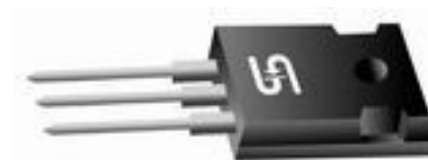


## Features

- ✧ UL Recognized File # E-326243
- ✧ Dual rectifier construction, positive center-tap
- ✧ Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- ✧ Glass passivated chip junctions
- ✧ Superfast recovery time, high voltage
- ✧ Low forward voltage, high current capability
- ✧ Low thermal resistance
- ✧ Low power loss, high efficiency
- ✧ High temperature soldering guaranteed:  
260°C / 10 seconds
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.



## Mechanical Data

- ✧ Cases: JEDEC TO-3P/TO-247AD molded plastic
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Weight: 5.6 grams

## Ordering Information (example)

| Part No. | Package | Packing   | Packing code | Packing code (Green) |
|----------|---------|-----------|--------------|----------------------|
| SF1601PT | TO-3P   | 30 / TUBE | C0           | C0G                  |

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

| Parameter                                                                                          | Symbol             | SF<br>1601<br>PT | SF<br>1602<br>PT | SF<br>1603<br>PT | SF<br>1604<br>PT | SF<br>1605<br>PT | SF<br>1606<br>PT | SF<br>1607<br>PT | SF<br>1608<br>PT | Units |
|----------------------------------------------------------------------------------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                             | V <sub>RRM</sub>   | 50               | 100              | 150              | 200              | 300              | 400              | 500              | 600              | V     |
| Maximum RMS Voltage                                                                                | V <sub>RMS</sub>   | 35               | 70               | 105              | 140              | 210              | 280              | 350              | 420              | V     |
| Maximum DC Blocking Voltage                                                                        | V <sub>DC</sub>    | 50               | 100              | 150              | 200              | 300              | 400              | 500              | 600              | V     |
| Maximum Average Forward Rectified Current                                                          | I <sub>F(AV)</sub> | 16               |                  |                  |                  |                  |                  |                  |                  | A     |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | I <sub>FSM</sub>   | 150              |                  |                  |                  |                  |                  |                  |                  | A     |
| Maximum Instantaneous Forward Voltage (Note 1) @8 A                                                | V <sub>F</sub>     | 0.95             |                  |                  |                  | 1.3              |                  | 1.7              |                  | V     |
| Maximum DC Reverse Current @ T <sub>A</sub> =25 °C                                                 | I <sub>R</sub>     | 10               |                  |                  |                  |                  |                  |                  |                  | uA    |
| at Rated DC Blocking Voltage @ T <sub>A</sub> =125 °C                                              |                    | 500              |                  |                  |                  |                  |                  |                  |                  | uA    |
| Maximum Reverse Recovery Time (Note 2)                                                             | T <sub>rr</sub>    | 35               |                  |                  |                  |                  |                  |                  |                  | nS    |
| Typical Junction Capacitance (Note 3)                                                              | C <sub>j</sub>     | 85               |                  |                  |                  |                  |                  |                  |                  | pF    |
| Typical Thermal Resistance                                                                         | R <sub>θJC</sub>   | 2                |                  |                  |                  |                  |                  |                  |                  | °C/W  |
| Operating Junction Temperature Range                                                               | T <sub>J</sub>     | - 55 to + 150    |                  |                  |                  |                  |                  |                  |                  | °C    |
| Storage Temperature Range                                                                          | T <sub>STG</sub>   | - 55 to + 150    |                  |                  |                  |                  |                  |                  |                  | °C    |

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Note 3: Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$ .

## RATINGS AND CHARACTERISTIC CURVES (SF1601PT THRU SF1608PT)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

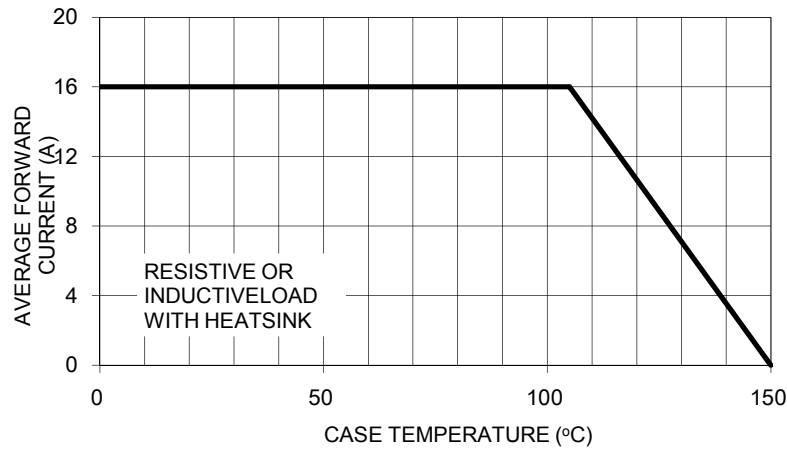


FIG. 2- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

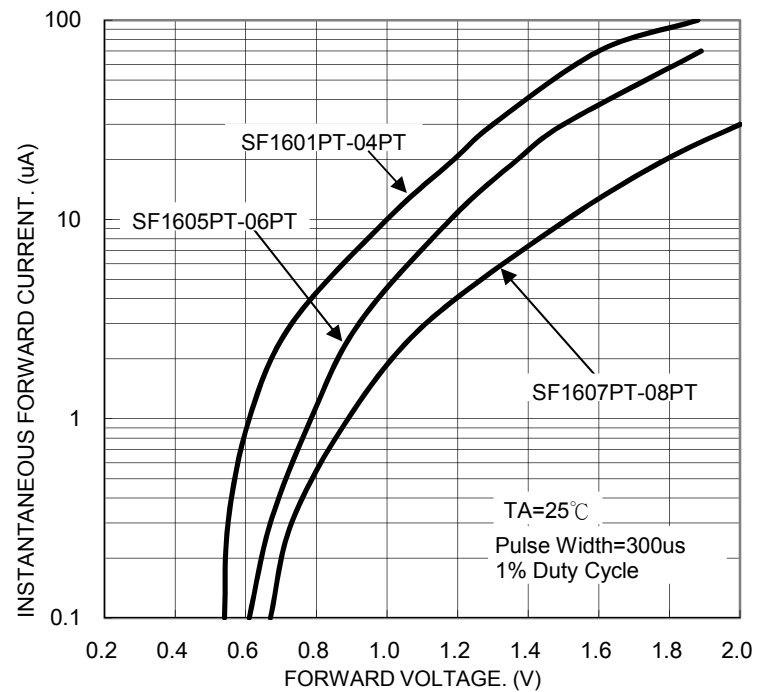


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

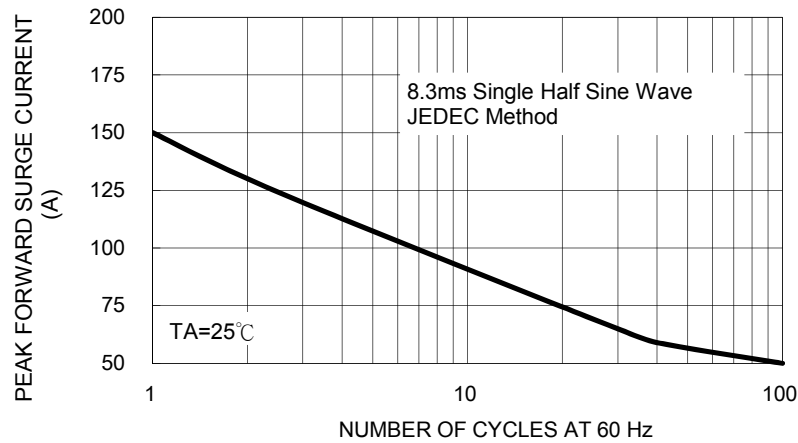


FIG. 5- TYPICAL REVERSE CHARACTERISTICS PER LEG

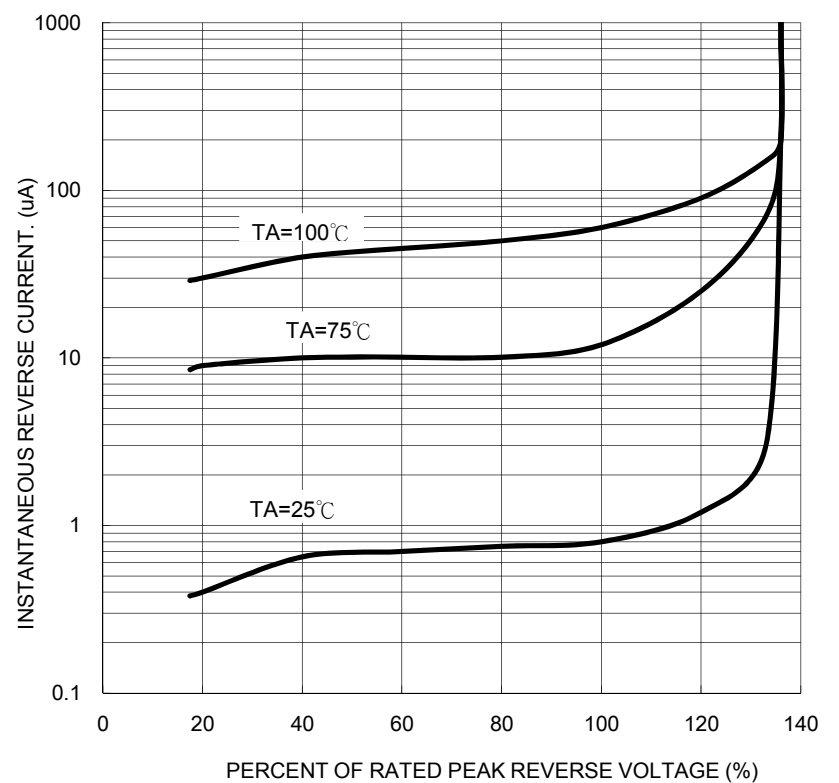


FIG. 4- TYPICAL JUNCTION CAPACITANCE PER LEG

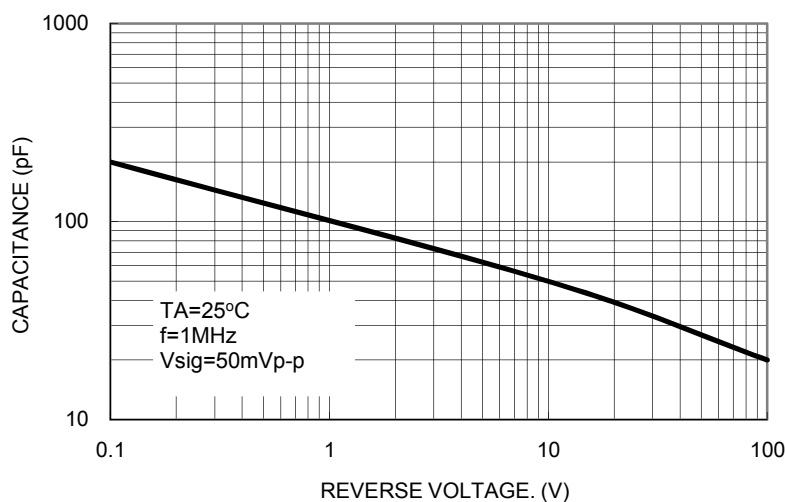
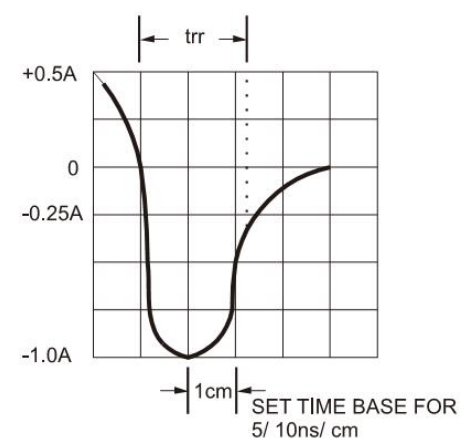
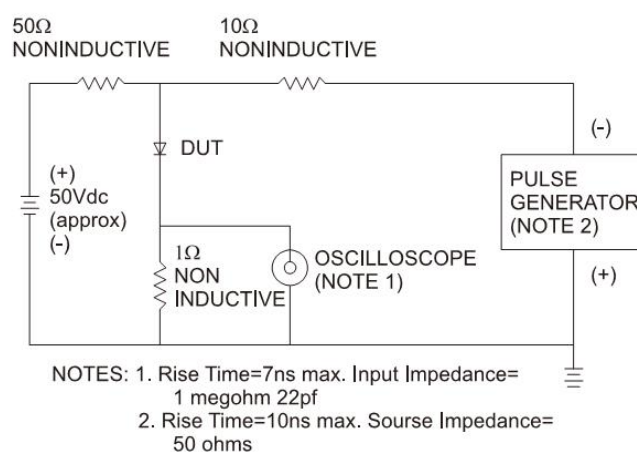


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

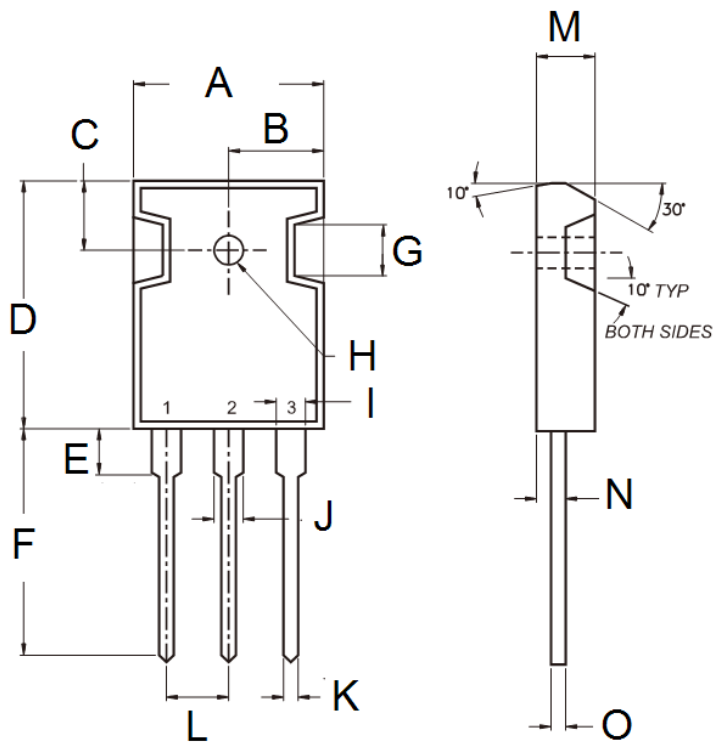


### Ordering information

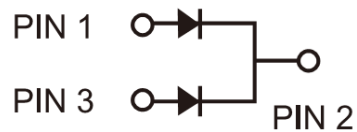
| Part No. | Package | BULK Packing | Packing code | Packing code (Green) |
|----------|---------|--------------|--------------|----------------------|
| SP160xPT | TO-3P   | 30 / TUBE    | C0           | C0G                  |

Note: "x" is Device Code from "1" thru "8".

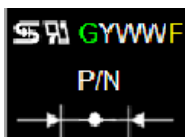
### Dimensions



| DIM. | Unit(mm) |       | Unit(inch) |       |
|------|----------|-------|------------|-------|
|      | Min      | Max   | Min        | Max   |
| A    | 15.90    | 16.40 | 0.626      | 0.646 |
| B    | 7.90     | 8.20  | 0.311      | 0.323 |
| C    | 5.70     | 6.20  | 0.224      | 0.244 |
| D    | 20.80    | 21.30 | 0.819      | 0.839 |
| E    | 3.50     | 4.10  | 0.138      | 0.161 |
| F    | 19.70    | 20.20 | 0.776      | 0.795 |
| G    | -        | 4.30  | -          | 0.169 |
| H    | 2.90     | 3.40  | 0.114      | 0.134 |
| I    | 1.93     | 2.18  | 0.076      | 0.086 |
| J    | 2.97     | 3.22  | 0.117      | 0.127 |
| K    | 1.12     | 1.22  | 0.044      | 0.048 |
| L    | 5.20     | 5.70  | 0.205      | 0.224 |
| M    | 4.90     | 5.16  | 0.193      | 0.203 |
| N    | 2.70     | 3.00  | 0.106      | 0.118 |
| O    | 0.51     | 0.76  | 0.020      | 0.030 |



### Marking Diagram



P/N = Specific Device Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code