

## Surface-Mount Glass Passivated Rectifier

Superectifier®


**GF1 (DO-214BA)**

Cathode  Anode

### LINKS TO ADDITIONAL RESOURCES



3D Models

#### PRIMARY CHARACTERISTICS

|                       |   |
|-----------------------|---|
| $I_{F(AV)}$           | 1.0 A   |
| $V_{RRM}$             | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| $I_{FSM}$             | 30 A  |
| $V_F$                 | 1.1 V, 1.2 V                                    |
| $I_R$                 | 5.0 $\mu$ A                                     |
| $T_J$ max.            | 175 °C  |
| Package               | GF1 (DO-214BA)                                  |
| Circuit configuration | Single  |

#### FEATURES

- Superectifier structure for high reliability condition
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- AEC-Q101 qualified
- 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 for consumer, automotive and telecommunication.

#### MECHANICAL DATA

**Case:** GF1 (DO-214BA), 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 2 whisker test

**Polarity:** color band denotes cathode end

#### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER  | SYMBOL         | GF1A        | GF1B | GF1D | GF1G | GF1J | GF1K | GF1M | UNIT |
|--|----------------|-------------|------|------|------|------|------|------|------|
| Device marking code  |                | GA          | GB   | GD   | GG   | GJ   | GK   | GM   |      |
| Max. repetitive peak reverse voltage   | $V_{RRM}$      | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V    |
| Max. RMS voltage   | $V_{RMS}$      | 35          | 70   | 140  | 280  | 420  | 560  | 700  | V    |
| Max. DC blocking voltage   | $V_{DC}$       | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V    |
| Max. average forward rectified current at $T_L = 125$ °C                           | $I_{F(AV)}$    | 1.0         |      |      |      |      |      |      | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 30          |      |      |      |      |      |      | A    |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | -65 to +175 |      |      |      |      |      |      | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |  |                         |                 |      |      |      |      |      |      |      |      |
|--|--|-------------------------|-----------------|------|------|------|------|------|------|------|------|
| PARAMETER  | TEST CONDITIONS  |                         | SYMBOL          | GF1A | GF1B | GF1D | GF1G | GF1J | GF1K | GF1M | UNIT |
| Max. instantaneous forward voltage   | 1.0 A  |                         | V <sub>F</sub>  | 1.1  |      |      |      |      | 1.2  |      | V    |
| Max. DC reverse current at rated DC blocking voltage                       |  | T <sub>A</sub> = 25 °C  | I <sub>R</sub>  | 5.0  |      |      |      |      |      |      | μA   |
|  |  | T <sub>A</sub> = 125 °C |                 | 50   |      |      |      |      |      |      |      |
| Typical reverse recovery time  | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |                         | t <sub>rr</sub> | 2.0  |      |      |      |      |      |      | μs   |
| Typical junction capacitance   | 4.0 V, 1 MHz   |                         | C <sub>J</sub>  | 15   |      |      |      |      |      |      | pF   |

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |      |      |      |      |      |      |      |      |      |
|---|------------------|------|------|------|------|------|------|------|------|------|
| PARAMETER   | SYMBOL           | GF1A | GF1B | GF1D | GF1G | GF1J | GF1K | GF1M | UNIT |      |
| Typical thermal resistance <sup>(1)</sup>                               | R <sub>θJA</sub> | 80   |      |      |      |      |      |      |      | °C/W |
|   | R <sub>θJL</sub> | 26   |      |      |      |      |      |      |      |      |

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead, PCB mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                                    |
|---------------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
| GF1J-E3/67A                           | 0.104           | 67A                    | 1500          | 7" diameter plastic tape and reel  |
| GF1J-E3/5CA                           | 0.104           | 5CA                    | 6500          | 13" diameter plastic tape and reel |

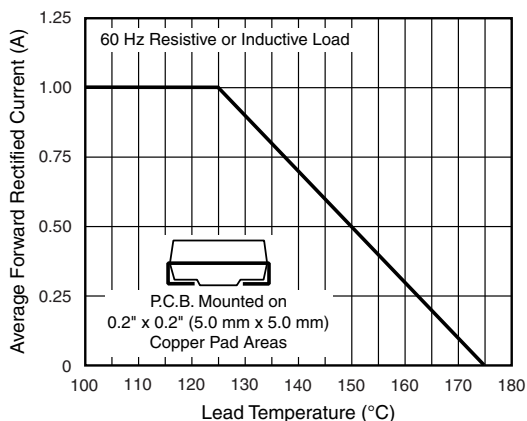
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

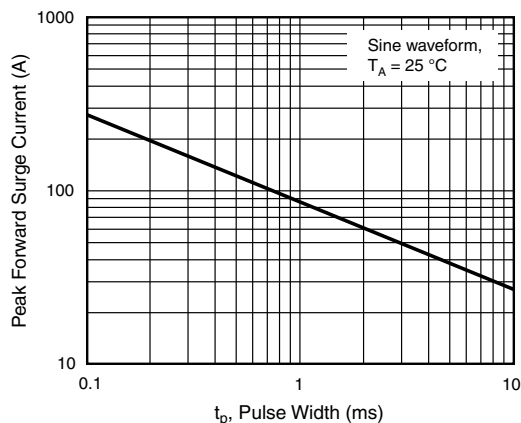


Fig. 2 - Non-Repetitive Peak Forward Surge Current

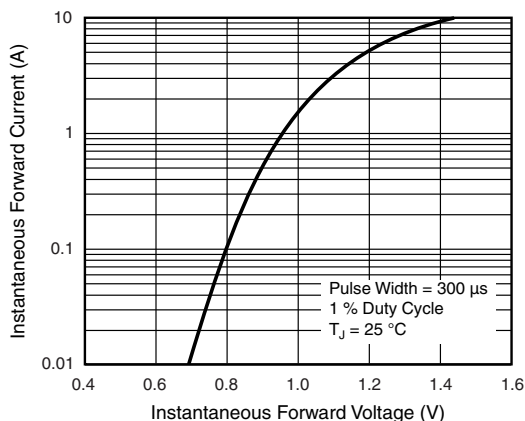


Fig. 3 - Typical Instantaneous Forward Characteristics

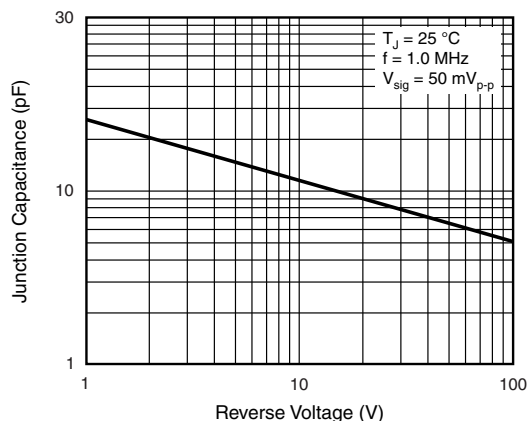


Fig. 5 - Typical Junction Capacitance

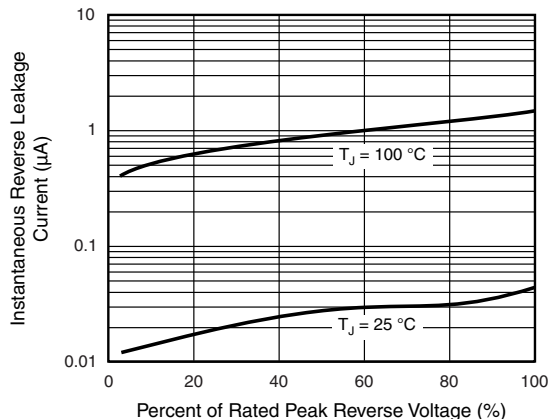


Fig. 4 - Typical Reverse Characteristics

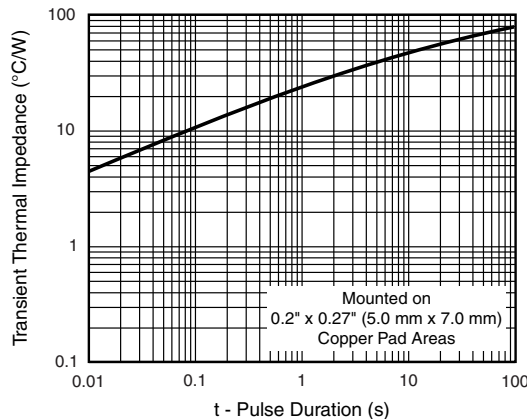
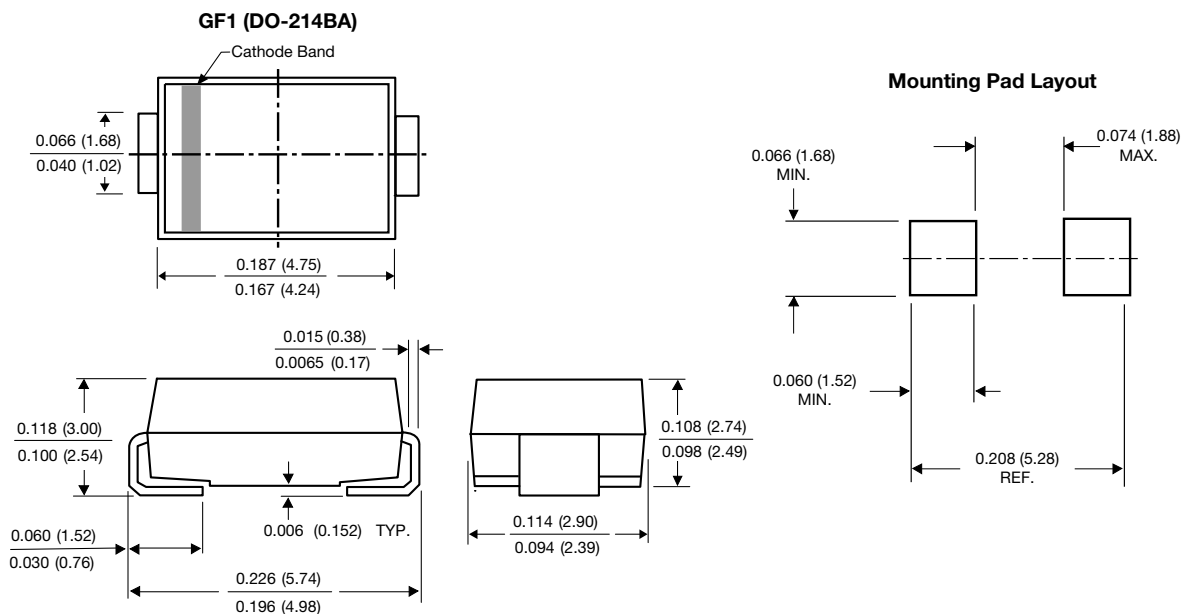


Fig. 6 - Typical Transient Thermal Impedance

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




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