

## DO-41 Plastic-Encapsulate Diodes

### Super Fast Recovery Rectifier Diode

#### Features

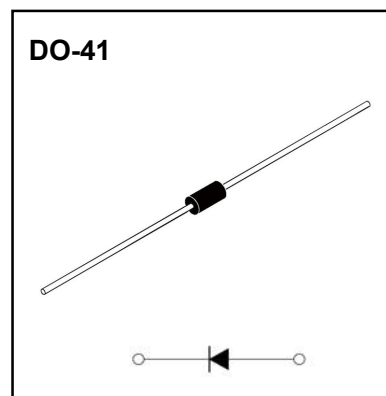
- $I_o$  1A
- $V_{RRM}$  50V-600V
- High surge current capability
- Polarity: Color band denotes cathode

#### Applications

- Rectifier

#### Marking

- SF1X  
X: From 1 to 8



#### Limiting Values (Absolute Maximum Rating)

| Item                                 | Symbol      | Unit             | Conditions   | SF         |     |     |     |     |     |     |     |  |  |
|--------------------------------------|-------------|------------------|--|------------|-----|-----|-----|-----|-----|-----|-----|--|--|
|                                      |             |                  |  | 11         | 12  | 13  | 14  | 15  | 16  | 17  | 18  |  |  |
| Repetitive Peak Reverse Voltage      | $V_{RRM}$   | V                |  | 50         | 100 | 150 | 200 | 300 | 400 | 500 | 600 |  |  |
| Maximum RMS Voltage                  | $V_{RMS}$   | V                |  | 35         | 70  | 105 | 140 | 210 | 280 | 350 | 420 |  |  |
| Average Forward Current              | $I_{F(AV)}$ | A                | 60Hz Half-sine wave, Resistance load, $T_a=50^\circ\text{C}$ | 1.0        |     |     |     |     |     |     |     |  |  |
| Surge(Non-repetitive)Forward Current | $I_{FSM}$   | A                | 60Hz Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$         | 30         |     |     |     |     |     |     |     |  |  |
| Junction Temperature                 | $T_J$       | $^\circ\text{C}$ |  | -55~+125   |     |     |     |     |     |     |     |  |  |
| Storage Temperature                  | $T_{STG}$   | $^\circ\text{C}$ |  | -55 ~ +150 |     |     |     |     |     |     |     |  |  |

#### Electrical Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

| Item                        | Symbol           | Unit               | Test Condition   | SF                      |    |    |    |      |    |     |    |
|-----------------------------|------------------|--------------------|--|-------------------------|----|----|----|------|----|-----|----|
|                             |                  |                    |  | 11                      | 12 | 13 | 14 | 15   | 16 | 17  | 18 |
| Peak Forward Voltage        | $V_{FM}$         | V                  | $I_{FM}=1.0\text{A}$                                       | 0.95                    |    |    |    | 1.25 |    | 1.7 |    |
| Peak Reverse Current        | $I_{RRM1}$       | $\mu\text{A}$      | $V_{RM}=V_{RRM}$   | $T_a=25^\circ\text{C}$  |    |    |    | 5    |    |     |    |
|                             | $I_{RRM2}$       |                    |  | $T_a=125^\circ\text{C}$ |    |    |    | 50   |    |     |    |
| Reverse Recovery time       | $t_r$            | ns                 | $I_F=0.5\text{A}$ $I_R=1\text{A}$<br>$I_{RR}=0.25\text{A}$ | 35                      |    |    |    |      |    |     |    |
| Thermal Resistance(Typical) | $R_{\theta J-A}$ | $^\circ\text{C/W}$ | Between junction and ambient                               | 55                      |    |    |    |      |    |     |    |
|                             | $R_{\theta J-L}$ |                    | Between junction and lead                                  | 25                      |    |    |    |      |    |     |    |

## Typical Characteristics

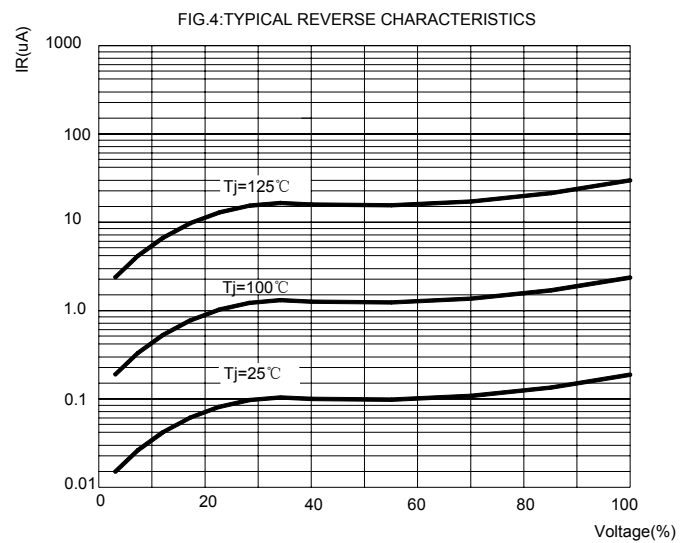
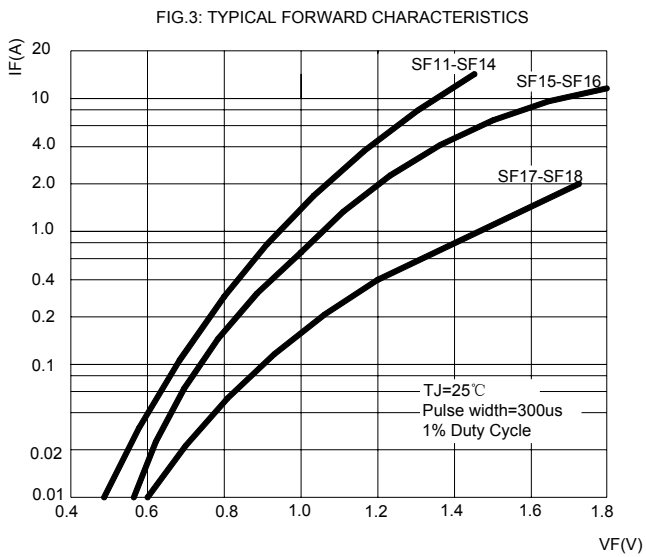
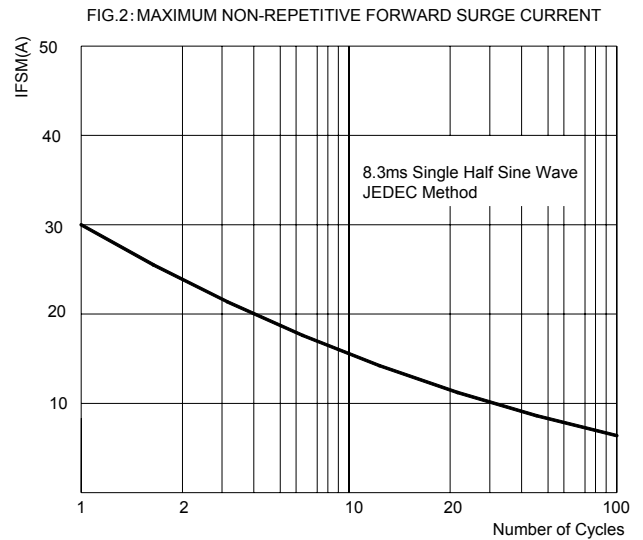
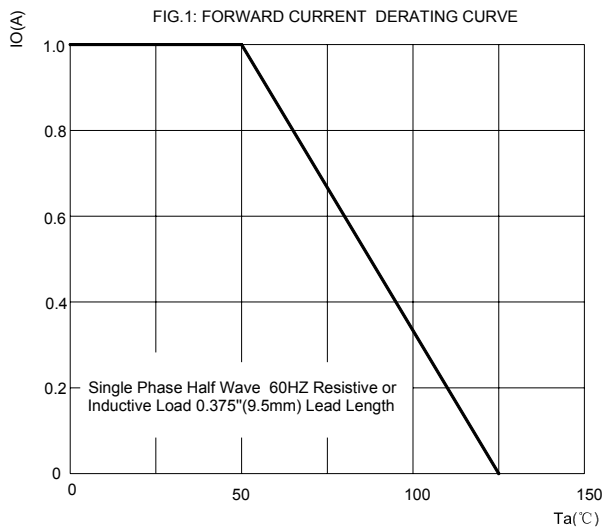
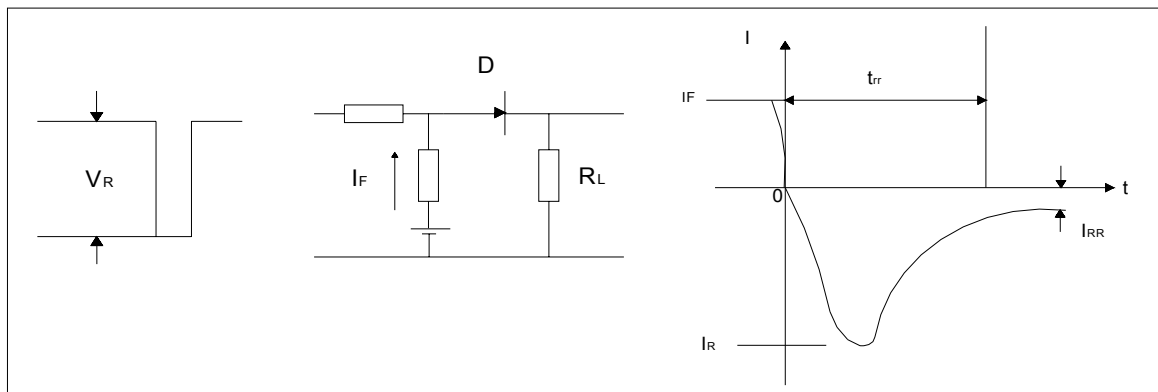
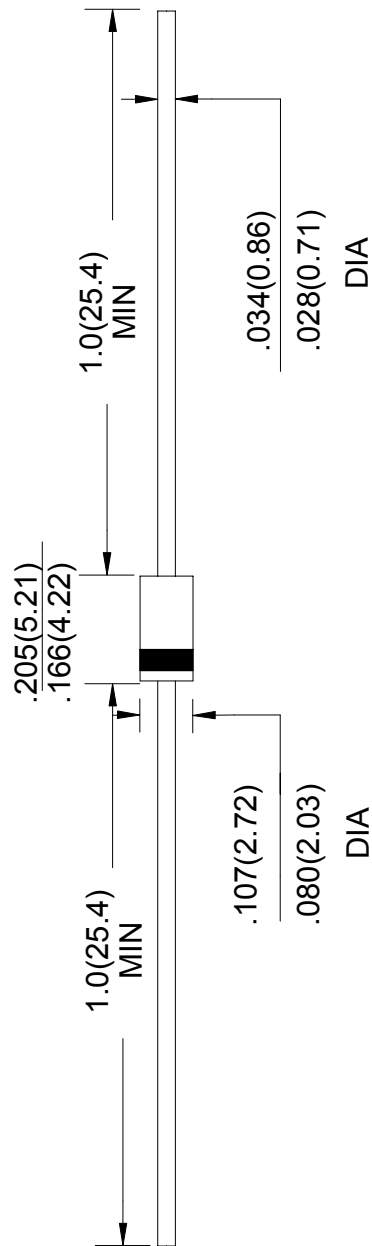


FIG. 5: Diagram of circuit and Testing wave form of reverse recovery time



**DO-41 Package Outline Dimensions**

Unit: in inches (millimeters)

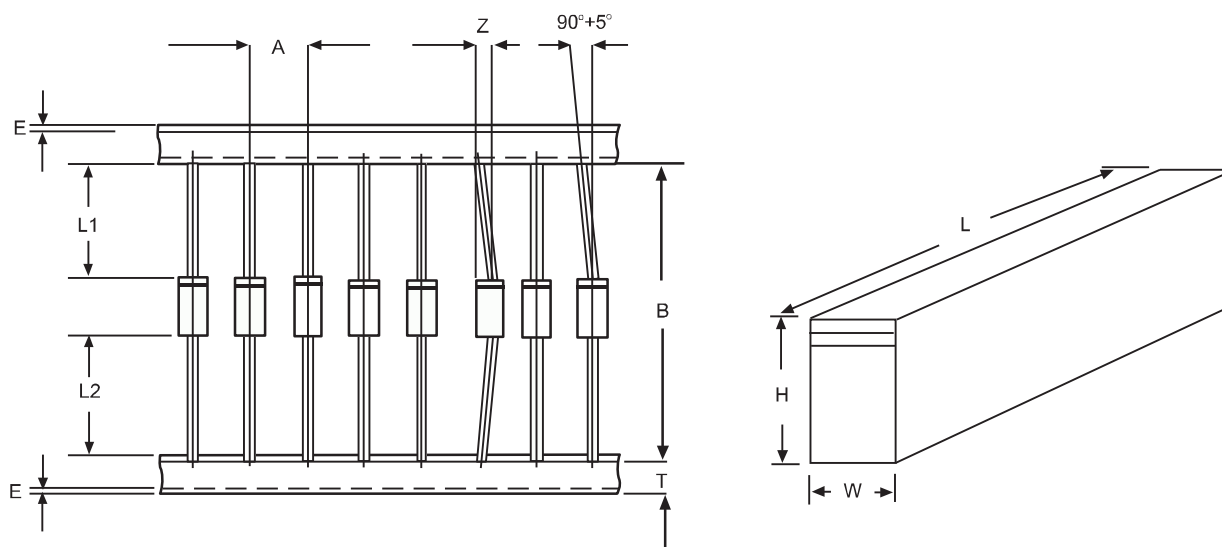
**NOTICE**

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## Ammo Box Packaging Specifications For Axial Lead Rectifiers

Axial lead devices are packed in accordance with EIA standard RS-296-D and specifications given below

| COMPONENT OUTLINE | COMPONENT PITCH A          | INNER TAPE PITCH B      | CUMULATIVE PITCH TOLERANCE |
|-------------------|----------------------------|-------------------------|----------------------------|
|                   | $\pm 0.5\text{mm}(.020'')$ | $+0.5\text{mm}(.020'')$ |                            |
| R-1               | 5.0mm                      | 26.0mm                  | 2.0mm/20pitch              |
| R-1               | 5.0mm                      | 52.4mm                  | 2.0mm/10pitch              |
| A-405             | 5.0mm                      | 26.0mm                  | 2.0mm/20pitch              |
| A-405             | 5.0mm                      | 52.4mm                  | 2.0mm/10pitch              |
| DO-34/DO-35       | 5.0mm                      | 26.0mm                  | 2.0mm/20pitch              |
| DO-34/DO-35       | 5.0mm                      | 52.4mm                  | 2.0mm/10pitch              |
| DO-41             | 5.0mm                      | 26.0mm                  | 2.0mm/20pitch              |
| DO-41             | 5.0mm                      | 52.4mm                  | 2.0mm/10pitch              |
| DO-15             | 5.0mm                      | 52.4mm                  | 2.0mm/10pitch              |
| DO-27             | 10.0mm                     | 52.4mm                  | 2.0mm/10pitch              |
| R-6               | 10.0mm                     | 52.4mm                  | 2.0mm/10pitch              |



| ITEM                | SYMBOL    | SPECIFICATIONS(mm) | SPECIFICATIONS(inch) |
|---------------------|-----------|--------------------|----------------------|
| Component alignment | Z         | 1.2max             | 0.048max             |
| Tape width          | T         | $6.0\pm 0.4$       | $0.236\pm 0.016$     |
| Exposed adhesive    | E         | 0.8max             | 0.032max             |
| Body eccentricity   | $ L1-L2 $ | 1.0max             | 0.040max             |
| Box length          | L         | $255.0\pm 5.0$     | $10.04\pm 0.197$     |
| Box width           | W         | $78.0\pm 5.0$      | $3.07\pm 0.197$      |
| Box height          | H         | $150.0\pm 5.0$     | $5.91\pm 0.197$      |

NOTE: Each component lead shall be sandwiched between tapes for a minimum of 3.2mm(0.126'')