

# 1N5391/S - 1N5399/S

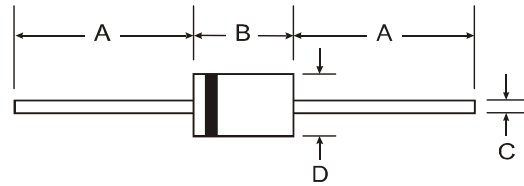
1.5A RECTIFIER

## Features

- Fast Switching for High Efficiency
- High Current Capability and Low Forward Voltage Drop
- Low Reverse Leakage Current
- Surge Overload Rating to 50A Peak
- **Lead Free Finish, RoHS Compliant (Note 3)**

## Mechanical Data

- Case: DO-41, DO-15
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Tin. Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: Cathode Band
- Ordering Information: See Last Page
- Marking: Type Number
- Weight: DO-41 0.30 grams (approximate)  
DO-15 0.40 grams (approximate)



| Dim                  | DO-41 Plastic |       | DO-15 |       |
|----------------------|---------------|-------|-------|-------|
|                      | Min           | Max   | Min   | Max   |
| A                    | 25.40         | —     | 25.40 | —     |
| B                    | 4.06          | 5.21  | 5.50  | 7.62  |
| C                    | 0.71          | 0.864 | 0.686 | 0.889 |
| D                    | 2.00          | 2.72  | 2.60  | 3.60  |
| All Dimensions in mm |               |       |       |       |

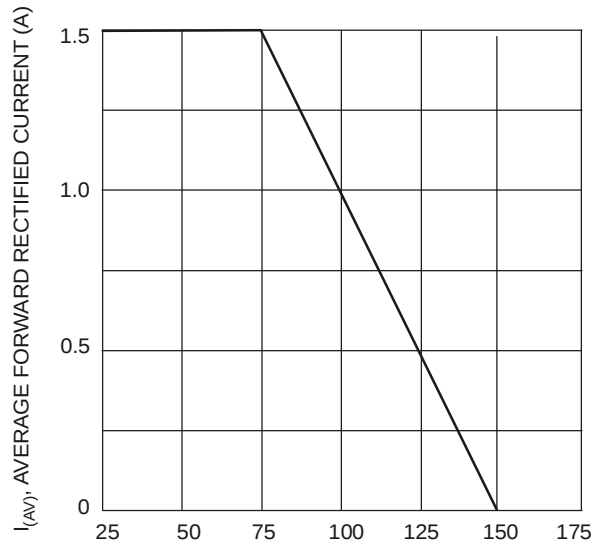
"S" Suffix Designates DO-41 Package  
No Suffix Designates DO-15 Package

## Maximum Ratings and Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

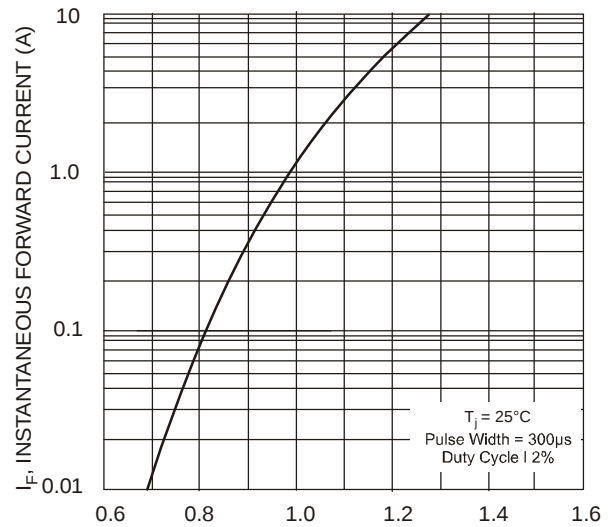
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic                                                                                      | Symbol                            | 1N<br>5391/S | 1N<br>5392/S | 1N<br>5393/S | 1N<br>5395/S | 1N<br>5397/S | 1N<br>5398/S | 1N<br>5399/S | Unit |
|-----------------------------------------------------------------------------------------------------|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------|
| Peak Repetitive Reverse Voltage                                                                     | V <sub>RRM</sub>                  |              |              |              |              |              |              |              |      |
| Working Peak Reverse Voltage                                                                        | V <sub>RWM</sub>                  | 50           | 100          | 200          | 400          | 600          | 800          | 1000         | V    |
| DC Blocking Voltage                                                                                 | V <sub>R</sub>                    |              |              |              |              |              |              |              |      |
| RMS Reverse Voltage                                                                                 | V <sub>R(RMS)</sub>               | 35           | 70           | 140          | 280          | 420          | 560          | 700          | V    |
| Average Rectified Output Current<br>(Note 1) @ T <sub>A</sub> = 70°C                                | I <sub>O</sub>                    | 1.5          |              |              |              |              |              |              | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>single half sine-wave superimposed on rated load | I <sub>FSM</sub>                  | 50           |              |              |              |              |              |              | A    |
| Forward Voltage Drop @ I <sub>F</sub> = 1.5A                                                        | V <sub>FM</sub>                   | 1.1          |              |              |              |              |              |              | V    |
| Peak Reverse Leakage Current @ T <sub>A</sub> = 25°C                                                | I <sub>RM</sub>                   | 5.0          |              |              |              |              |              |              | μA   |
| at Rated DC Blocking Voltage @ T <sub>A</sub> = 100°C                                               |                                   | 50           |              |              |              |              |              |              |      |
| Typical Total Capacitance (Note 2)                                                                  | C <sub>T</sub>                    | 20           |              |              |              |              |              |              | pF   |
| Typical Thermal Resistance Junction to Lead                                                         | R <sub>θJL</sub>                  | 25           |              |              |              |              |              |              | °C/W |
| Typical Thermal Resistance Junction to Ambient (Note 1)                                             | R <sub>θJA</sub>                  | 55           |              |              |              |              |              |              | °C/W |
| Operating and Storage Temperature Range                                                             | T <sub>j</sub> , T <sub>STG</sub> | -65 to +150  |              |              |              |              |              |              | °C   |

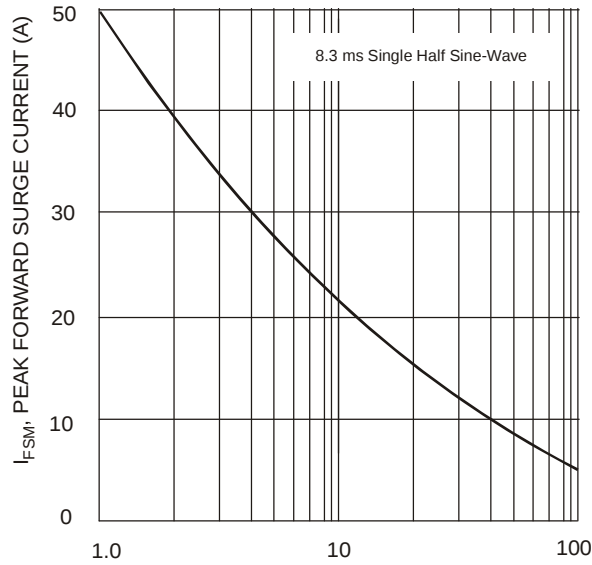
- Notes: 1. Leads maintained at ambient temperature at a distance of 9.5mm from the case.  
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.  
3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see EU Directive Annex Notes 5 and 7.



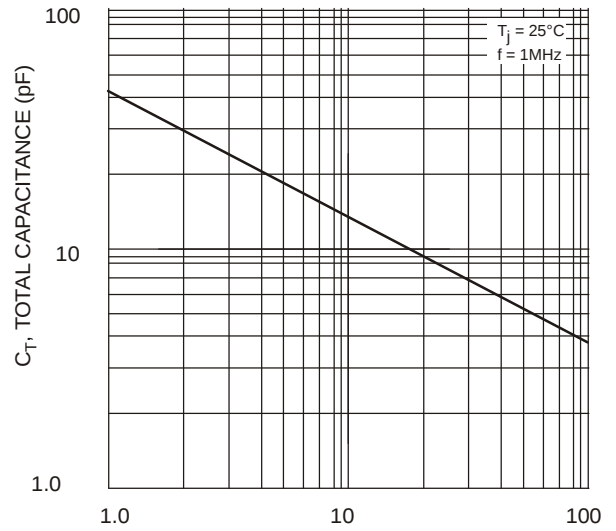
$T_A$  AMBIENT TEMPERATURE (°C)  
Fig. 1, Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



NUMBER OF CYCLES AT 60Hz  
Fig. 3 Maximum Non-Repetitive Peak Forward Surge Current



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Total Capacitance

## Ordering Information (Note 4)

| Device    | Packaging | Shipping                |
|-----------|-----------|-------------------------|
| 1N5391-B  | DO-15     | 1K/Bulk                 |
| 1N5391-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5391S-A | DO-41     | 5K/Ammo Pack            |
| 1N5391S-B | DO-41     | 1K/Bulk                 |
| 1N5391S-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5392-B  | DO-15     | 1K/Bulk                 |
| 1N5392-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5392S-A | DO-41     | 5K/Ammo Pack            |
| 1N5392S-B | DO-41     | 1K/Bulk                 |
| 1N5392S-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5393-B  | DO-15     | 1K/Bulk                 |
| 1N5393-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5393S-A | DO-41     | 5K/Ammo Pack            |
| 1N5393S-B | DO-41     | 1K/Bulk                 |
| 1N5393S-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5395-B  | DO-15     | 1K/Bulk                 |
| 1N5395-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5395S-A | DO-41     | 5K/Ammo Pack            |
| 1N5395S-B | DO-41     | 1K/Bulk                 |
| 1N5395S-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5397-B  | DO-15     | 1K/Bulk                 |
| 1N5397-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5397S-A | DO-41     | 5K/Ammo Pack            |
| 1N5397S-B | DO-41     | 1K/Bulk                 |
| 1N5397S-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5398-B  | DO-15     | 1K/Bulk                 |
| 1N5398-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5398S-A | DO-41     | 5K/Ammo Pack            |
| 1N5398S-B | DO-41     | 1K/Bulk                 |
| 1N5398S-T | DO-41     | 5K/Tape & Reel, 13-inch |
| 1N5399-B  | DO-15     | 1K/Bulk                 |
| 1N5399-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| 1N5399S-A | DO-41     | 5K/Ammo Pack            |
| 1N5399S-B | DO-41     | 1K/Bulk                 |
| 1N5399S-T | DO-41     | 5K/Tape & Reel, 13-inch |

Notes: 4. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

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