

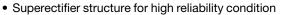
Vishay General Semiconductor

Glass Passivated Junction Fast Switching Plastic Rectifier



| PRIMARY CHARACTERISTICS | | | | | | |
|-------------------------|------------------|--|--|--|--|--|
| I _{F(AV)} | 0.5 A | | | | | |
| V_{RRM} | 1200 V to 2000 V | | | | | |
| I _{FSM} | 20 A | | | | | |
| V _F | 1.8 V | | | | | |
| t _{rr} | 300 ns | | | | | |
| I _R | 5.0 μA | | | | | |
| T _J max. | 175 °C | | | | | |
| Package | DO-41 (DO-204AL) | | | | | |
| Circuit configuration | Single | | | | | |

FEATURES



• Cavity-free glass-passivated junction

RoHS

- Fast switching for high efficiency
- Low leakage current, typical I_R less than 0.2 μA
- · High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

High voltage rectification of G2 grid CRT and TV, snubber circuit of camera flash.

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 _A = 25 °C unless otherwise noted) | | | | | | | | | |
|--|---|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|------|
| PARAMETER | SYMBOL | RGP02- 12E | RGP02- 14E | RGP02- 15E | RGP02- 16E | RGP02- 17E | RGP02- 18E | RGP02- 20E | UNIT |
| Maximum repetitive peak reverse voltage | V _{RRM} | 1200 | 1400 | 1500 | 1600 | 1700 | 1800 | 2000 | V |
| Maximum RMS voltage | V _{RMS} | 840 | 980 | 1050 | 1120 | 1190 | 1260 | 1400 | V |
| Maximum DC blocking voltage | V_{DC} | 1200 | 1400 | 1500 | 1600 | 1700 | 1800 | 2000 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C | I _{F(AV)} | AV) 0.5 | | | | | | Α | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated | I _{FSM} | I _{FSM} 20 | | | | | | А | |
| 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 | RGP02- 12E | RGP02- 14E | RGP02- 15E | RGP02- 16E | RGP02- 17E | RGP02- 18E | RGP02- 20E | UNIT |
| Maximum instantaneous forward voltage | 0.1 A | | V _F | 1.8 | | | | | | V | |
| Maximum DC reverse current at | | T _A = 25 °C | 1- | 5.0 | | | | | | | |
| rated DC blocking voltage | | T _A = 125 °C | I _R | 50 | | | | | | | μΑ |
| Maximum reverse recovery time | $I_F = 0.5$ $I_{rr} = 0.2$ | A, I _R = 1.0 A, 5 A | t _{rr} | 300 | | | | | ns | | |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | |
|---|----------------------|--|--|--|--|--|--|------|------|
| PARAMETER | SYMBOL | SYMBOL RGP02- RGP02- RGP02- RGP02- RGP02- RGP02- RGP02- 14E 15E 16E 17E 18E 20E UN | | | | | | UNIT | |
| Typical thermal resistance | R _{0JA} (1) | 65 | | | | | | | °C/W |
| Typical thermal resistance | R _{0JL} (1) | 30 | | | | | | C/VV | |

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead 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 | | | | | |
| RGP02-12E-E3/54 | 0.24 | 54 | 5500 | 13" diameter paper tape and reel | | | | | |
| RGP02-12E-E3/73 | 0.24 | 73 | 3000 | Ammo pack packaging | | | | | |

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

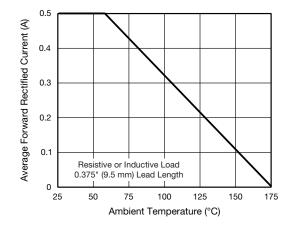


Fig. 1 - Forward Current Derating Curve

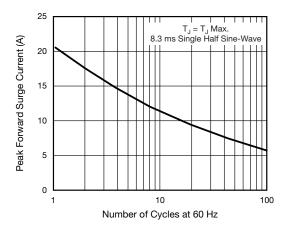


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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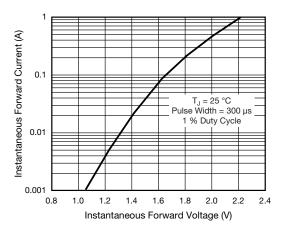


Fig. 3 - Typical Instantaneous Forward Characteristics

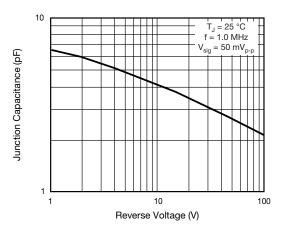


Fig. 5 - Typical Junction Capacitance

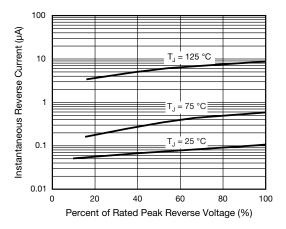
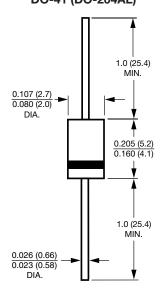


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)





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