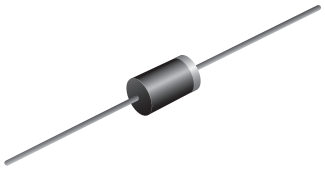
Miniature Clamper/Damper Glass Passivated Plastic Rectifier

SUPERECTIFIER®



DO-204AC (DO-15)

FEATURES

- Superectifier structure
- Cavity-free glass passivated junction
- Low forward voltage drop
- Typical I_R less than 0.1 µA
- 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

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 µA
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		µA
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	I_R	5.0		μA
		T_A = 100 °C		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 A, I_R = 1.0 A, I_{rr} = 0.25 A	typical	t_{rr}	1.0		μs
		maximum		1.5		
Typical junction capacitance	4.0 V, 1 MHz		C_J	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**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	55		°C/W

Note

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

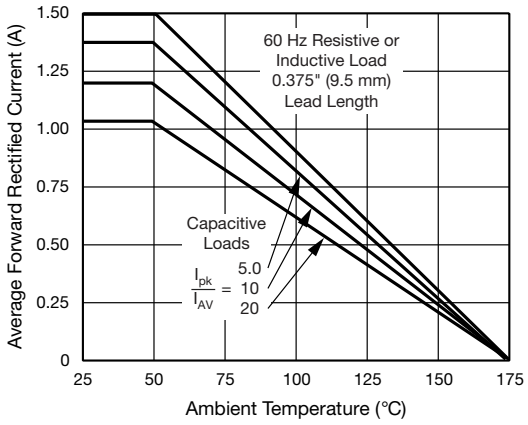

Fig. 1 - Forward Current Derating Curve

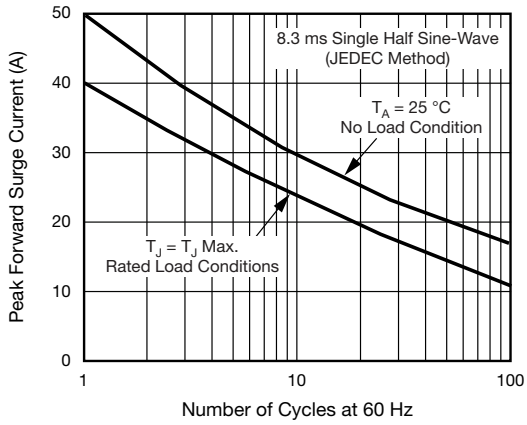

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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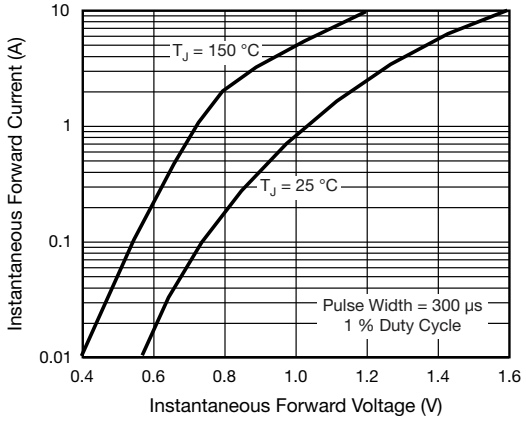


Fig. 3 - Typical Instantaneous Forward Characteristics

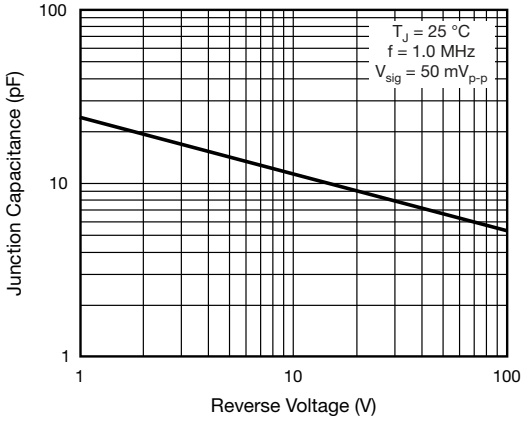


Fig. 5 - Typical Junction Capacitance

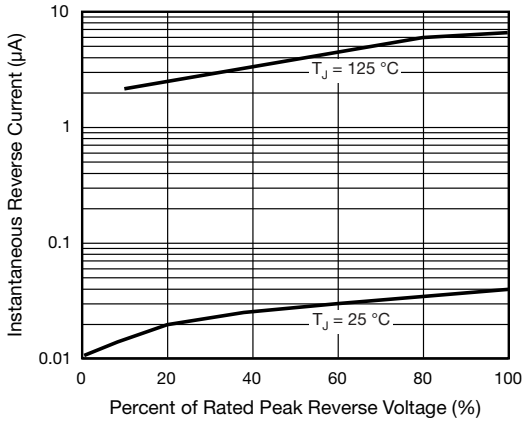
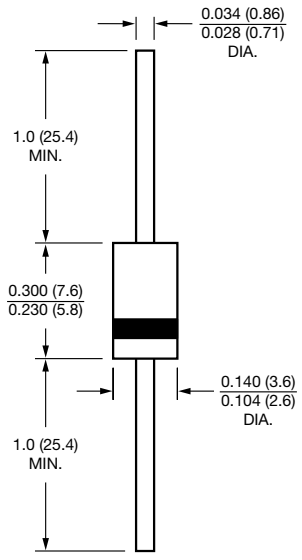


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



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