

# Miniature Clamper/Damper Glass Passivated Plastic Rectifier



## 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
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**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  
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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.5 A
$V_{RRM}$	1400 V, 1500 V
$I_{FSM}$	40 A
$I_R$	5.0 $\mu\text{A}$
$V_F$	1.1 V
$T_J$ max.	175 °C
Package	DO-204AC (DO-15)
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	CGP15	DGP15	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	$I_{F(AV)}$	1.5		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	$I_{R(AV)}$	50		$\mu\text{A}$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175		°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	CGP15	DGP15	UNIT
Maximum instantaneous forward voltage	$I_F = 1.0\text{ A}$		$V_F^{(1)}$	1.1		V
Maximum reverse current	Rated $V_R$	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	5.0		$\mu\text{A}$
		$T_A = 100\text{ }^\circ\text{C}$		100		
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	$t_{rr}$	1.0		$\mu\text{s}$
		maximum		1.5		
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

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	CGP15	DGP15	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	55		$^\circ\text{C/W}$

**Note**

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
CGP15-E3/54	0.425	54	4000	13" diameter paper tape and reel
CGP15-E3/73	0.425	73	2000	Ammo pack packaging

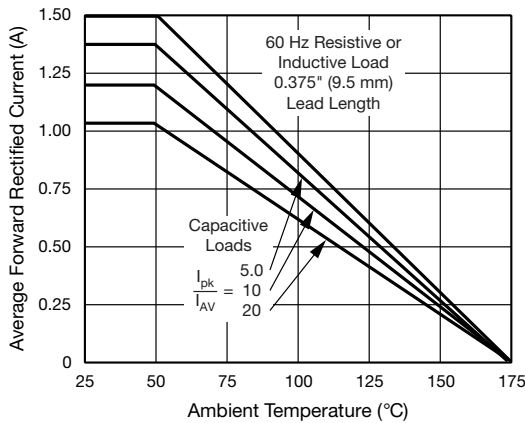
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

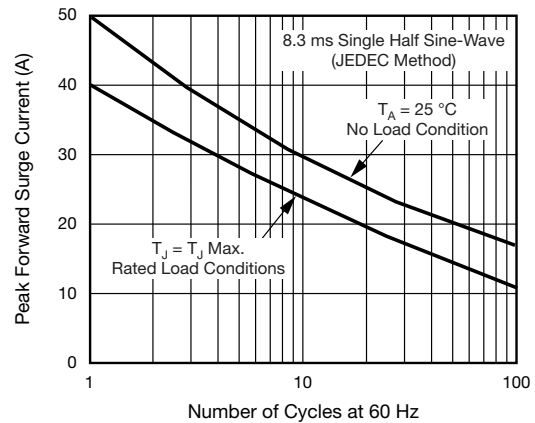


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

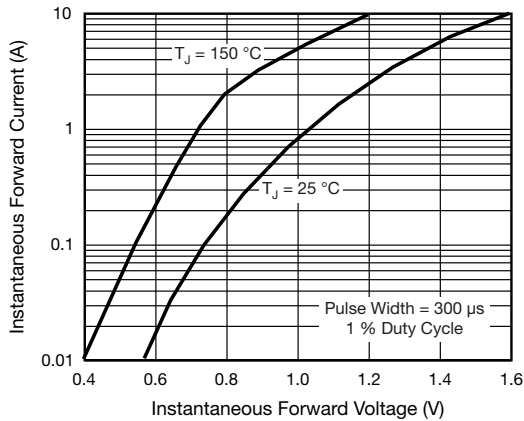


Fig. 3 - Typical Instantaneous Forward Characteristics

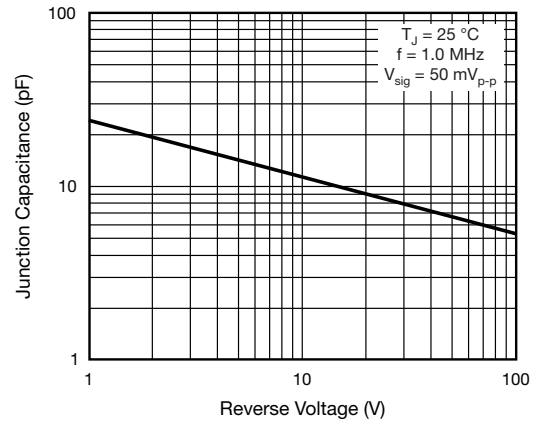


Fig. 5 - Typical Junction Capacitance

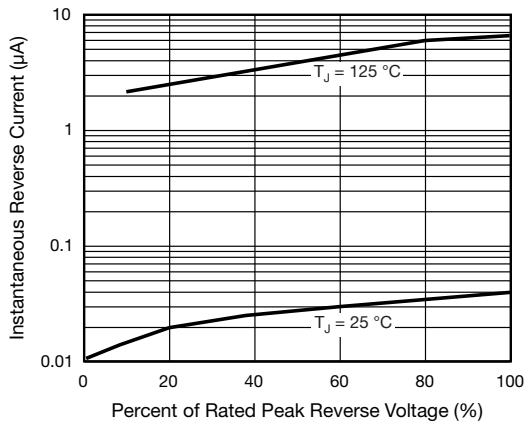
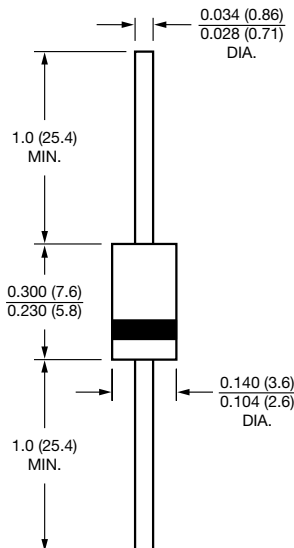


Fig. 4 - Typical Reverse Characteristics

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

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





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