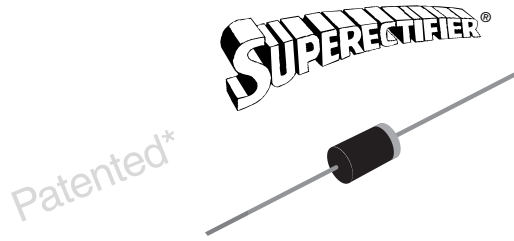


## Miniature Clamper/Damper Glass Passivated Rectifier


**DO-204AC (DO-15)**

\* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

### FEATURES

- Superrectifier structure
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Typical  $I_R$  less than 0.1  $\mu\text{A}$
- 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-204AC, 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	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	1400 V, 1500 V
$I_{FSM}$	40 A
$I_R$	5.0 $\mu\text{A}$
$V_F$	1.1 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ( $T_A = 25 \text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	CGP20	DGP20	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 length at $T_A = 50 \text{ }^\circ\text{C}$	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	40		A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 100 \text{ }^\circ\text{C}$	$I_{R(AV)}$	200		$\mu\text{A}$
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	CGP20	DGP20	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	$I_F = 2.0\text{ A}$		$V_F$	1.1		V
Maximum reverse current	rated $V_R$	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$	5.0 100		$\mu\text{A}$
Maximum reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 50\text{ mA}$		$t_{rr}$	15	20	$\mu\text{s}$
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	typical maximum	$t_{rr}$	1.0 1.5		$\mu\text{s}$
Typical junction capacitance	4.0 V, 1 MHz		$C_J$	15		pF

**Note:**

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

THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	CGP20	DGP20	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	55		$^\circ\text{C/W}$

**Note:**

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
CGP20-E3/54	0.425	54	4000	13" diameter paper tape and reel
CGP20-E3/73	0.425	73	2000	Ammo pack packaging

## RATINGS AND CHARACTERISTICS CURVES

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

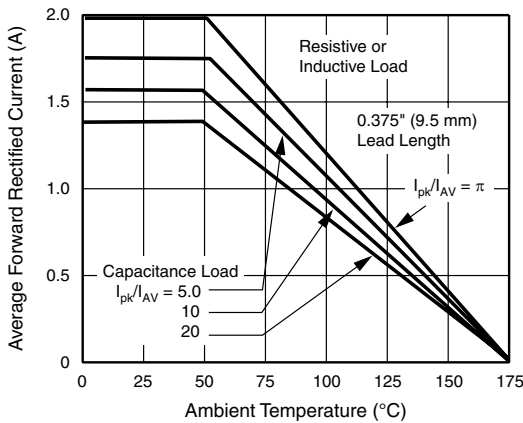


Figure 1. Forward Current Derating Curve

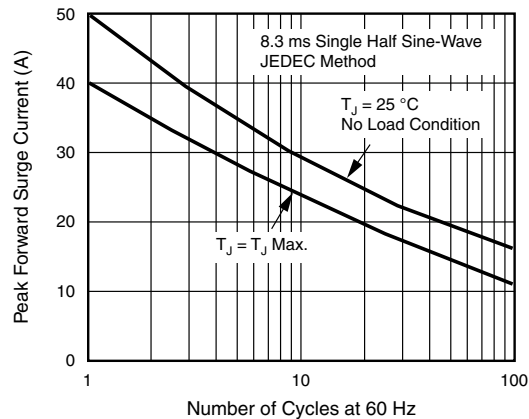


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

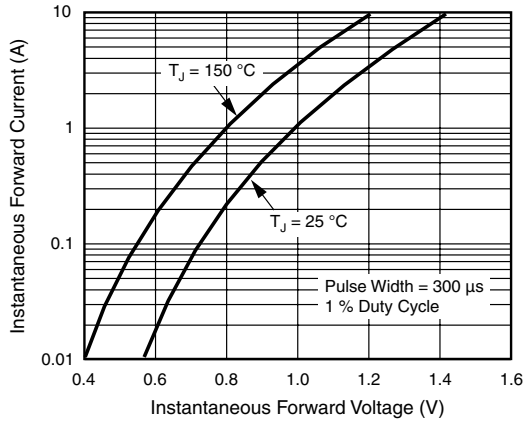


Figure 3. Typical Instantaneous Forward Characteristics

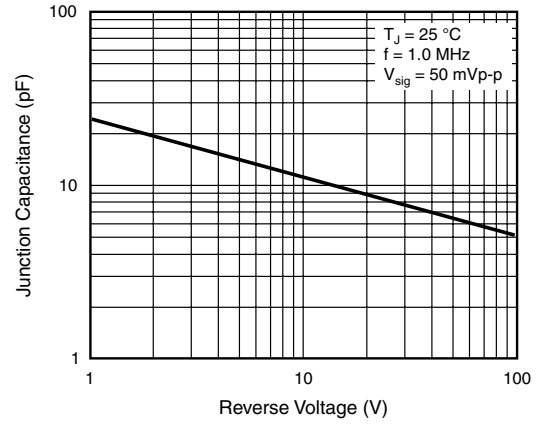


Figure 5. Typical Junction Capacitance

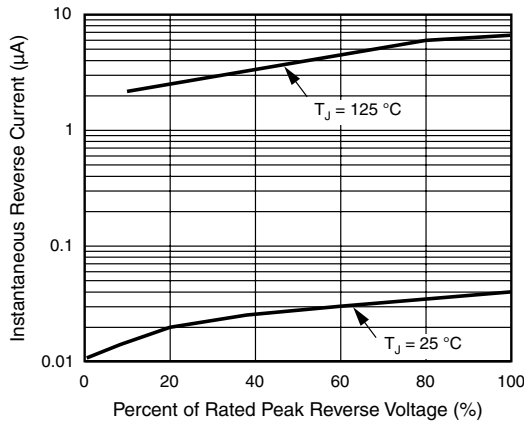
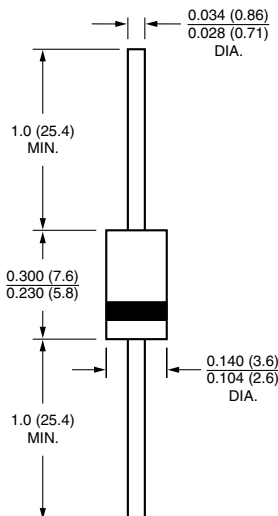


Figure 4. Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-204AC (DO-15)





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