

Glass Passivated Junction Plastic Rectifier



FEATURES

- Superrectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current
- 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 general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application

MECHANICAL DATA

Case: DO-204AL, 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	
$I_{F(AV)}$	0.8 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V
I_{FSM}	25 A
I_R	5.0 μ A
V_F	1.3 V
T_J max.	175 °C
Package	DO-204AL (DO-41)
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	GP08A	GP08B	GP08D	GP08G	GP08J	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{F(AV)}$	0.8					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	25					A
Maximum full load reverse current full cycle average 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{R(AV)}$	30					μ A
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175					°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	GP08A	GP08B	GP08D	GP08G	GP08J	UNIT
Maximum instantaneous forward voltage	0.8 A		V_F	1.3			V		
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	I_R	5.0			μA		
		$T_A = 125^\circ\text{C}$		50					
Typical reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$		t_{rr}	2.0			μs		
Typical junction capacitance	4.0 V, 1 MHz		C_J	8.0			pF		

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	GP08A	GP08B	GP08D	GP08G	GP08J	UNIT	
Typical thermal resistance	R_{0JA} ⁽¹⁾	55		$^\circ\text{C/W}$				

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
GP08J-E3/54	0.335	54	5500	13" diameter paper tape and reel
GP08J-E3/73	0.335	73	3000	Ammo pack packaging

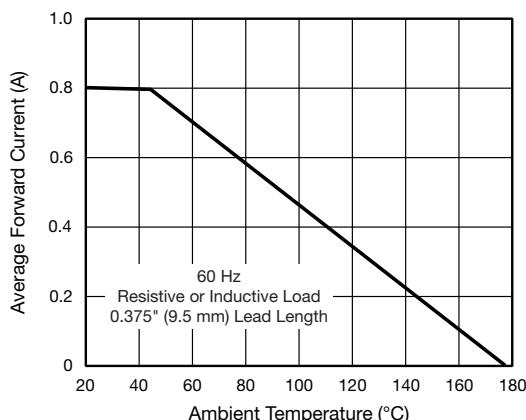
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

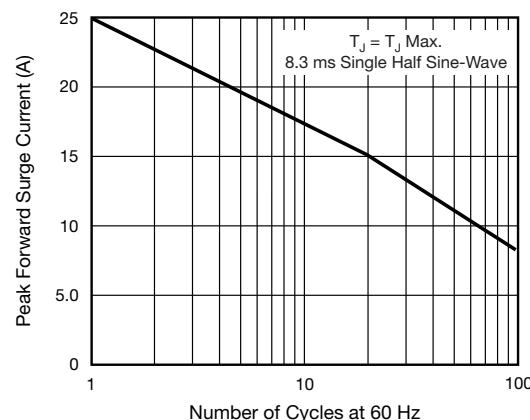


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

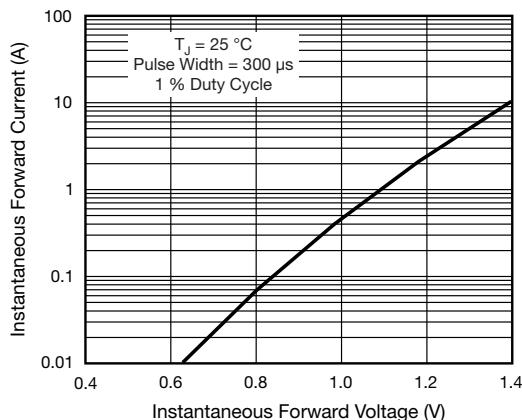


Fig. 3 - Typical Instantaneous Forward Characteristics

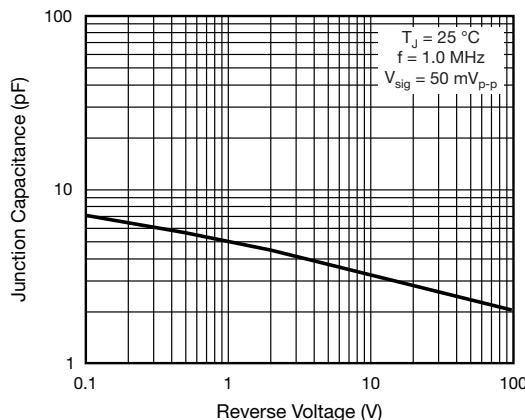


Fig. 5 - Typical Junction Capacitance

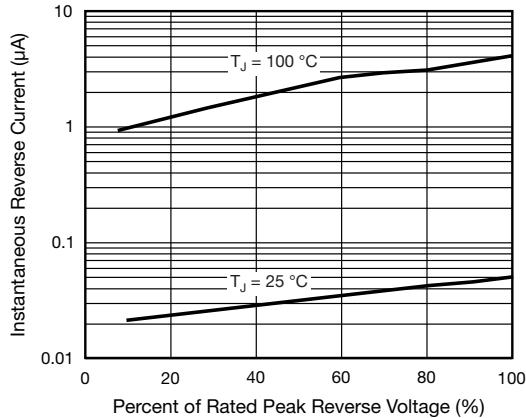


Fig. 4 - Typical Reverse Characteristics

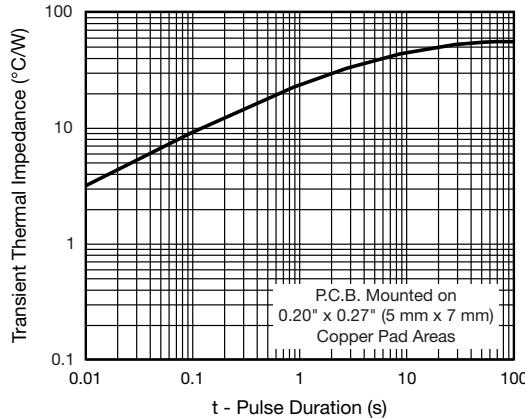
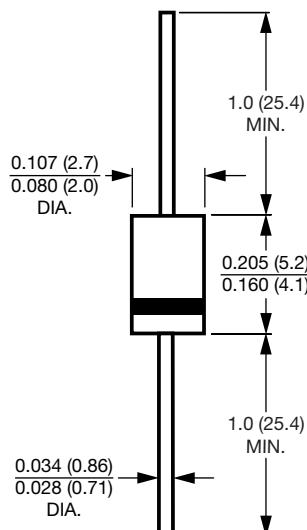


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



Note

- Lead diameter is $\frac{0.026 \text{ (0.66)}}{0.023 \text{ (0.58)}}$ for suffix "E" part numbers

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