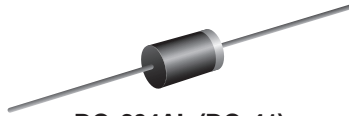




General Purpose Plastic Rectifier



DO-204AL (DO-41)

FEATURES

- 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 general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

MECHANICAL DATA

Case: DO-204AL, 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 | |
|-------------------------|---|
| $I_{F(AV)}$ | 1.0 A |
| V_{RRM} | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| I_{FSM} | 50 A |
| I_R | 1.0 μ A |
| V_F at $I_F = 1.0$ A | 1.0 V, 1.1 V |
| T_J max. | 150 °C |
| Package | DO-204AL (DO-41) |
| Diode variations | Single die |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | | |
|---|----------------|---------------|-------|-------|-------|-------|-------|-------|---------|
| PARAMETER | SYMBOL | M100A | M100B | M100D | M100G | M100J | M100K | M100M | UNIT |
| 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 0.375" (9.5 mm) lead length at $T_A = 100$ °C | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 50 | | | | | | | A |
| Max. full load reverse current full cycle average 0.375" (9.5 mm) lead length at $T_A = 55$ °C | $I_{R(AV)}$ | 100 | | | | | | | μ 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 | M100A | M100B | M100D | M100G | M100J | M100K | M100M | UNIT |
| Max. instantaneous forward voltage | 1.0 A | V_F | 1.0 | | | | 1.1 | | | V |
| Max. DC reverse current at rated DC blocking voltage | $T_A = 25$ °C | I_R | 1.0 | | | | | | | μ A |
| | $T_A = 100$ °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 | | | | | | | μ s |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 15 | | | | | | | pF |



| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | M100A | M100B | M100D | M100G | M100J | M100K | M100M | UNIT |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 50 | | | | | | | °C/W |
| | R _{θJL} ⁽¹⁾ | 25 | | | | | | | |

Note

(1) Thermal resistance from junction to ambient and from junction to lead 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 |
| M100J-E3/54 | 0.33 | 54 | 5500 | 13" diameter paper tape and reel |
| M100J-E3/73 | 0.33 | 73 | 3000 | Ammo pack packaging |

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

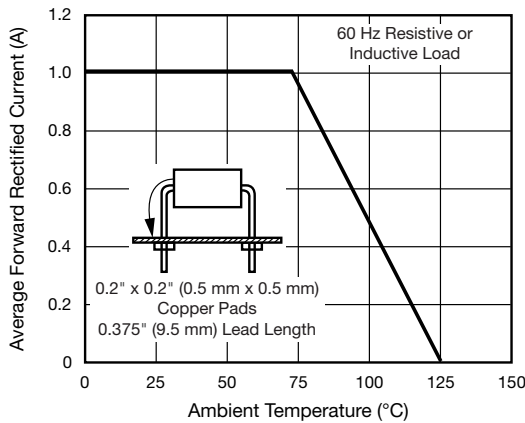


Fig. 1 - Forward Current Derating Curve

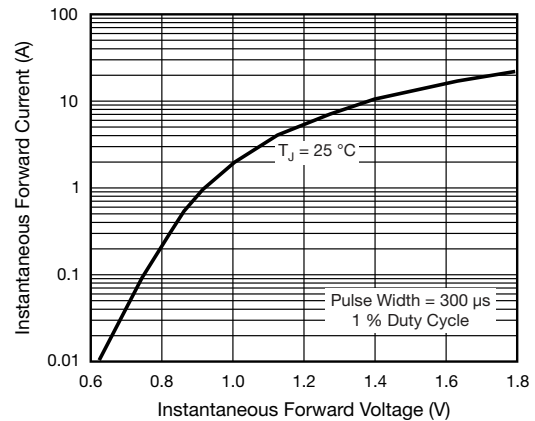


Fig. 3 - Typical Instantaneous Forward Characteristics

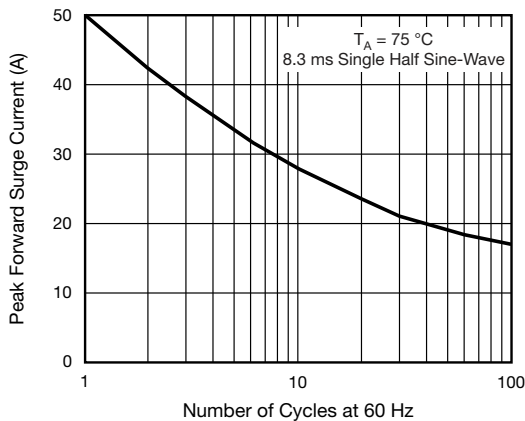


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

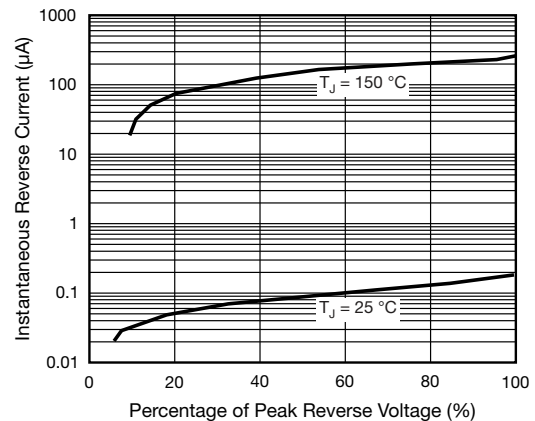


Fig. 4 - Typical Reverse Characteristics

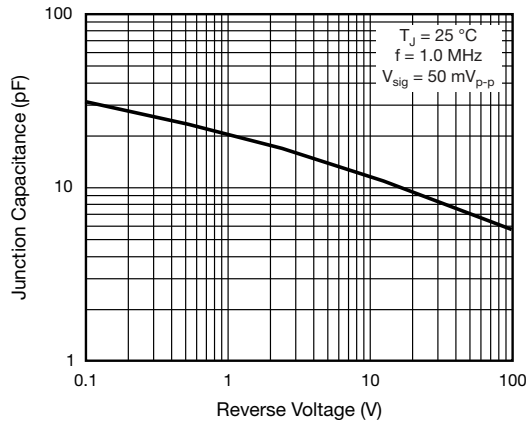


Fig. 5 - Typical Junction Capacitance

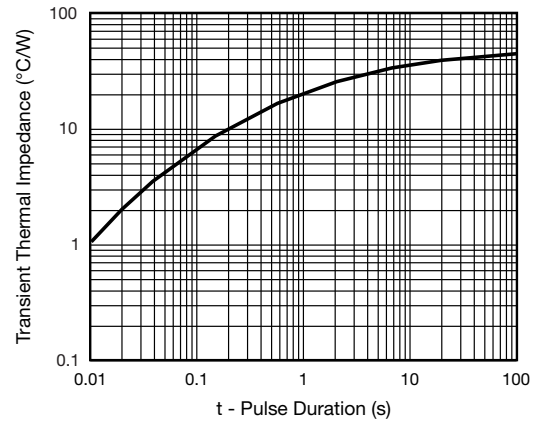
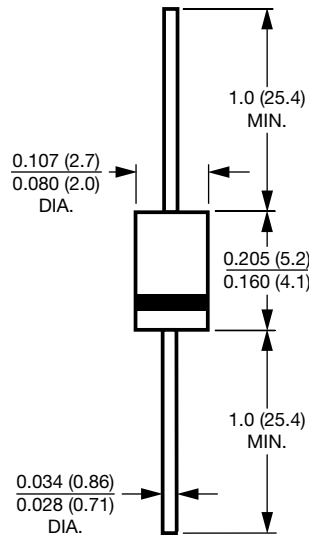


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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