



DSF1A THRU DSF1J

Reverse Voltage - 50 to 600 Volts Forward Current - 1.0 Ampere

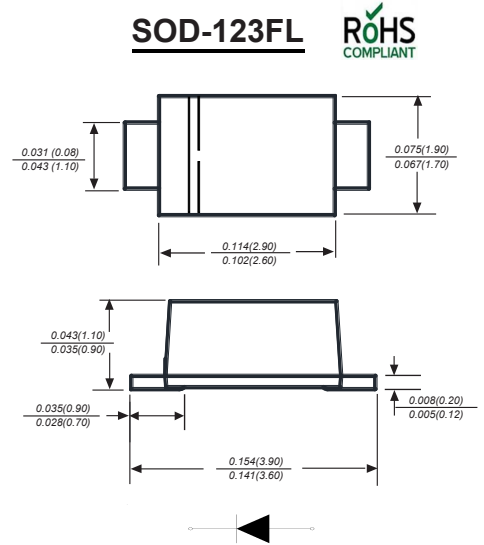
SURFACE MOUNT SUPER FAST RECTIFIER

Features

- ◆ Glass passivated device
- ◆ Ideal for surface mounted applications
- ◆ Low reverse leakage
- ◆ Metallurgically bonded construction
- ◆ High temperature soldering guaranteed:
250°C/10 seconds, 0.375" (9.5mm) lead length,
5 lbs. (2.3kg) tension

Mechanical Data

Case: JEDEC UOD-123FL molded plastic body
 Terminals: Solderable per MIL-STD-750, Method 2026A
 Polarity: Polarity symbol marking on body
 Mounting Position: Any
 Weight: 0.0067 ounce, 0.02 grams



Dimensions in inches and (millimeters)

Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

| Parameter | SYMBOLS | DSF1A | DSF1B | DSF1C | DSF1D | DSF1E | DSF1G | DSF1J | UNITS |
|--|-----------------|-------------|-------|-------|-------|-------|-------|-------|---------------------------|
| Marking Code | | E1A | E1B | E1C | E1D | E1E | E1G | E1J | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum average forward rectified current at TL (see fig. 1) | $I_{(AV)}$ | 1.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 25 | | | | | | | A |
| Maximum instantaneous forward voltage at 1.0A | V_F | 0.95 | | | 1.25 | | 1.7 | | V |
| Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$ | I_R | 5 100 | | | | | | | μA |
| Typical junction capacitance (NOTE 1) | C_J | 10 | | | | | | | pF |
| Maximum Reverse Recovery Time (NOTE 2) | t_{rr} | 35 | | | | | | | ns |
| Typical thermal resistance (NOTE 3) | $R_{\theta JA}$ | 85 | | | | | | | $^\circ\text{C}/\text{W}$ |
| Operating junction temperature range | T_J | -55 to +125 | | | | | | | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

Note: 1. Measured with $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$.
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3. PCB mounted on 0.2*0.2" (5.0*5.0mm) copper pad area.



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Typical Characteristics

FIG. 1- FORWARD CURRENT DERATING CURVE

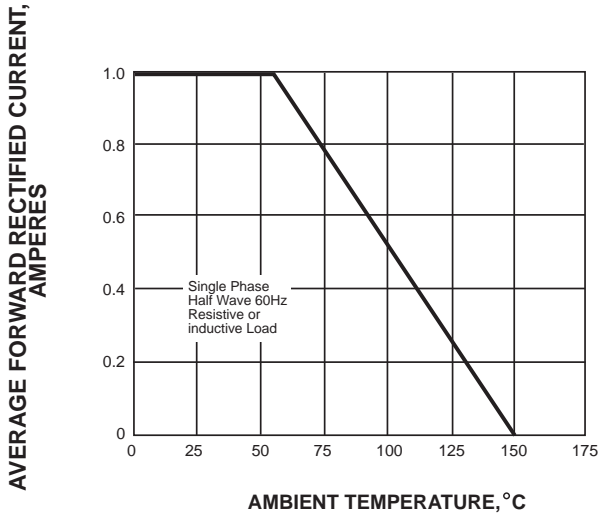


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

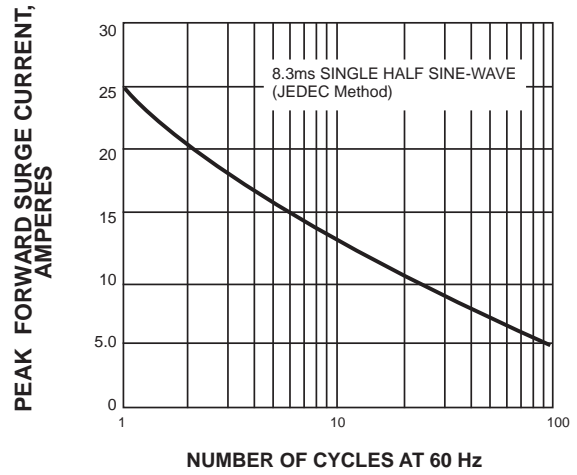


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

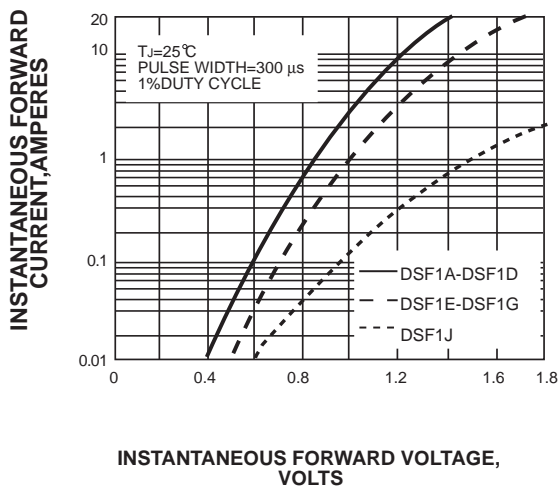


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

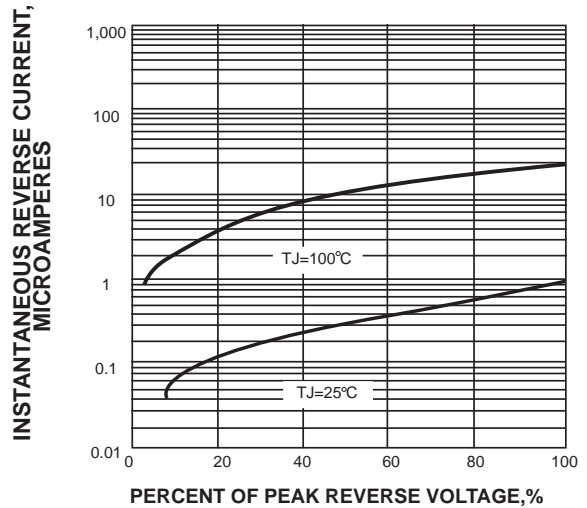


FIG. 5-TYPICAL JUNCTION CAPACITANCE

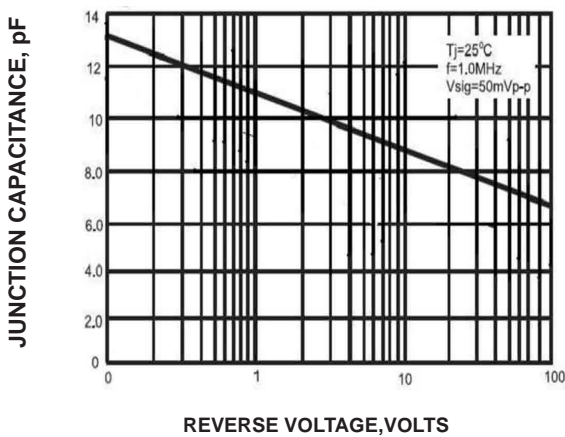
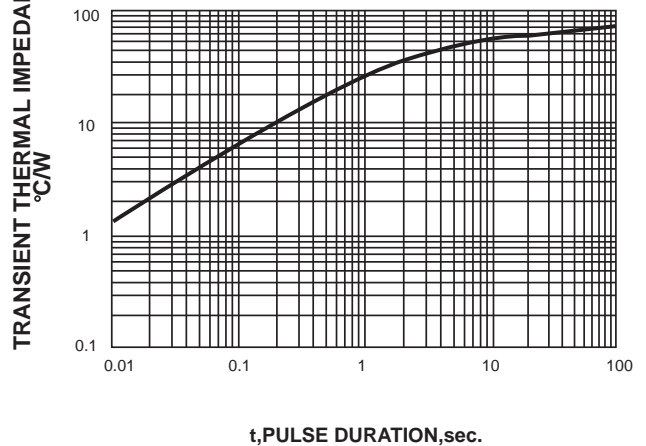


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



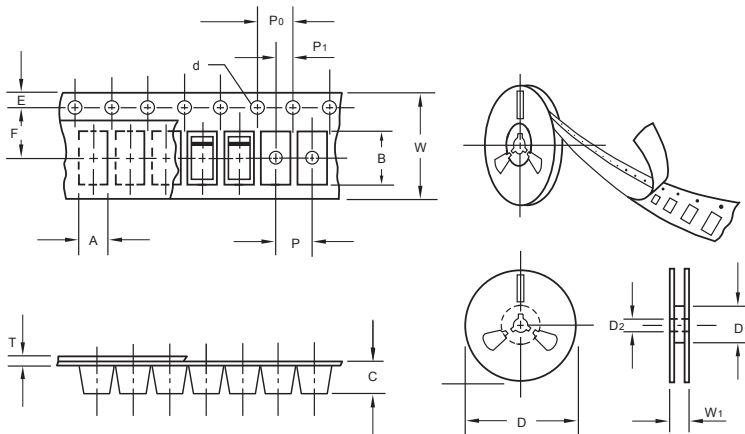
The curve above is for reference only.



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Packing information



unit:mm

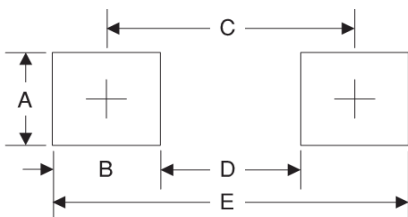
| Item | Symbol | Tolerance | SOD-123FL |
|--------------------------|--------|-----------|-----------|
| Carrier width | A | 0.1 | 2.1 |
| Carrier length | B | 0.1 | 4.0 |
| Carrier depth | C | 0.1 | 1.60 |
| Sprocket hole | d | 0.05 | 1.55 |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | D1 | min | 50.0 |
| Feed hole diameter | D2 | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 3.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | P0 | 0.1 | 4.00 |
| Embossment center | P1 | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.25 |
| Tape width | W | 0.3 | 8.15 |
| Reel width | W1 | 1.0 | 10.5 |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|-----------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SOD-123FL | 7" | 3,000 | 4.0 | 45,000 | 210*208*203 | 178 | 430*430*235 | 180,000 | 9.0 |

Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 1.2 | 0.047 |
| B | 1.2 | 0.047 |
| C | 3.2 | 0.126 |
| D | 2 | 0.079 |
| E | 4.4 | 0.173 |

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