

Vishay General Semiconductor

Miniature Clamper/Damper Glass Passivated Rectifier



PRIMARY CHARACTERISTICS					
I _{F(AV)}	1.5 A				
V _{RRM}	1400 V, 1500 V				
I _{FSM}	40 A				
I _R	5.0 μΑ				
V _F	1.1 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-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

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		А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	40		А		
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 100$ °C	I _{R(AV)}	50		μА		
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to + 175		°C		

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	CGP15	DGP15	UNIT
Maximum instantaneous forward voltage	I _F = 1.0 A		V _F ⁽¹⁾	1.1		V
Maximum reverse current	Rated V _R	T _A = 25 °C		5.0		μА
		T _A = 100 °C	IR	100		
Maximum reverse recovery time	I _F = 0.5 A, I _R = 50 mA		t _{rr}	15	20	μs
Reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A},$ $I_{rr} = 0.25 \text{ A}$	typical	+	1.0		- µs
		maximum	t _{rr}	1.5		
Typical junction capacitance	4.0 V, 1 MHz		CJ	15		pF

Note

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER SYMBOL CGP15 DGP15				
Typical thermal resistance	R _{0JA} (1)	55		°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	
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 °C unless otherwise noted)

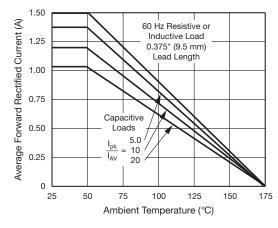


Fig. 1 - Forward Current Derating Curve

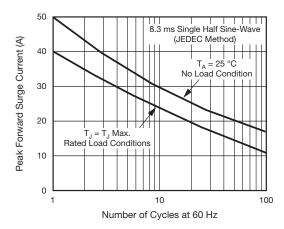


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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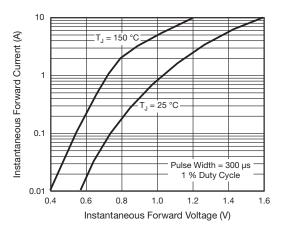


Fig. 3 - Typical Instantaneous Forward Characteristics

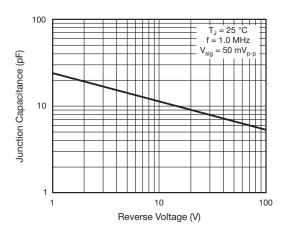


Fig. 5 - Typical Junction Capacitance

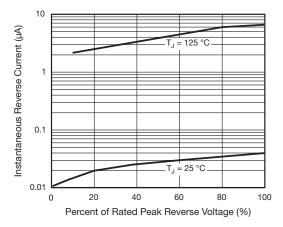
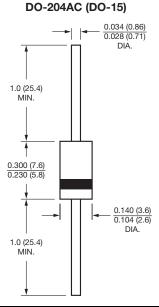


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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