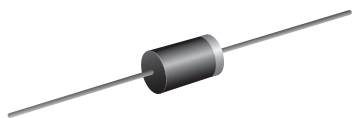




Glass Passivated Junction Plastic Rectifier

SUPERECTIFIER®



DO-204AL (DO-41)

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
- AEC-Q101 qualified available
 - Automotive ordering code base P/NHE3
- 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 for both consumer, and automotive applications.

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
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test. HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

Note

- For part numbers with "E" suffix, they are "E3" commercial grade only

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	100 V to 1000 V
I_{FSM}	30 A
I_R	5.0 μ A
V_F	1.1 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	GP10-4002	GP10-4003	GP10-4004	GP10-4005	GP10-4006	GP10-4007	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100 to 1000 (fig.5)						V
Maximum average forward rectified current 0.375" (9.5 mm) lead length (fig. 1)	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30						A
Maximum full load reverse current, full cycle average, 0.375" (9.5 mm) lead length at $T_A = 75$ °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 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	GP10-4002	GP10-4003	GP10-4004	GP10-4005	GP10-4006	GP10-4007	UNIT
Maximum instantaneous forward voltage	1.0 A	V _F	1.1						V
Maximum DC reverse current at rated DC blocking voltage	T _A = 25 °C	I _R	5.0						μA
	T _A = 125 °C		50						
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	3.0						μs
Typical junction capacitance	4.0 V, 1 MHz	C _J	8.0				7.0		pF

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	GP10-4002	GP10-4003	GP10-4004	GP10-4005	GP10-4006	GP10-4007	UNIT
Typical thermal resistance	R _{θJA} ⁽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
GP10-4002-E3/54	0.335	54	5500	13" diameter paper tape and reel
GP10-4002-E3/73	0.335	73	3000	Ammo pack packaging
GP10-4002HE3/54 ⁽¹⁾	0.335	54	5500	13" diameter paper tape and reel
GP10-4002HE3/73 ⁽¹⁾	0.335	73	3000	Ammo pack packaging

Note

⁽¹⁾ AEC-Q101 qualified

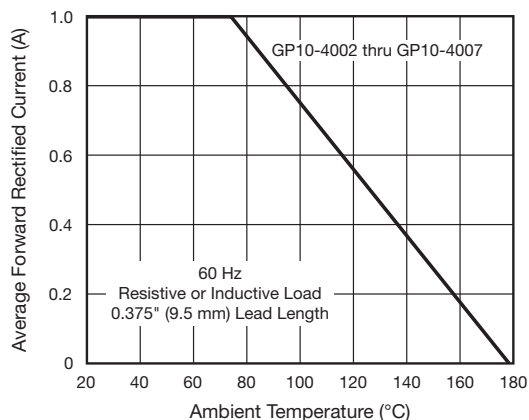
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

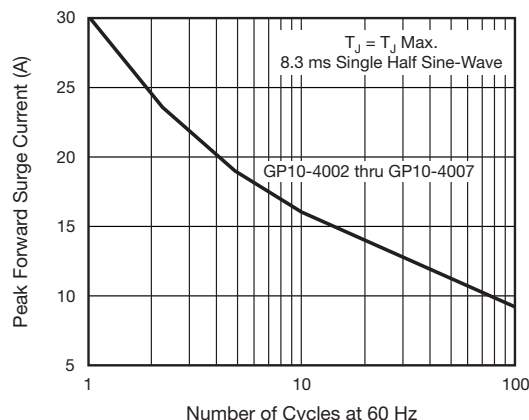


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

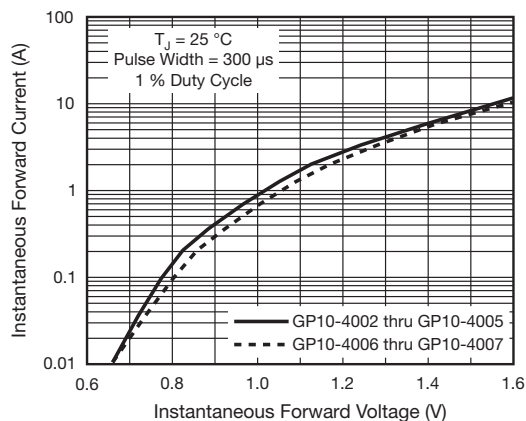


Fig. 3 - Typical Instantaneous Forward Characteristics

GP10-4002.....	100 V
GP10-4003.....	200 V
GP10-4004.....	400 V
GP10-4005.....	600 V
GP10-4006.....	800 V
GP10-4007.....	1000 V

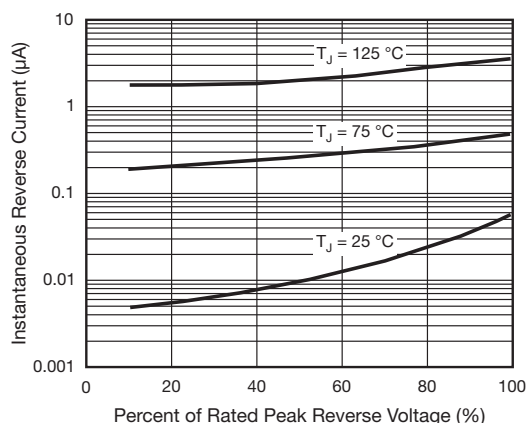
Fig. 5 - Maximum Repetitive Peak Reverse Voltage, V_{RRM} 

Fig. 4 - Typical Reverse Characteristics

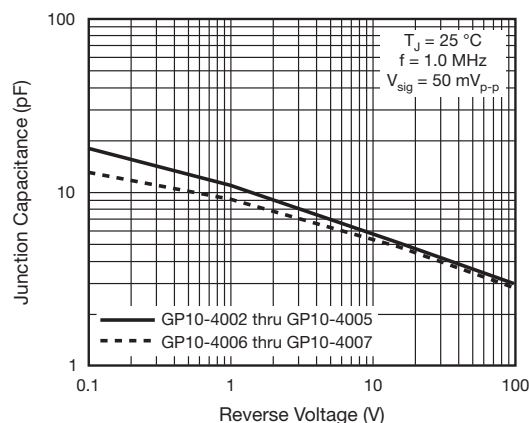
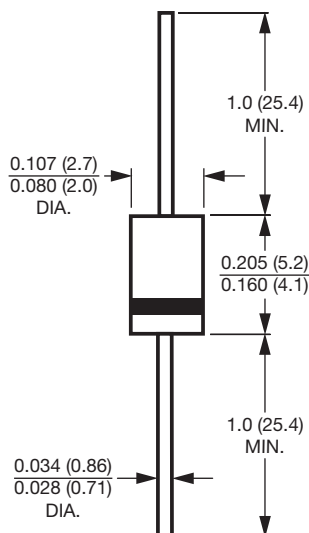


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)**DO-204AL (DO-41)****Note**

- Lead diameter is 0.026 (0.66) / 0.023 (0.58) for suffix "E" part numbers



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