



## Surface-Mount Glass Passivated Rectifier

Superectifier®



GF1 (DO-214BA)

Cathode Anode

RoHS  
COMPLIANT

### 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)

### 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/NHE3\_X - RoHS-compliant and AEC-Q101 qualified  
("X" denotes revision code e.g. A, B)

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

HE3 suffix meet JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

### 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                                          |

| 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** ( $T_A = 25\text{ }^{\circ}\text{C}$  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** ( $T_A = 25\text{ }^{\circ}\text{C}$  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

**ORDERING INFORMATION** (Example)

| PREFERRED P/N              | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
|----------------------------|-----------------|------------------------|---------------|------------------------------------|
| GF1JHE3_A/H <sup>(1)</sup> | 0.104           | H                      | 1500          | 7" diameter plastic tape and reel  |
| GF1JHE3_A/I <sup>(1)</sup> | 0.104           | I                      | 6500          | 13" diameter plastic tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified

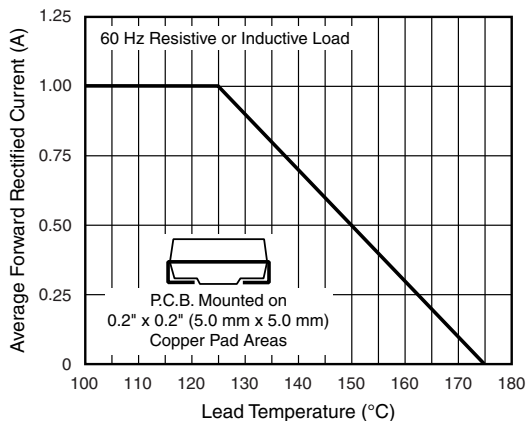
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

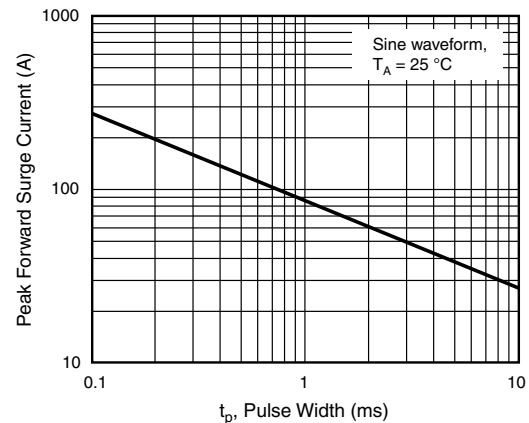


Fig. 2 - Non-Repetitive Peak Forward Surge Current

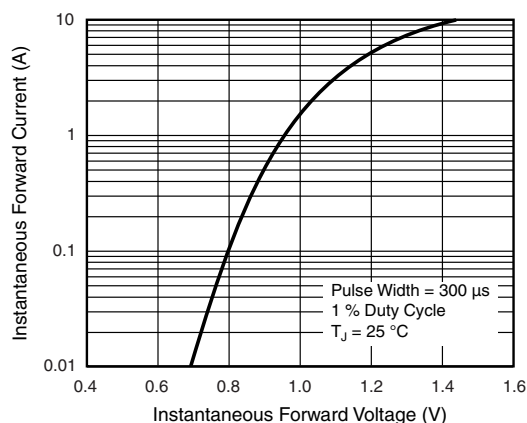


Fig. 3 - Typical Instantaneous Forward Characteristics

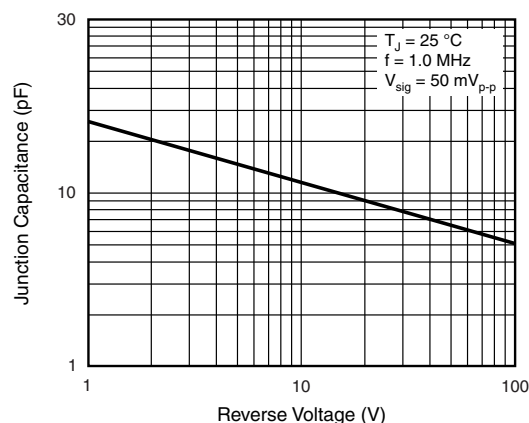


Fig. 5 - Typical Junction Capacitance

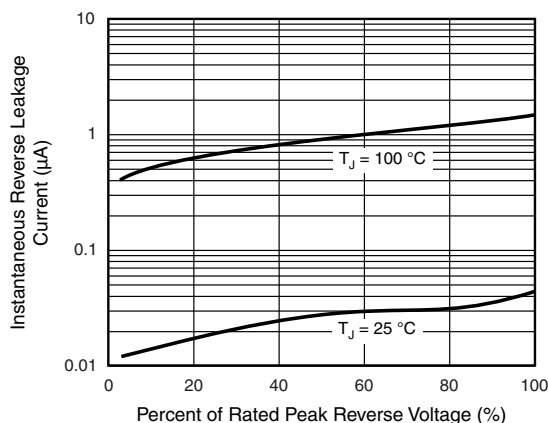


Fig. 4 - Typical Reverse Characteristics

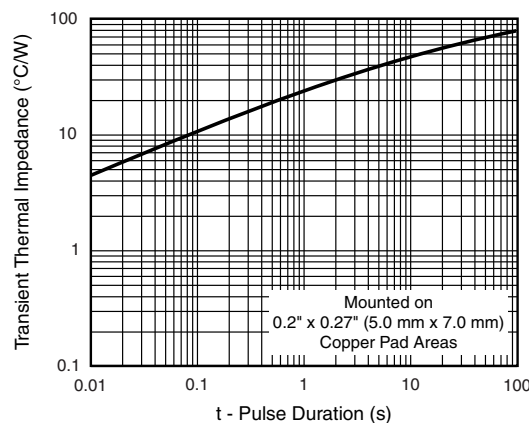
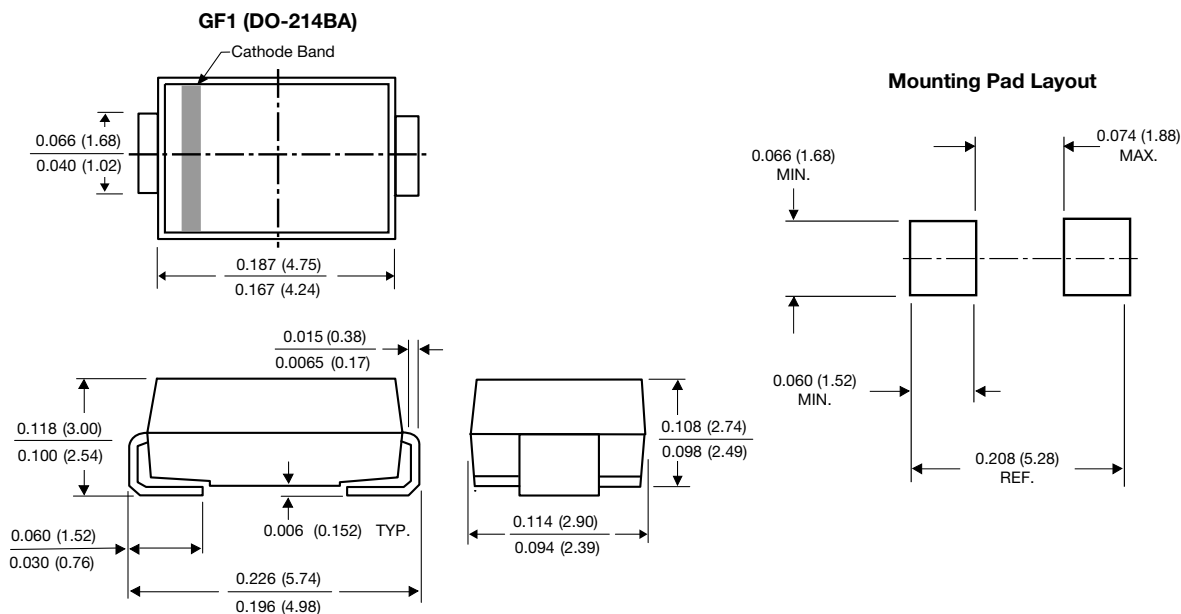


Fig. 6 - Typical Transient Thermal Impedance

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





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