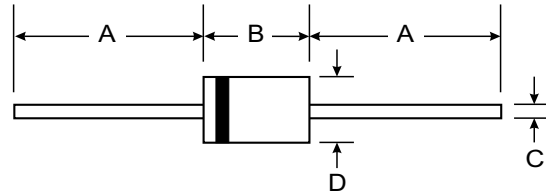


### Features

- Diffused Junction
- Fast Switching for High Efficiency
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 50A Peak
- Low Reverse Leakage Current
- Plastic Material: UL Flammability Classification Rating 94V-0



### Mechanical Data

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking: Type Number
- DO-41 Weight: 0.3 grams (approx.)
- DO-15 Weight: 0.4 grams (approx.)

|                      | DO-41 Plastic |       | DO-15 |       |
|----------------------|---------------|-------|-------|-------|
| Dim                  | 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

| Characteristic                                                                                                        | Symbol                          | PR 1501/S   | PR 1502/S | PR 1503/S | PR 1504/S | PR 1505/S | Unit             |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|-----------|-----------|-----------|-----------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50          | 100       | 200       | 400       | 600       | V                |
| RMS Reverse Voltage                                                                                                   | $V_{R(RMS)}$                    | 35          | 70        | 140       | 280       | 420       | V                |
| Average Rectified Output Current<br>(Note 1) @ $T_A = 50^\circ\text{C}$                                               | $I_O$                           | 1.5         |           |           |           |           | A                |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load<br>(JEDEC Method) | $I_{FSM}$                       | 50          |           |           |           |           | A                |
| Forward Voltage @ $I_F = 1.5\text{A}$                                                                                 | $V_{FM}$                        | 1.2         |           |           |           |           | V                |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$           | $I_{RM}$                        | 5.0<br>100  |           |           |           |           | $\mu\text{A}$    |
| Reverse Recovery Time (Note 3)                                                                                        | $t_{rr}$                        | 150         |           |           |           | 250       | ns               |
| Typical Junction Capacitance (Note 2)                                                                                 | $C_j$                           | 20          |           |           |           | 10        | pF               |
| Typical Thermal Resistance Junction to Ambient                                                                        | $R_{\theta JA}$                 | 35          |           |           |           |           | K/W              |
| Operating and Storage Temperature Range                                                                               | $T_j, T_{STG}$                  | -65 to +150 |           |           |           |           | $^\circ\text{C}$ |

- Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ . See figure 5.

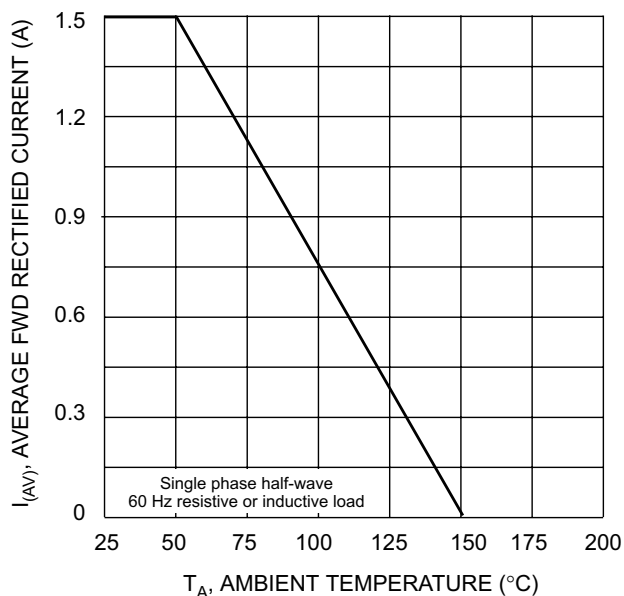


Fig. 1 Forward Derating Curve

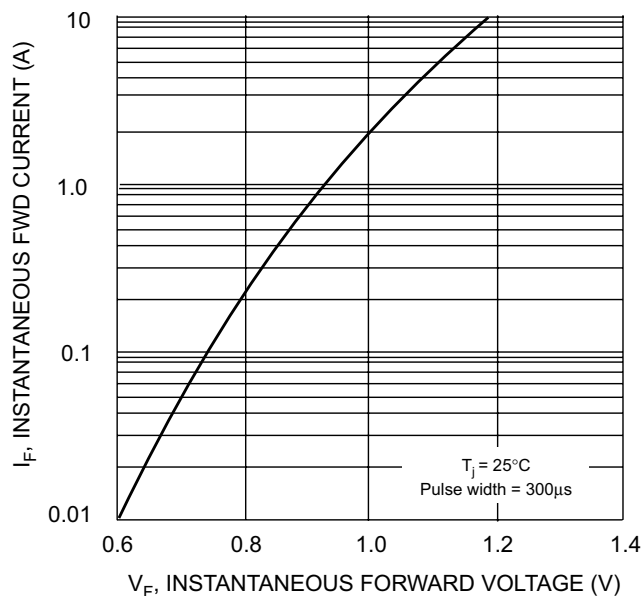


Fig. 2 Typical Forward Characteristics

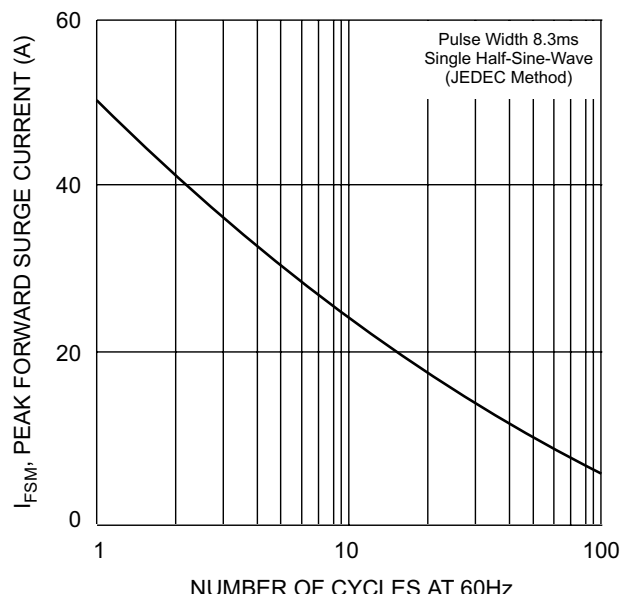


Fig. 3 Peak Forward Surge Current

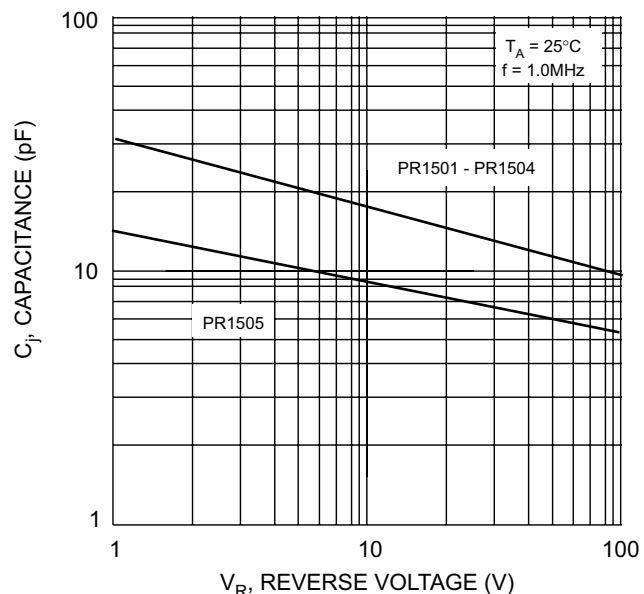
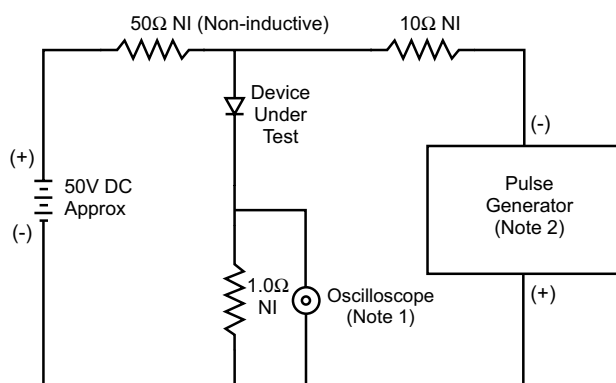
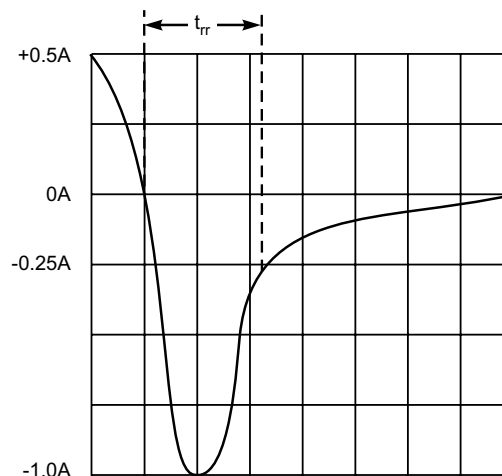


Fig. 4 Typical Junction Capacitance



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit