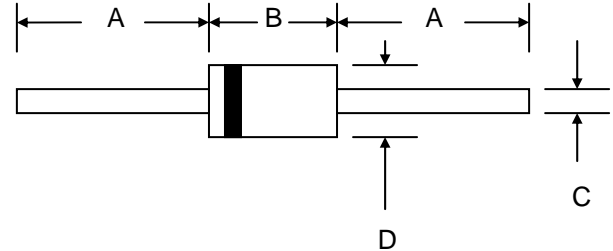


## Features

- Diffused Junction
- Low Forward Voltage Drop
- High Surge Current Capability
- High Reliability
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes



## Mechanical Data

- Case: DO-41, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.35 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       | SF11        | SF12 | SF13 | SF14 | SF15 | SF16 | SF17 | Unit                      |
|---|--------------|-------------|------|------|------|------|------|------|---------------------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$    | 50          | 100  | 150  | 200  | 300  | 400  | 600  | V                         |
| Working Peak Reverse Voltage  | $V_{RWM}$    |             |      |      |      |      |      |      |                           |
| DC Blocking Voltage   | $V_R$        |             |      |      |      |      |      |      |                           |
| RMS Reverse Voltage   | $V_{R(RMS)}$ | 35          | 70   | 105  | 140  | 210  | 280  | 420  | V                         |
| Average Rectified Output Current (Note 1) @ $T_A = 55^\circ\text{C}$  | $I_O$        | 1.0         |      |      |      |      |      |      | A                         |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave Superimposed on<br>Rated Load (JEDEC Method) | $I_{FSM}$    | 30          |      |      |      |      |      |      | A                         |
| Forward Voltage @ $I_F = 1.0\text{A}$   | $V_{FM}$     | 0.95        |      |      | 1.3  |      | 1.7  |      | 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         |      |      | 100  |      |      |      | $\mu\text{A}$             |
| Reverse Recovery Time (Note 2)  | $t_r$        | 35          |      |      |      |      |      |      | nS                        |
| Typical Junction Capacitance (Note 3)   | $C_J$        | 30          |      |      | 15   |      |      |      | pF                        |
| Typical Thermal Resistance Junction to Ambient (Note 1)   | $R_{JA}$     | 60          |      |      |      |      |      |      | $^\circ\text{C}/\text{W}$ |
| Typical Thermal Resistance Junction to Lead (Note 1)  | $R_{JL}$     | 15          |      |      |      |      |      |      |                           |
| Operating Temperature Range   | $T_J$        | -65 to +125 |      |      |      |      |      |      | $^\circ\text{C}$          |
| 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  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .  
3. Measured at 1.0 MHz and Applied Reverse Voltage of 4.0V D.C.

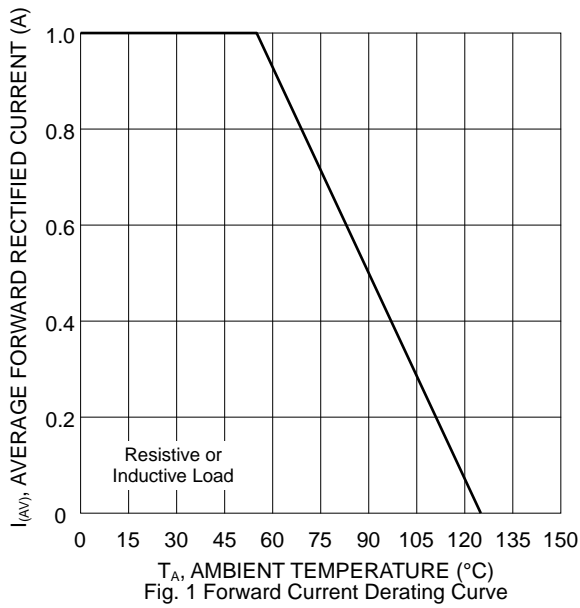


Fig. 1 Forward Current Derating Curve

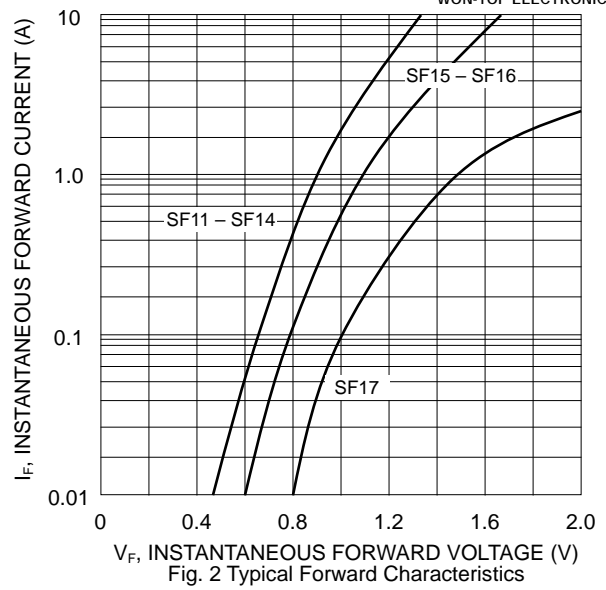


Fig. 2 Typical Forward Characteristics

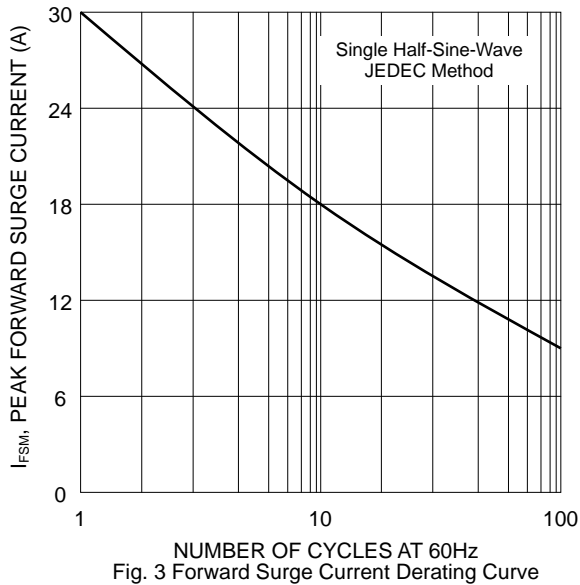


Fig. 3 Forward Surge Current Derating Curve

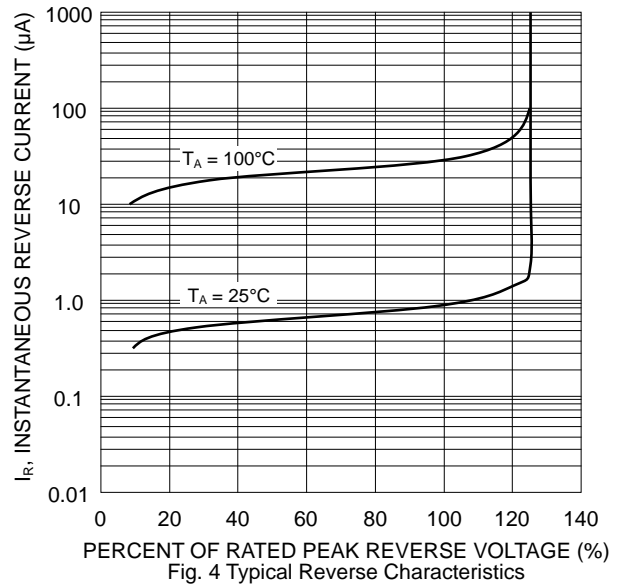


Fig. 4 Typical Reverse Characteristics

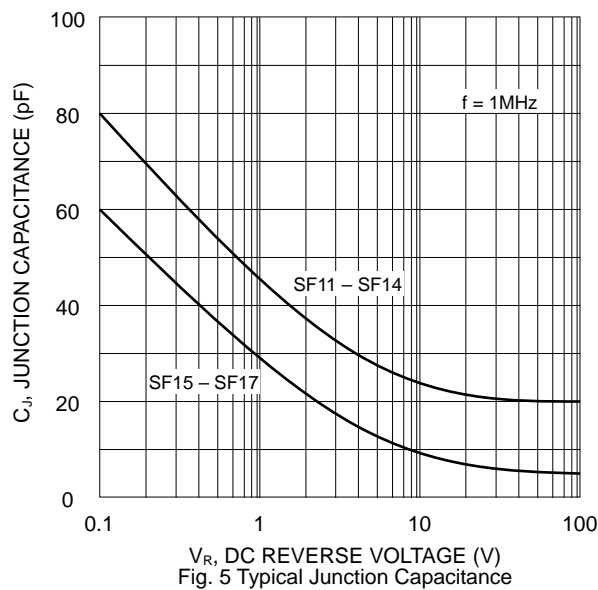
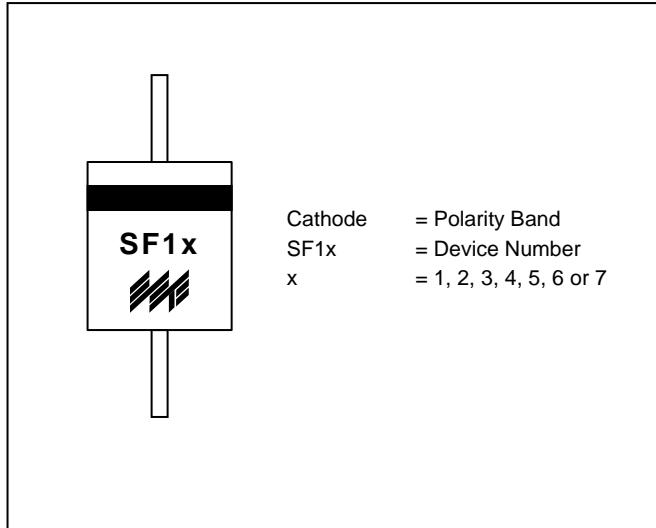
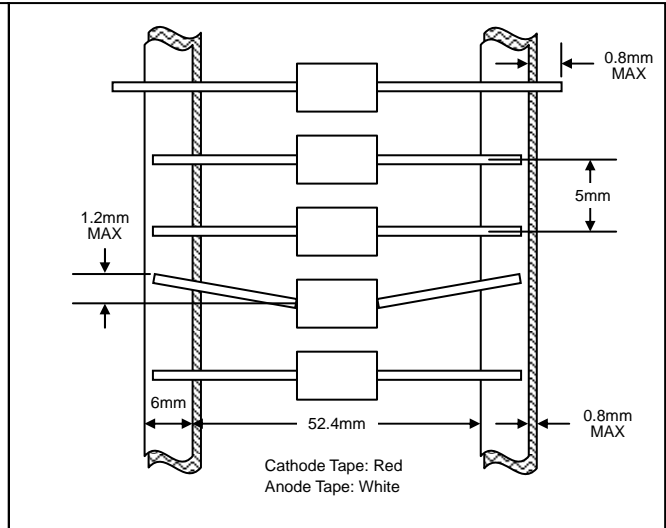


Fig. 5 Typical Junction Capacitance

## MARKING INFORMATION

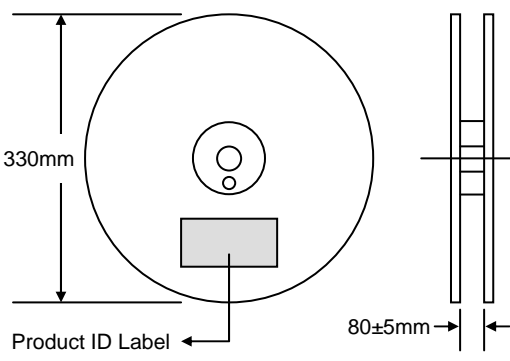


## TAPING SPECIFICATIONS



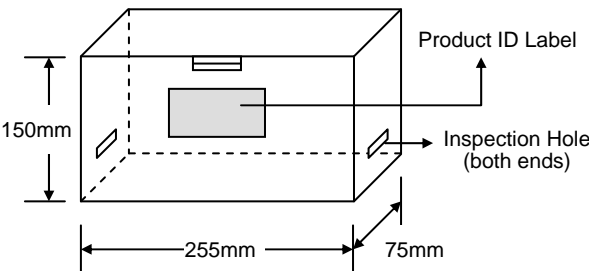
## PACKAGING INFORMATION

### TAPE & REEL



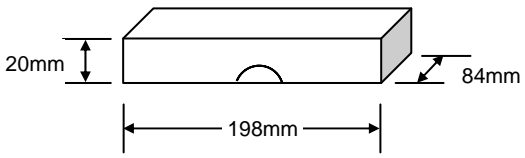
330mm  
Product ID Label  
80±5mm

### TAPE & BOX



150mm  
Product ID Label  
Inspection Hole (both ends)  
255mm  
75mm

### BULK



20mm  
198mm  
84mm


| 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 |
|----------------|--------------|-------------------|
| SF1x-T3        | DO-41        | 5000/Tape & Reel  |
| <b>SF1x-TB</b> | DO-41        | 5000/Tape & Box   |
| SF1x           | 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, SF11-TB-LF.**

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

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