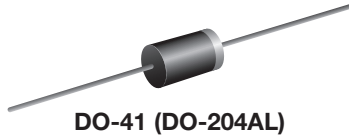


Fast Switching Plastic Rectifier



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

LINKS TO ADDITIONAL RESOURCES



| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------------------------|
| $I_{F(AV)}$ | 1.0 A |
| V_{RRM} | 50 V, 100 V, 200 V, 400 V, 600 V |
| I_{FSM} | 30 A |
| t_{rr} | 200 ns |
| I_R | 5.0 μ A |
| V_F | 1.2 V |
| T_J max. | 150 °C |
| Package | DO-41 (DO-204AL) |
| Circuit configuration | Single |

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-41 (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
3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | |
|---|----------------|-------------|--------|--------|--------|--------|------|----|
| PARAMETER | SYMBOL | 1N4933 | 1N4934 | 1N4935 | 1N4936 | 1N4937 | UNIT | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | V | |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 145 | 280 | 420 | V | |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | V | |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 75$ °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 |
| Maximum reverse recovery current | I_{RM} | 2.0 | | | | | | 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 | 1N4933 | 1N4934 | 1N4935 | 1N4936 | 1N4937 | UNIT |
| Maximum instantaneous forward voltage | 1.0 A | V_F | 1.2 | | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25$ °C | I_R | 5.0 | | | | | μ A |
| | $T_A = 100$ °C | | 100 | | | | | |
| Maximum reverse recovery time | $I_F = 1.0$ A, $V_R = 30$ V, $dI/dt = 50$ A/ μ s, $I_{rr} = 10\%$ I_{RM} | t_{rr} | 200 | | | | | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 12 | | | | | pF |



| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | |
|--|---------------------|--------|--------|--------|--------|--------|--------------------|
| PARAMETER | SYMBOL | 1N4933 | 1N4934 | 1N4935 | 1N4936 | 1N4937 | UNIT |
| Typical thermal resistance | $R_{\theta JA}$ (1) | 55 | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ (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 |
| 1N4933-E3/54 | 0.33 | 54 | 5500 | 13" diameter paper tape and reel |
| 1N4933-E3/73 | 0.33 | 73 | 3000 | Ammo pack packaging |

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

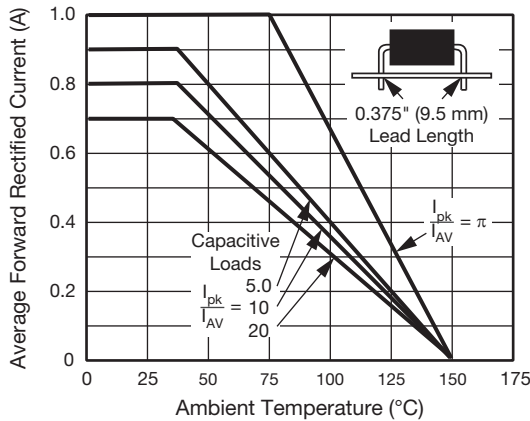


Fig. 1 - Forward Current Derating Curves

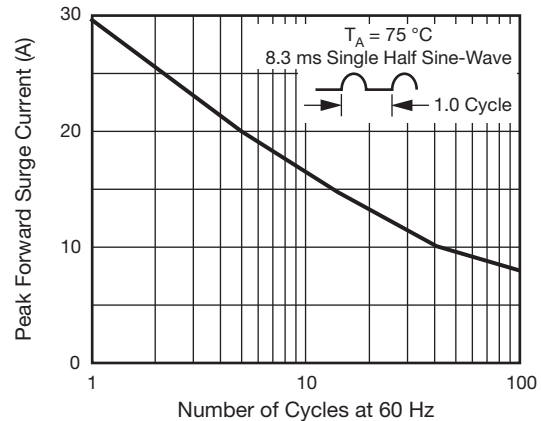


Fig. 3 - Maximum Non-repetitive Peak Forward Surge Current

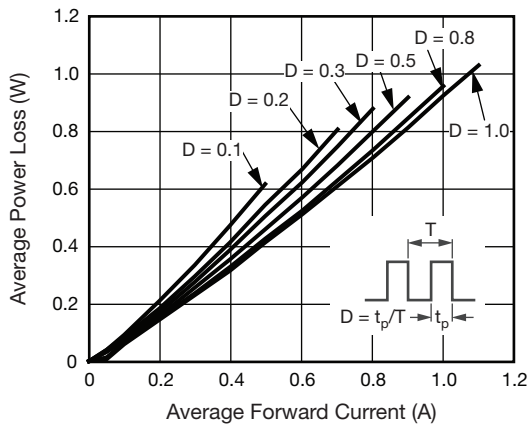


Fig. 2 - Forward Power Loss Characteristics

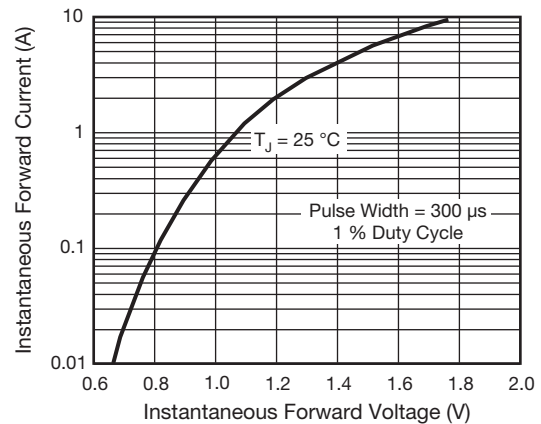


Fig. 4 - Typical Instantaneous Forward Characteristics

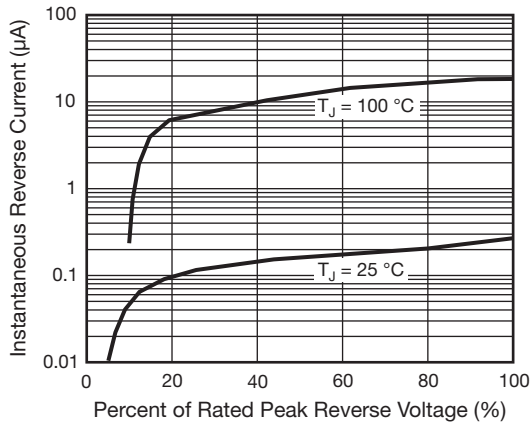


Fig. 5 - Typical Reverse Characteristics

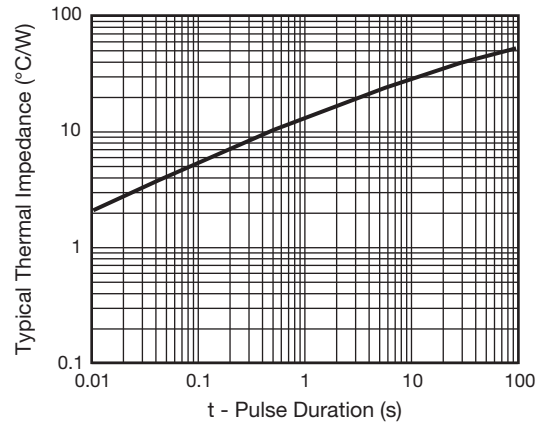


Fig. 7 - Typical Transient Thermal Impedance

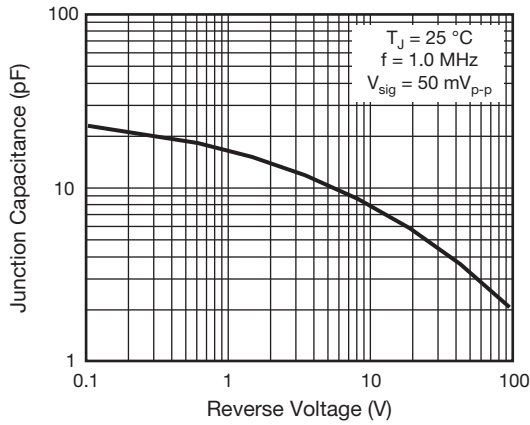
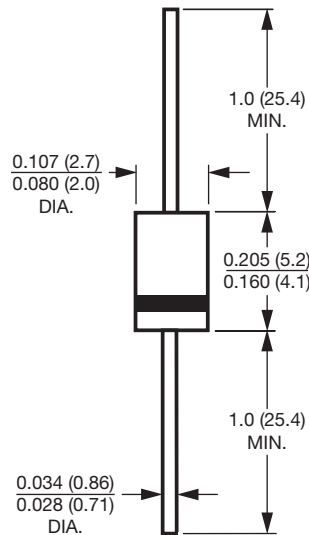


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)



Note

- Lead diameter is $\frac{0.026}{0.023}$ (0.66 / 0.58) for suffix "E" part numbers



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