



High Voltage Glass Passivated Plastic Rectifier

SUPERECTIFIER®



DO-41 (DO-204AL)

FEATURES

- Superectifier structure for high reliability application
- 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 www.vishay.com/doc?99912



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

PRIMARY CHARACTERISTICS

| | |
|-----------------------|--------------------------------|
| $I_{F(AV)}$ | 0.25 A |
| V_{RRM} | 1000 V, 2000 V, 3000 V, 4000 V |
| I_{FSM} | 15 A |
| I_R | 5.0 μ A |
| V_F | 3.5 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 | GI250-1 | GI250-2 | GI250-3 | GI250-4 | UNIT |
|--|----------------|-------------|---------|---------|---------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 1000 | 2000 | 3000 | 4000 | V |
| Maximum RMS voltage | V_{RMS} | 700 | 1400 | 2100 | 2800 | V |
| Maximum DC blocking voltage | V_{DC} | 1000 | 2000 | 3000 | 4000 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 75$ °C | $I_{F(AV)}$ | 0.25 | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 15 | | | | 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 | GI250-1 | GI250-2 | GI250-3 | GI250-4 | UNIT |
| Maximum instantaneous forward voltage | 0.25 A | V _F | 3.5 | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | I _R | 5.0 | | | | μA |
| | T _A = 100 °C | | 50 | | | | |
| Typical reverse recovery time | I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | t _{rr} | 2.0 | | | | μs |
| Typical junction capacitance | 4.0 V, 1 MHz | C _J | 3.0 | | | | pF |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | |
|---|---------------------------------|---------|---------|---------|---------|------|--|
| PARAMETER | SYMBOL | GI250-1 | GI250-2 | GI250-3 | GI250-4 | UNIT | |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 130 | | | | °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 |
| GI250-4-E3/54 | 0.339 | 54 | 5500 | 13" diameter paper tape and reel |
| GI250-4-E3/73 | 0.339 | 73 | 3000 | Ammo pack packaging |

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

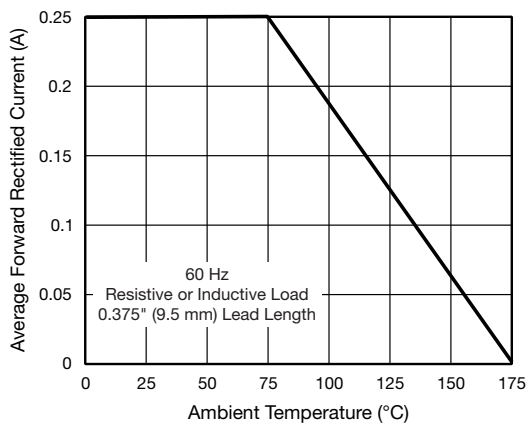


Fig. 1 - Forward Current Derating Curve

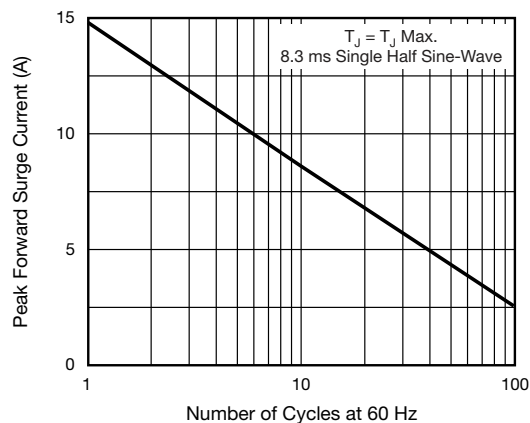


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

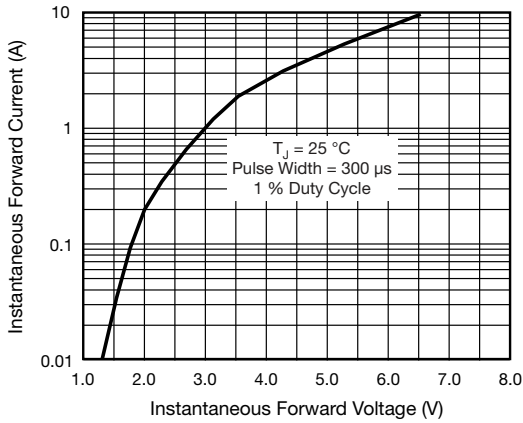


Fig. 3 - Typical Instantaneous Forward Characteristics

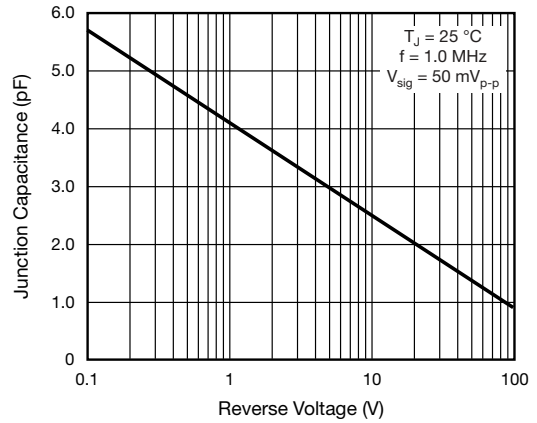


Fig. 5 - Typical Junction Capacitance

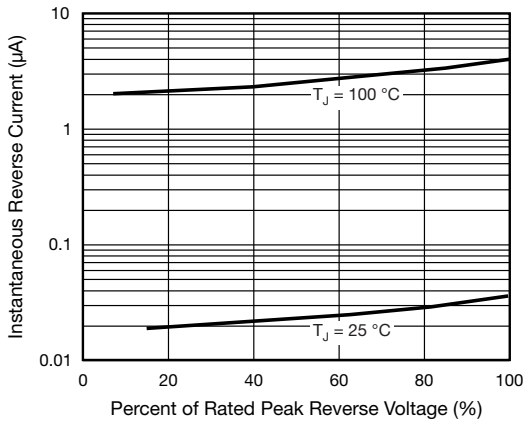
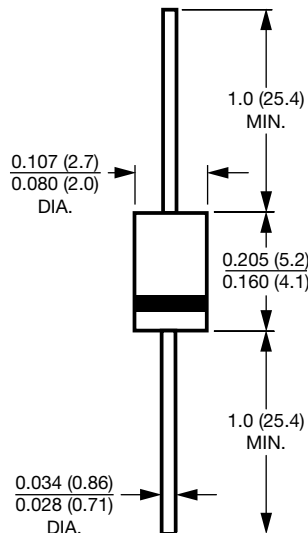


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)





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