

General Purpose Plastic Rectifier


DO-201AD

FEATURES

- Low forward voltage drop
- Low leakage current, I_R less than 0.1 μA
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

Note

- These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-201AD, molded epoxy 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

| | |
|-------------|-----------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 200 V to 1000 V |
| I_{FSM} | 100 A |
| I_R | 5.0 μA |
| V_F | 1.1 V |
| T_J max. | 150 °C |

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

| PARAMETER | SYMBOL | GI500 | GI501 | GI502 | GI504 | GI506 | GI508 | GI510 | UNIT |
|---|----------------|---------------|-------|-------|-------|-------|-------|-------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 95$ °C | $I_{F(AV)}$ | 3.0 | | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 100 | | | | | | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 50 to + 150 | | | | | | | °C |

ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)

| PARAMETER | TEST CONDITIONS | | SYMBOL | GI500 | GI501 | GI502 | GI504 | GI506 | GI508 | GI510 | UNIT |
|---|--|-------------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|------|
| Maximum instantaneous forward voltage | 9.4 A | T _J = 25 °C | V _F | 1.1 | | | | | | V | |
| | | T _J = 175 °C | | 1.0 | | | | | | | |
| 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 | 28 | | | | | | pF | |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | GI500 | GI501 | GI502 | GI504 | GI506 | GI508 | GI510 | UNIT |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 20 | | | | | | | °C/W |
| | R _{θJL} ⁽¹⁾ | 5.0 | | | | | | | |

Note

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted with 0.8" x 0.8" (20 mm x 20 mm) copper heatsinks

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GI506-E3/54 | 1.1 | 54 | 1400 | 13" diameter paper tape and reel |
| GI506-E3/73 | 1.1 | 73 | 1000 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

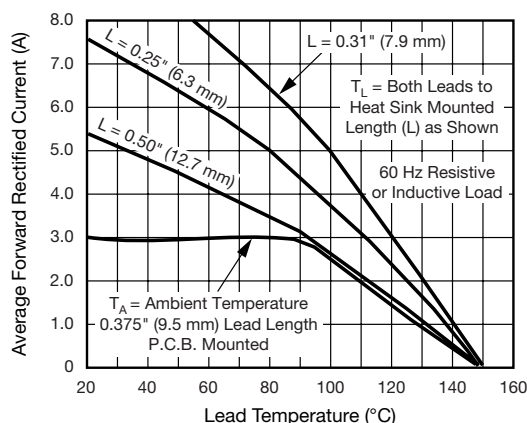


Fig. 1 - Forward Current Derating Curve

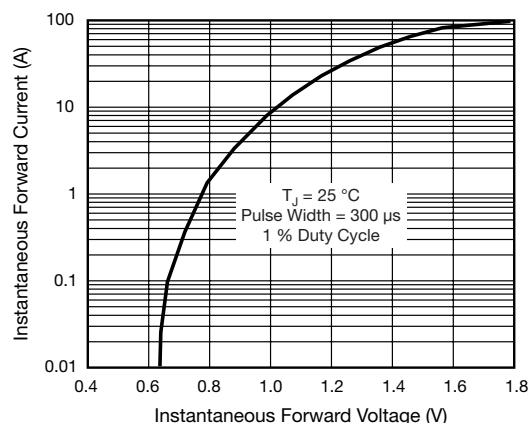


Fig. 3 - Typical Instantaneous Forward Characteristics

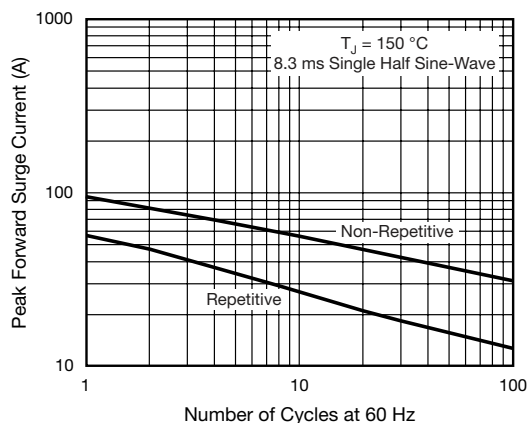


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

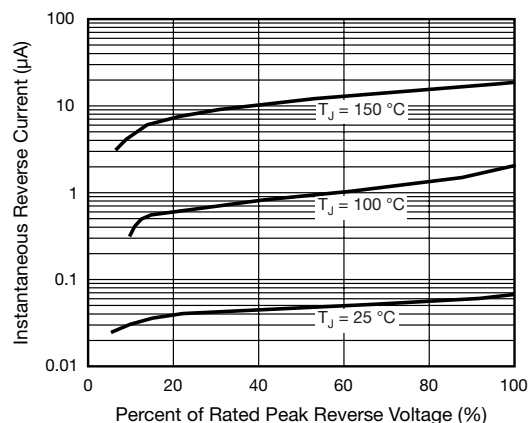


Fig. 4 - Typical Reverse Characteristics

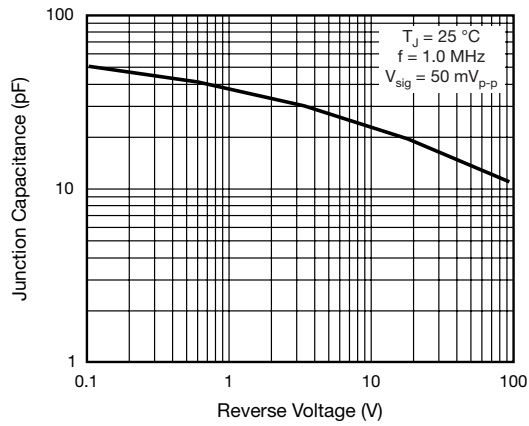


Fig. 5 - Typical Junction Capacitance

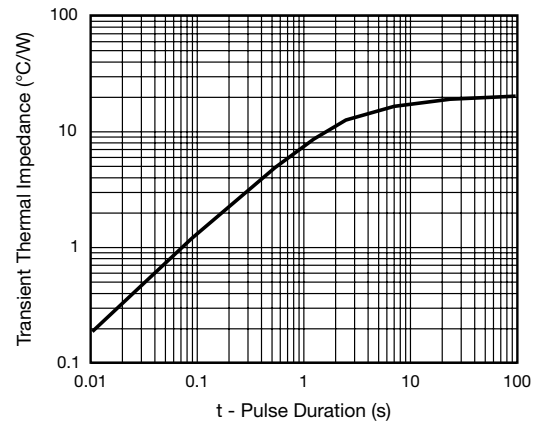
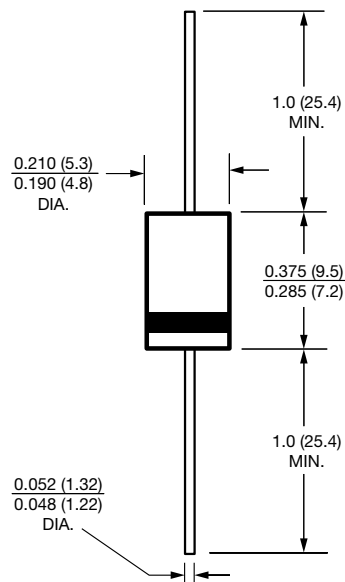


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD





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