

## GP02-20, GP02-25, GP02-30, GP02-35, GP02-40

Vishay General Semiconductor

## **High Voltage Glass Passivated Junction Plastic Rectifier**



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DO-41 (DO-204AL)

PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub>	0.25 A						
$V_{RRM}$	2000 V, 2500 V, 3000 V, 3500 V, 4000						
I <sub>FSM</sub>	15 A						
I <sub>R</sub>	5.0 μA						
$V_{F}$	3.0 V						
T <sub>J</sub> max.	175 °C						
Package	DO-41 (DO-204AL)						
Circuit configuration	Single						

### **FEATURES**

Superectifier structure for high reliability application

RoHS

· Cavity-free glass-passivated junction

- 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 <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

### **TYPICAL APPLICATIONS**

For use in rectification of high voltage power supplies, inverters, converters, and freewheeling diodes application.

### **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

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	2000	2500	3000	3500	4000	V
Maximum RMS voltage	$V_{RMS}$	1400	1750	2100	2450	2800	V
Maximum DC blocking voltage	$V_{DC}$	2000	2500	3000	3500	4000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T <sub>A</sub> = 55 °C	I <sub>F(AV)</sub>	0.25				Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	15				Α	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175				°C	

## **Not for New Designs**



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Maximum instantaneous forward voltage	1.0 A	V <sub>F</sub>	3.0					<b>V</b>
Maximum DC reverse current at	T <sub>A</sub> = 25 °C		5.0					uА
rated DC blocking voltage	T <sub>A</sub> = 100 °C	I <sub>R</sub>	50					μΛ
Typical reverse recovery time	$I_F = 0.5 A$ , $I_R = 1.0 A$ , $I_{rr} = 0.25 A$	t <sub>rr</sub> 2.0			μs			
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub> 3.0			pF			

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	130 °C				°C/W	

#### Note

<sup>(1)</sup> Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

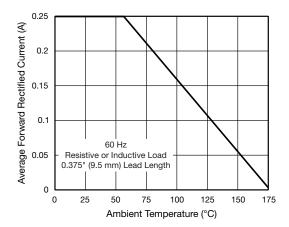
ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
GP02-20-E3/54	0.339	54	5500	13" diameter paper tape and reel				
GP02-20-E3/73	0.339	73	3000	Ammo pack packaging				



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



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Fig. 1 - Forward Current Derating Curve

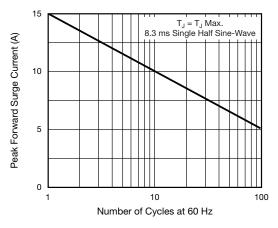


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

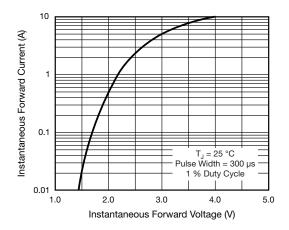


Fig. 3 - Typical Instantaneous Forward Characteristics

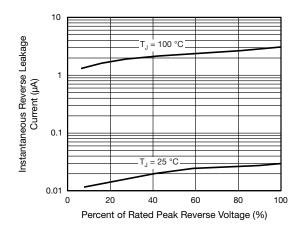


Fig. 4 - Typical Reverse Characteristics

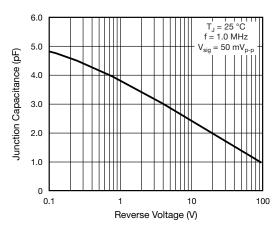


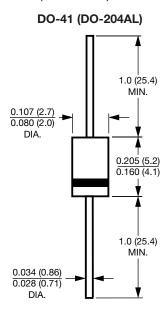
Fig. 5 - Typical Junction Capacitance



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





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