



## Glass Passivated Junction Plastic Rectifier

### SUPERECTIFIER®



DO-41 (DO-204AL)

### FEATURES

- Superectifier 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](http://www.vishay.com/doc?99912)

RoHS  
COMPLIANT

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes.

### MECHANICAL DATA

**Case:** DO-41 (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

$I_{F(AV)}$	1.0 A
$V_{RRM}$	100 V to 1000 V
$I_{FSM}$	30 A
$I_R$	5.0 $\mu$ A
$V_F$	1.1 V
$T_J$ max.	175 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

### 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						$\mu$ 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						$\mu$ A
	$T_A = 125$ °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						$\mu$ s
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	8.0			7.0			pF



THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	GP10-4002	GP10-4003	GP10-4004	GP10-4005	GP10-4006	GP10-4007	UNIT
Typical thermal resistance	R <sub>θJA</sub> (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

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

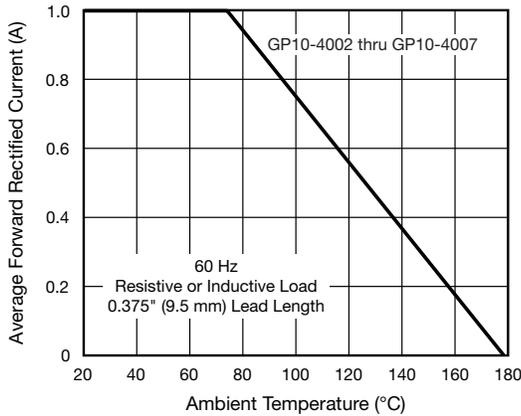


Fig. 1 - Forward Current Derating Curve

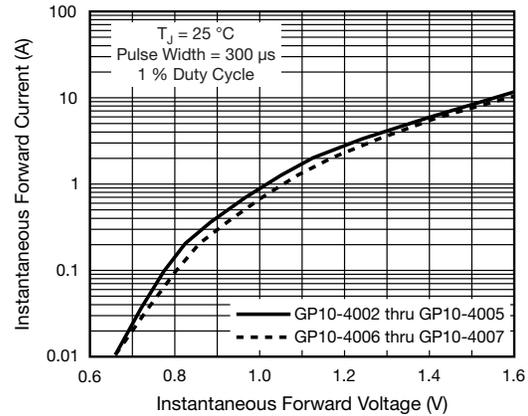


Fig. 3 - Typical Instantaneous Forward Characteristics

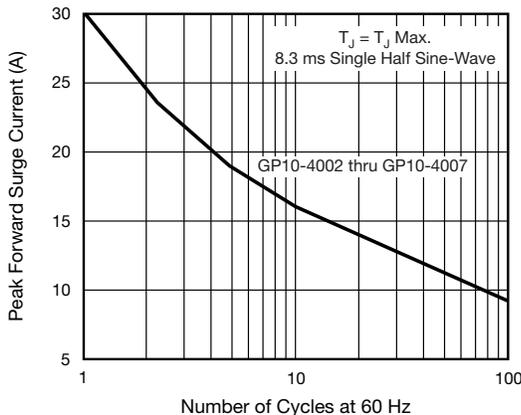


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

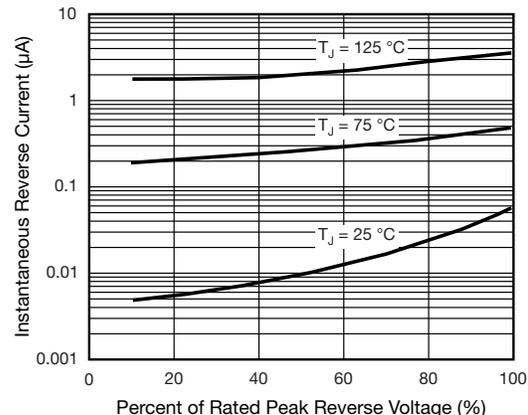


Fig. 4 - Typical Reverse Characteristics



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

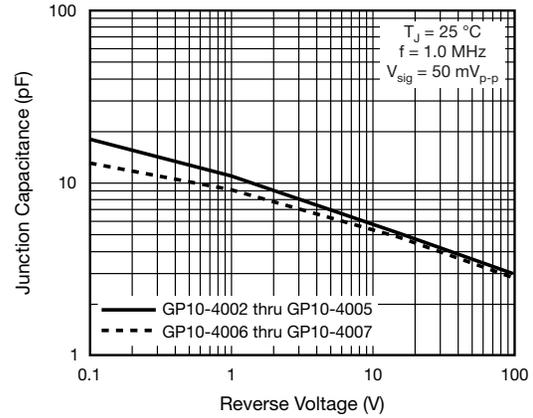
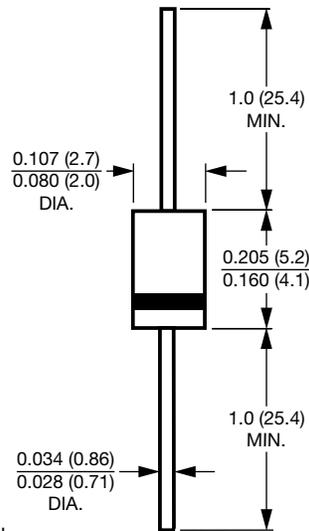


Fig. 5 - Maximum Repetitive Peak Reverse Voltage,  $V_{RRM}$

Fig. 6 - Typical Junction Capacitance

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

**DO-41 (DO-204AL)**



**Note**

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



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