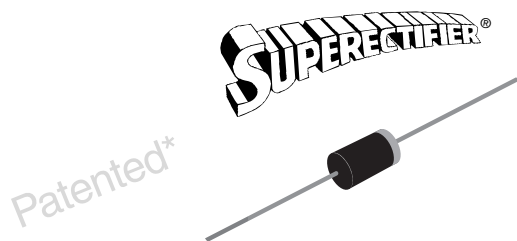


## Miniature Clamper/Damper Glass Passivated Rectifier



\* 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

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

### 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 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 $\mu A$
$V_F$	1.1 V
$T_J$ max.	175 °C

### MAXIMUM RATINGS ( $T_A = 25$ °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 $T_A = 50$ °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 $T_A = 100$ °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	CGP20	DGP20	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 2.0 A		V <sub>F</sub>	1.1		V
Maximum reverse current <sup>(1)</sup>	rated V <sub>R</sub>	T <sub>A</sub> = 25 °C T <sub>A</sub> = 100 °C	I <sub>R</sub>	5.0 100		μA
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 maximum	t <sub>rr</sub>	1.0 1.5		μs
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	15		pF

**Note:**(1) 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	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

<b>ORDERING INFORMATION</b> (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

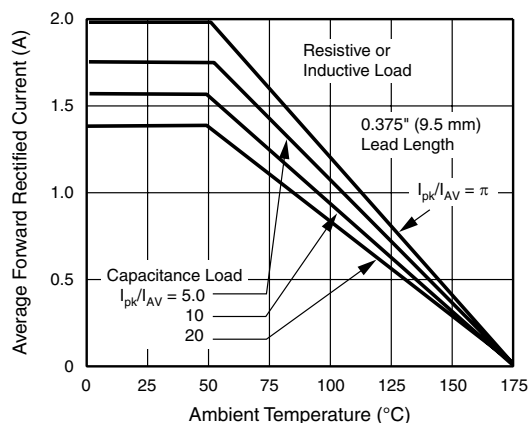
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Figure 1. Forward Current Derating Curve

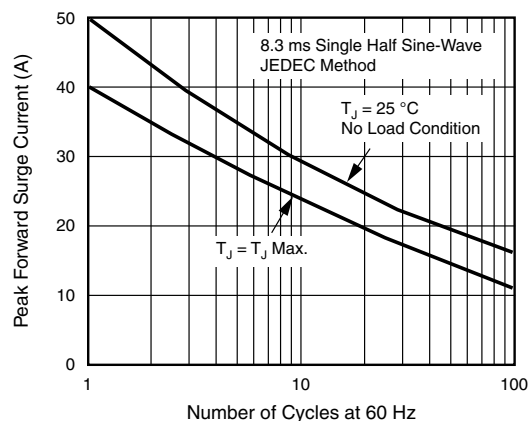


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

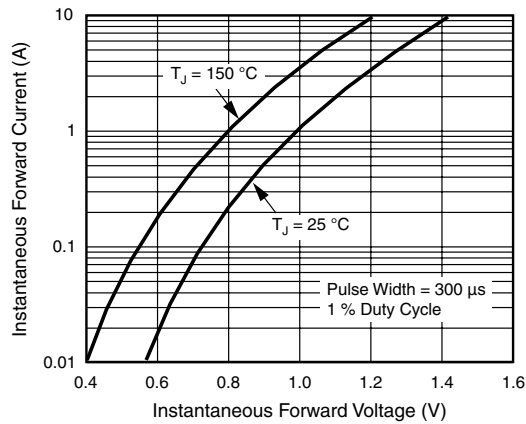


Figure 3. Typical Instantaneous Forward Characteristics

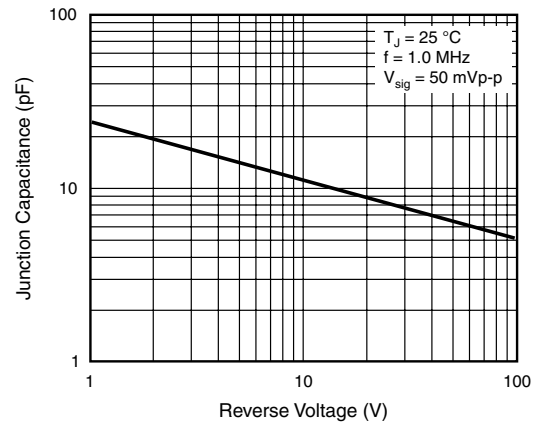


Figure 5. Typical Junction Capacitance

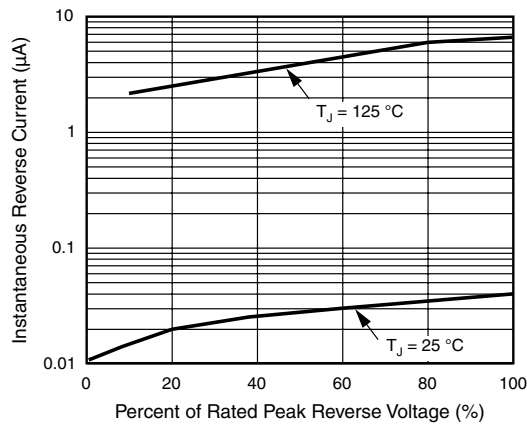
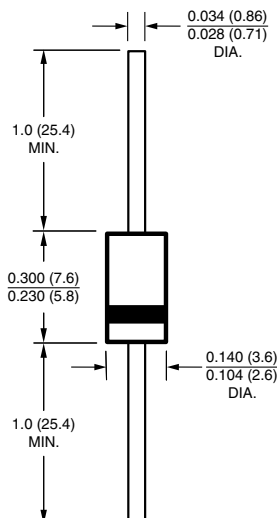


Figure 4. Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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





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