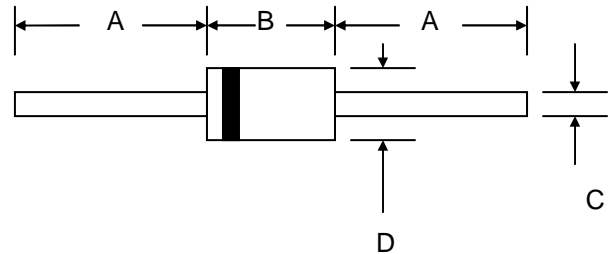


### Features

- Diffused Junction
- Low Forward Voltage Drop
- High Current Capability
- High Reliability
- High Surge Current Capability



### Mechanical Data

- Case: DO-41, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.34 grams (approx.)
- Mounting Position: Any
- Marking: Type Number
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 4**

| DO-41                |      |       |
|----------------------|------|-------|
| Dim                  | Min  | Max   |
| A                    | 25.4 | —     |
| B                    | 4.06 | 5.21  |
| C                    | 0.71 | 0.864 |
| D                    | 2.00 | 2.72  |
| All Dimensions in mm |      |       |

### 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       | FR101       | FR102 | FR103 | FR104 | FR105 | FR106 | FR107 | Unit             |
|--|--------------|-------------|-------|-------|-------|-------|-------|-------|------------------|
| Peak Repetitive Reverse Voltage  | $V_{RRM}$    | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| Working Peak Reverse Voltage   | $V_{RWM}$    |             |       |       |       |       |       |       |                  |
| DC Blocking Voltage  | $V_R$        |             |       |       |       |       |       |       |                  |
| RMS Reverse Voltage  | $V_{R(RMS)}$ | 35          | 70    | 140   | 280   | 420   | 560   | 700   | V                |
| Average Rectified Output Current (Note 1)  | $I_O$        | 1.0         |       |       |       |       |       |       | A                |
| $@T_A = 55^\circ\text{C}$  |              |             |       |       |       |       |       |       |                  |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$    | 30          |       |       |       |       |       |       | A                |
| Forward Voltage  | $V_{FM}$     | 1.2         |       |       |       |       |       |       | V                |
| $@I_F = 1.0\text{A}$   |              |             |       |       |       |       |       |       |                  |
| Peak Reverse Current   | $I_{RM}$     | 5.0         |       |       |       |       |       |       | $\mu\text{A}$    |
| $@T_A = 25^\circ\text{C}$  |              |             |       |       |       |       |       |       |                  |
| At Rated DC Blocking Voltage   | $I_{RM}$     | 100         |       |       |       |       |       |       | $\mu\text{A}$    |
| $@T_A = 100^\circ\text{C}$   |              |             |       |       |       |       |       |       |                  |
| Reverse Recovery Time (Note 2)   | $t_{rr}$     | 150         |       |       |       | 250   | 500   |       | nS               |
| Typical Junction Capacitance (Note 3)  | $C_j$        | 15          |       |       |       |       |       |       | pF               |
| Operating Temperature Range  | $T_j$        | -65 to +150 |       |       |       |       |       |       | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_{STG}$    | -65 to +150 |       |       |       |       |       |       | $^\circ\text{C}$ |

Note: 1. Leads maintained at ambient temperature at a distance of 9.5mm from the case  
2. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ . See figure 5.  
3. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

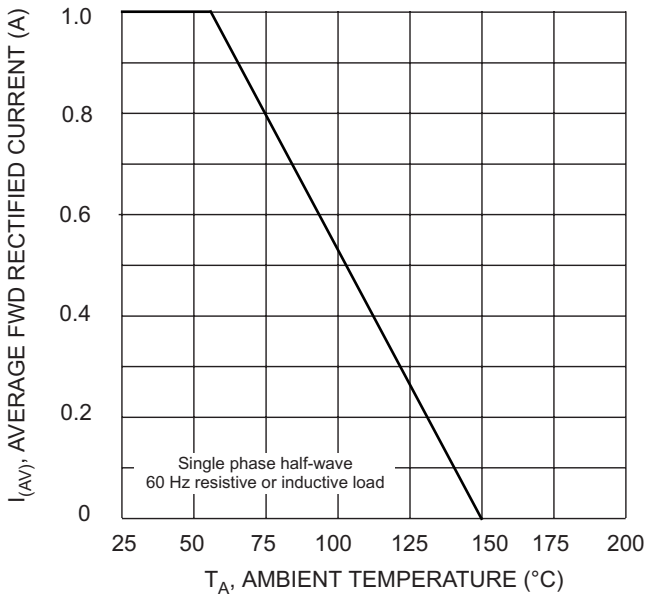


Fig. 1 Forward Derating Curve

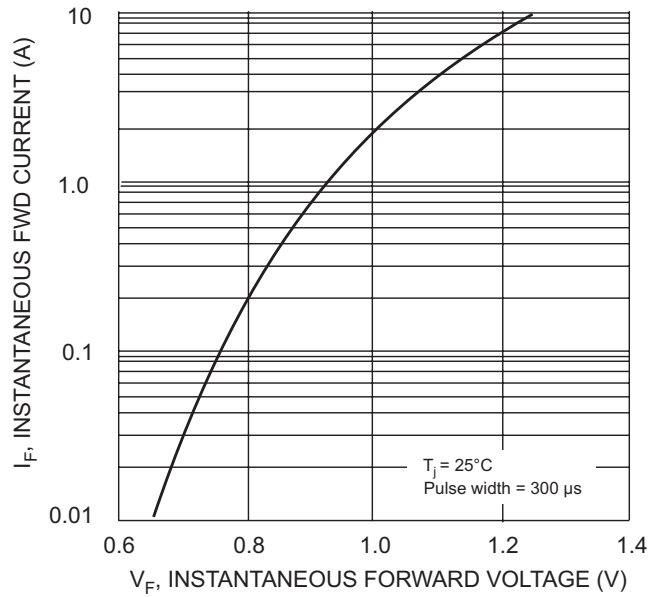


Fig. 2 Typical Forward Characteristics

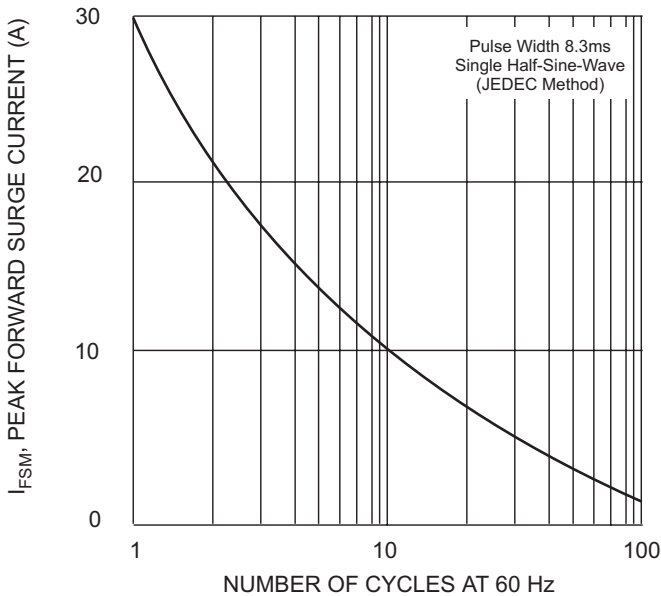


Fig. 3 Peak Forward Surge Current

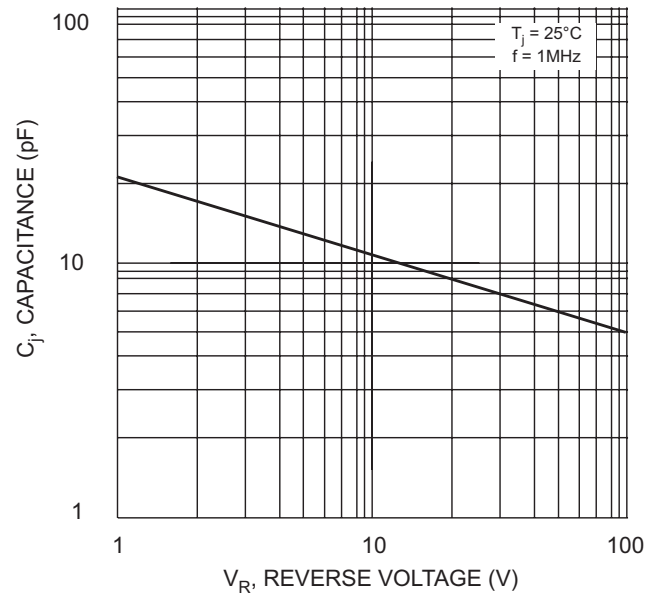
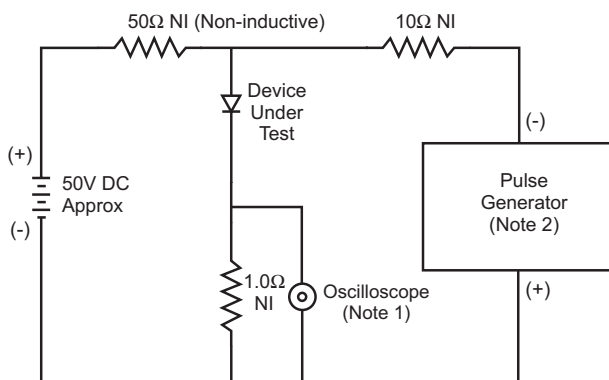
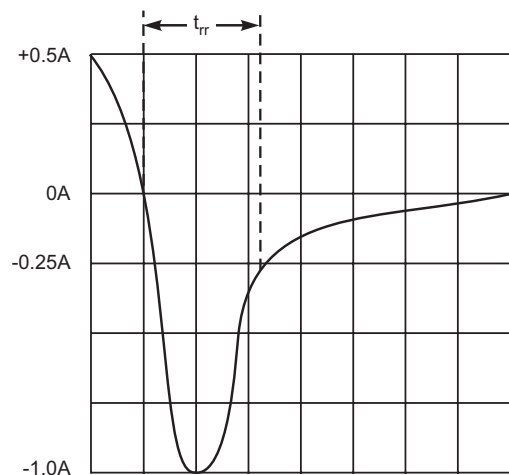


Fig. 4 Typical Junction Capacitance



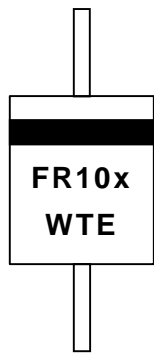
- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 5/10ns/cm

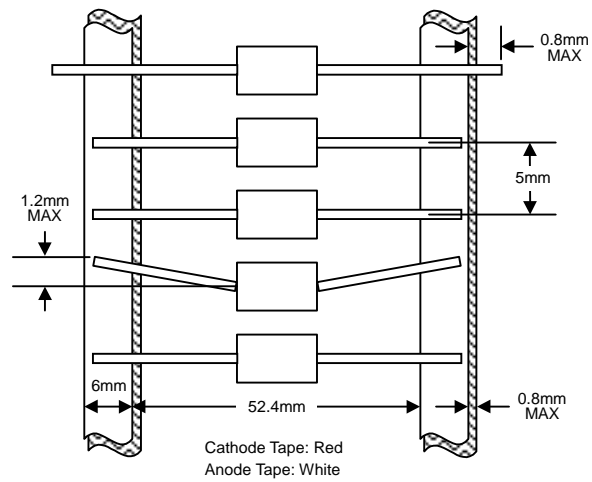
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## MARKING INFORMATION

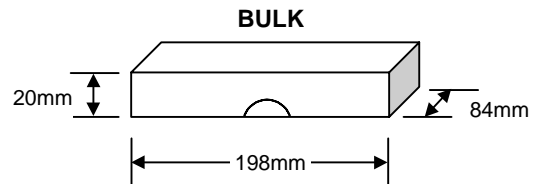
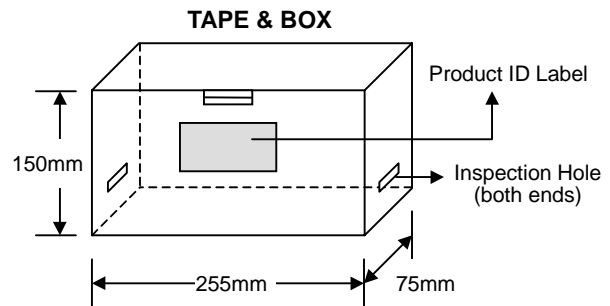
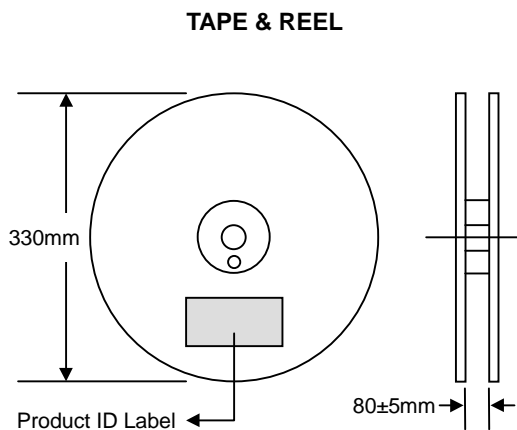


Cathode = Polarity Band  
 FR10x = Device Number  
 x = 1, 2, 3, 4, 5, 6 or 7  
 WTE = Manufacturer's Logo

## TAPING SPECIFICATIONS



## PACKAGING INFORMATION



| Packaging              | Reel Diameter / Box Size (mm) | Quantity (PCS) | Carton Size (mm) | Quantity (PCS) | Approx. Gross Weight (KG) |
|------------------------|-------------------------------|----------------|------------------|----------------|---------------------------|
| <b>TAPE &amp; REEL</b> | 330                           | 5,000          | 370 x 370 x 420  | 25,000         | 13.0                      |
| <b>TAPE &amp; BOX</b>  | 255 x 75 x 150                | 5,000          | 400 x 273 x 415  | 50,000         | 21.0                      |
| <b>BULK</b>            | 198 x 84 x 20                 | 1,000          | 459 x 214 x 256  | 50,000         | 19.5                      |

**Note:** 1. Paper reel, white or gray color. Core material: plastic or metal.  
 2. Components are packed in accordance with EIA standard RS-296-E.

## ORDERING INFORMATION

| Product No.     | Package Type | Shipping Quantity |
|-----------------|--------------|-------------------|
| FR101-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR101-TB</b> | DO-41        | 5000/Tape & Box   |
| FR101           | DO-41        | 1000 Units/Box    |
| FR102-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR102-TB</b> | DO-41        | 5000/Tape & Box   |
| FR102           | DO-41        | 1000 Units/Box    |
| FR103-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR103-TB</b> | DO-41        | 5000/Tape & Box   |
| FR103           | DO-41        | 1000 Units/Box    |
| FR104-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR104-TB</b> | DO-41        | 5000/Tape & Box   |
| FR104           | DO-41        | 1000 Units/Box    |
| FR105-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR105-TB</b> | DO-41        | 5000/Tape & Box   |
| FR105           | DO-41        | 1000 Units/Box    |
| FR106-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR106-TB</b> | DO-41        | 5000/Tape & Box   |
| FR106           | DO-41        | 1000 Units/Box    |
| FR107-T3        | DO-41        | 5000/Tape & Reel  |
| <b>FR107-TB</b> | DO-41        | 5000/Tape & Box   |
| FR107           | DO-41        | 1000 Units/Box    |

1. Products listed in **bold** are WTE **Preferred** devices.
2. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
3. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, FR101-TB-LF.**

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**WARNING: DO NOT USE IN LIFE SUPPORT EQUIPMENT.** WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

**Won-Top Electronics Co., Ltd.**

No. 44 Yu Kang North 3rd Road, Chine Chen Dist., Kaohsiung, Taiwan

**Phone:** 886-7-822-5408 or 886-7-822-5410

**Fax:** 886-7-822-5417

**Email:** sales@wontop.com

**Internet:** http://www.wontop.com

*We power your everyday.*