

1N5391, 1N5392, 1N5393, 1N5394, 1N5395, 1N5396, 1N5397, 1N5398, 1N5399

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Vishay General Semiconductor

General Purpose Plastic Rectifier



| PRIMARY CHARACTERISTICS | | | | | | | | |
|-------------------------|--|--|--|--|--|--|--|--|
| I _{F(AV)} | 1.5 A | | | | | | | |
| V _{RRM} | 50 V, 100 V, 200 V, 300 V, 400 V, 500 V, 600 V, 800 V, 1000 V | | | | | | | |
| I _{FSM} | 50 A | | | | | | | |
| V _F | 1.4 V | | | | | | | |
| I _R | 5.0 μA | | | | | | | |
| T _J max. | 150 °C | | | | | | | |
| Package | DO-41 (DO-204AL) | | | | | | | |
| Circuit configuration | Single | | | | | | | |

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.vishav.com/doc?99912

TYPICAL APPLICATIONS

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

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

E3 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 | 1N5391 | 1N5392 | 1N5393 | 1N5394 | 1N5395 | 1N5396 | 1N5397 | 1N5398 | 1N5399 | UNIT |
| Maximum repetitive peak reverse voltage | V _{RRM} | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 210 | 280 | 350 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 0.500" (12.7 mm) lead length at T _L = 70 °C | I _{F(AV)} | | 1.5 | | | | | | | А | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | | 50 | | | | | | | А | |
| Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_L = 70$ °C | I _{R(AV)} | 300 | | | | | | | μA | | |
| Operation junction and storage temperature range | T _J , T _{STG} | | | | - | 50 to +15 | 0 | | | | °C |

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| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | | | | | |
|---|----------------------------|------------------------------------|-----------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| PARAMETER | TEST C | CONDITIONS | SYMBOL | 1N5391 | 1N5392 | 1N5393 | 1N5394 | 1N5395 | 1N5396 | 1N5397 | 1N5398 | 1N5399 | UNIT |
| Maximum instantaneous forward voltage | 1.5 A | T _A = 70 °C | V _F | 1.4 | | | | | • | ٧ | | | |
| Maximum DC reverse | | T _A = 25 °C | | I _R 300 | | | | | | | | | |
| current at rated DC blocking voltage | | T _A = 150 °C | | | | | | | | - μA | | | |
| Typical reverse recovery time | $I_F = 0.5$ $I_{rr} = 0.2$ | A, I _R = 1.0 A, 25 A | t _{rr} | 2.0 | | | | | | μs | | | |
| Typical junction capacitance | 4.0 V, 1 | l MHz | CJ | 15 | | | | | pF | | | | |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | | |
|---|---------------------------------|--|----|--|--|--|--|--|------|------|
| PARAMETER | SYMBOL | YMBOL 1N5391 1N5392 1N5393 1N5394 1N5395 1N5396 1N5397 1N5398 1N5399 UNI | | | | | | | UNIT | |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | | 55 | | | | | | | °C/W |
| Typical thermal resistance | R ₀ JL (1) | | 25 | | | | | | C/VV | |

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 | | | | | |
| 1N5391-E3/54 | 0.336 | 54 | 5500 | 13" diameter paper tape and reel | | | | | |
| 1N5391-E3/73 | 0.336 | 73 | 3000 | Ammo pack packaging | | | | | |

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

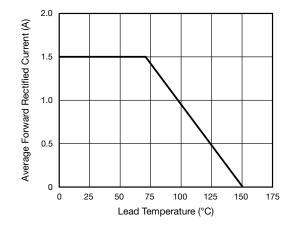


Fig. 1 - Forward Current Derating Curve

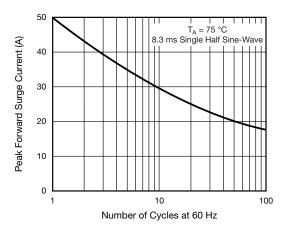


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

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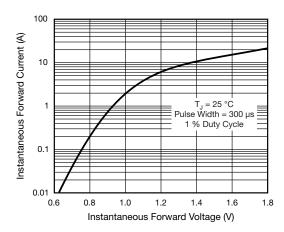


Fig. 3 - Typical Instantaneous Forward Characteristics

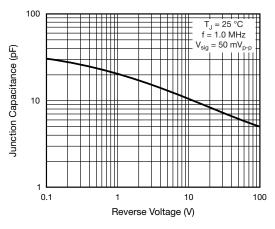


Fig. 5 - Typical Junction Capacitance

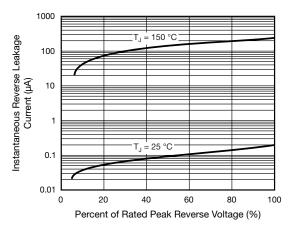


Fig. 4 - Typical Reverse Characteristics

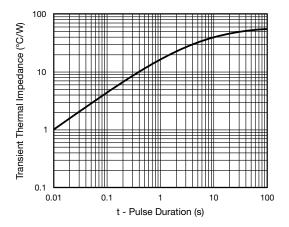
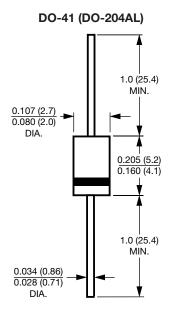


Fig. 6 - Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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