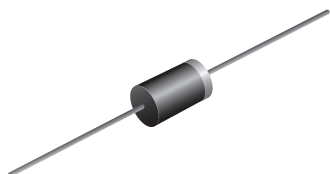




Fast Switching Plastic Rectifier



DO-201AD

FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- 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



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

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} | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V |
| I_{FSM} | 100 A |
| t_{rr} | 200 ns |
| I_R | 10 μ A |
| V_F | 1.25 V |
| T_J max. | 150 °C |
| Package | DO-201AD |
| Diode variation | Single die |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | |
|--|----------------|-------------|-------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | GI850 | GI851 | GI852 | GI854 | GI856 | GI858 | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | V |
| Maximum non-repetitive peak reverse voltage | V_{RSM} | 75 | 150 | 250 | 450 | 650 | 880 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 90$ °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 | GI850 | GI851 | GI852 | GI854 | GI856 | GI858 | UNIT |
| Maximum instantaneous forward voltage | 3.0 A | T _A = 25 °C | V _F | 1.25 | | | | | | V |
| | 9.4 A | T _J = 175 °C | | 1.10 | | | | | | |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | | I _R | 10 | | | | | | μA |
| | T _A = 100 °C | | | 150 | 150 | 200 | 250 | 300 | 500 | |
| Maximum reverse recovery time | I _F = 1.0 A, V _R = 30 V, di/dt = 50 A/μs, I _{rr} = 10 % I _{RM} | | t _{rr} | 200 | | | | | | ns |
| Maximum reverse recovery current | I _F = 1.0 A, V _R = 30 V, di/dt = 50 A/μs, I _{rr} = 10 % I _{RM} | | I _{RM(REC)} | 2.0 | | | | | | A |
| Typical junction capacitance | 4.0 V, 1 MHz | | C _J | 28 | | | | | | pF |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---------------------------------|-------|-------|-------|-------|-------|-------|------|--|
| PARAMETER | SYMBOL | GI850 | GI851 | GI852 | GI854 | GI856 | GI858 | UNIT | |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 22 | | | | | | °C/W | |
| | R _{θJL} ⁽¹⁾ | 8.0 | | | | | | | |

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, with both leads equally heat sink

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GI856-E3/54 | 1.1 | 54 | 1400 | 13" diameter paper tape and reel |
| GI856-E3/73 | 1.1 | 73 | 1000 | Ammo pack packaging |

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

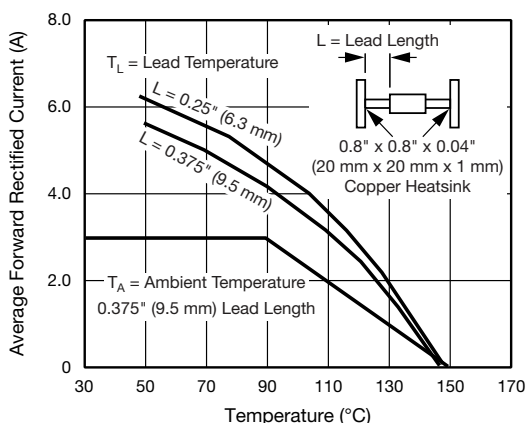


Fig. 1 - Forward Current Derating Curves

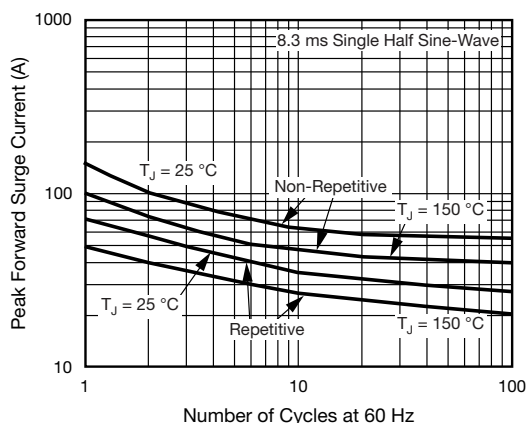


Fig. 2 - Maximum Peak Forward Surge Current

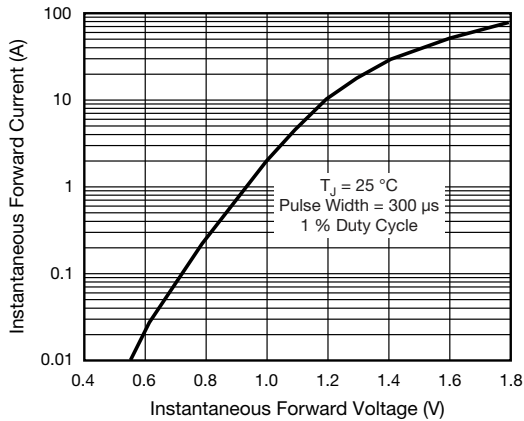


Fig. 3 - Typical Instantaneous Forward Characteristics

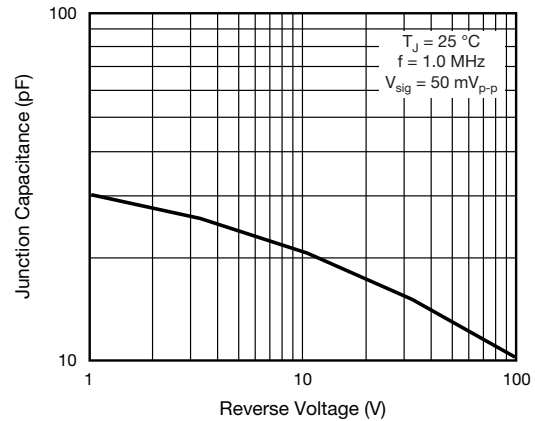


Fig. 5 - Typical Junction Capacitance

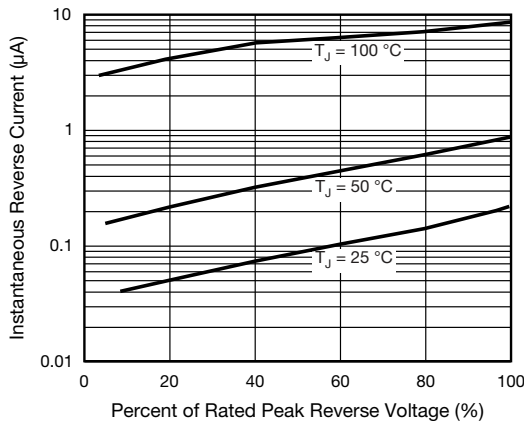
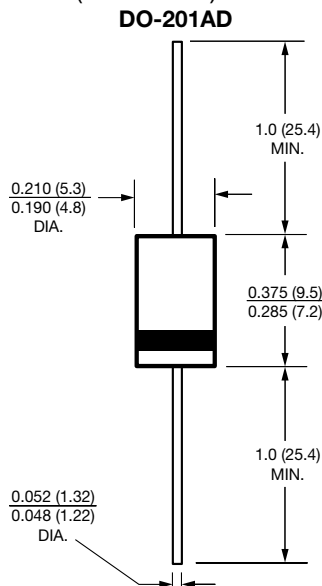


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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