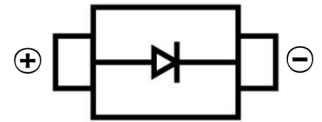


SUPER FAST RECOVERY RECTIFIER DIODE
FEATURES

- Surface Mount device
- Low Reverse voltage leakage current
- Glass passivated junction
- High forward surge current capability
- Low forward voltage drop
- Super Fast Recovery Time for High Efficiency


SOD-123FL
MECHANICAL DATA

- Case: SOD-123FL
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.0155 grams (approximate)
- Marking:ES1J


MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|---------------------|-----------|------|
| Maximum Recurrent Peak Reverse Voltage | V _{RRM} | 600 | V |
| DC Blocking Reverse Voltage | V _R | 600 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 420 | V |
| Maximum Average Forward Rectified Current | I _F | 1 | A |
| Non-Repetitive Peak Forward Surge Current @t=8.3ms | I _{FSM} | 30 | A |
| Thermal Resistance From Junction To Ambient | R _{θJA} | 120 | °C/W |
| Reverse Recovery Time(@I _F =0.5A, I _R =1.0A, I _{RR} =0.25A) | t _{rr} | 35 | nS |
| Junction Temperature | T _J | -55 ~+150 | °C |
| Storage Temperature | T _{STG} | -55 ~+150 | °C |

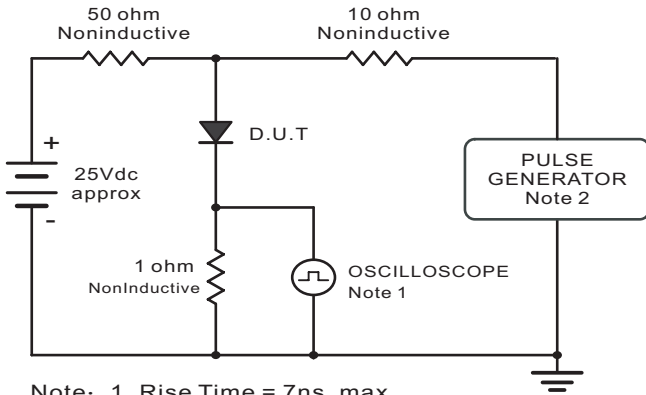
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Conditions |
|--|----------------|-----|-----|------|------|---|
| Forward voltage | V _F | | | 1.68 | V | I _F =1A |
| Reverse current @T _A =25°C | I _R | | | 5 | μA | V _R =600V |
| Reverse current @T _A =125°C | I _R | | | 100 | μA | V _R =600V |
| Diode capacitance | C _D | | 10 | | pF | V _R =4V _{DC} , f=1MHz |

SUPER FAST RECOVERY RECTIFIER DIODE

Typical Characteristics

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
Input Impedance = 1megohm, 22pF.
2. Rise Time = 10ns, max.
Source Impedance = 50 ohms.

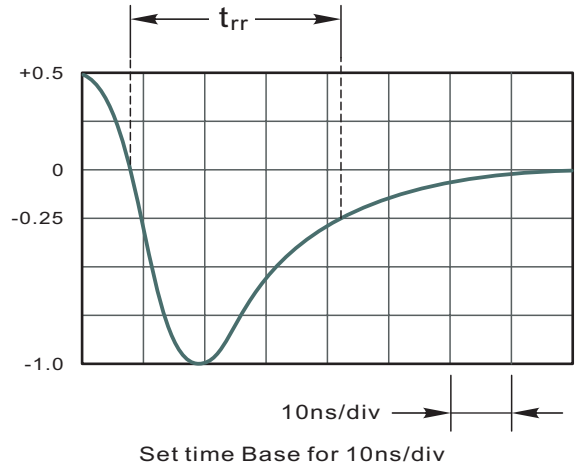


Fig.2 Maximum Average Forward Current Rating

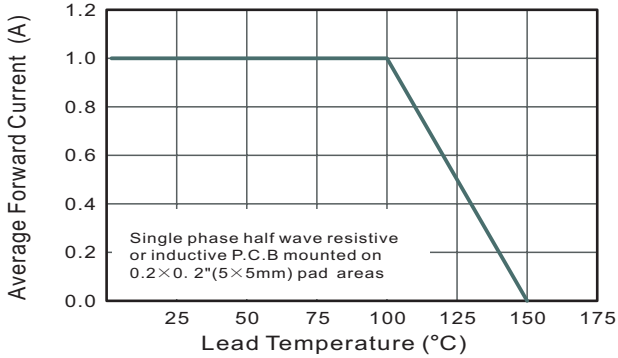


Fig.3 Typical Reverse Characteristics

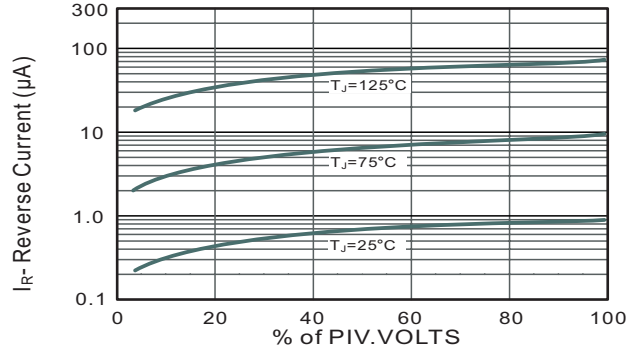


Fig.4 Typical Forward Characteristics

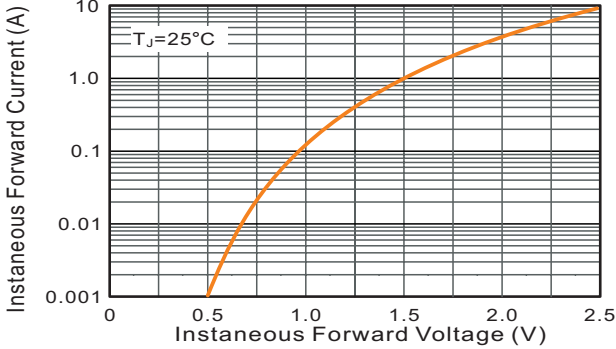


Fig.5 Typical Junction Capacitance

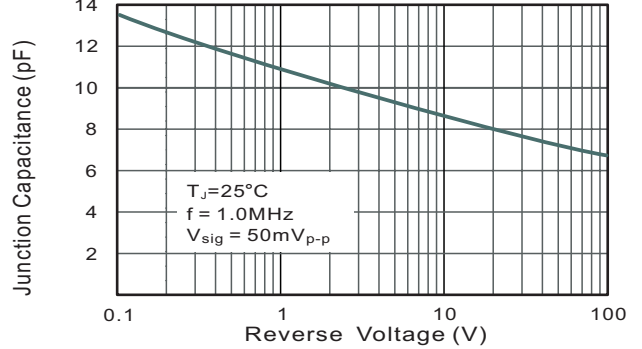
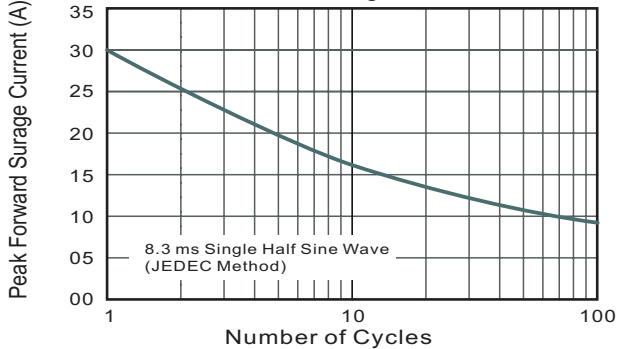
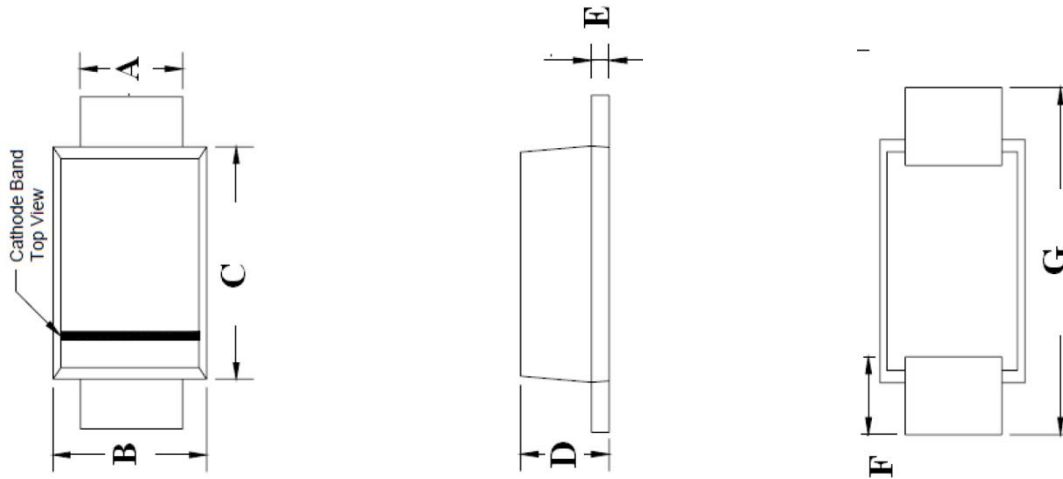
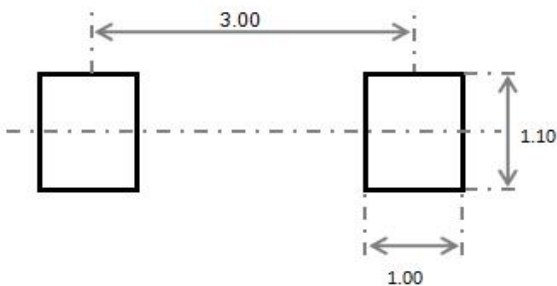


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

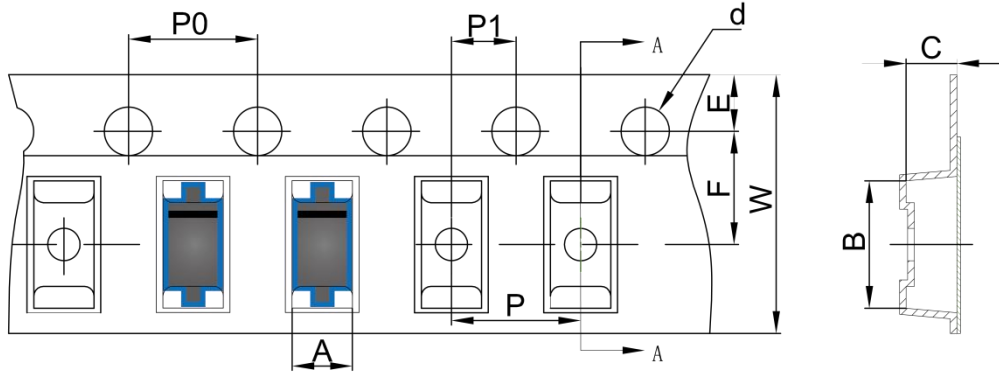


SUPER FAST RECOVERY RECTIFIER DIODE
SOD-123FL Package Outline Dimensions


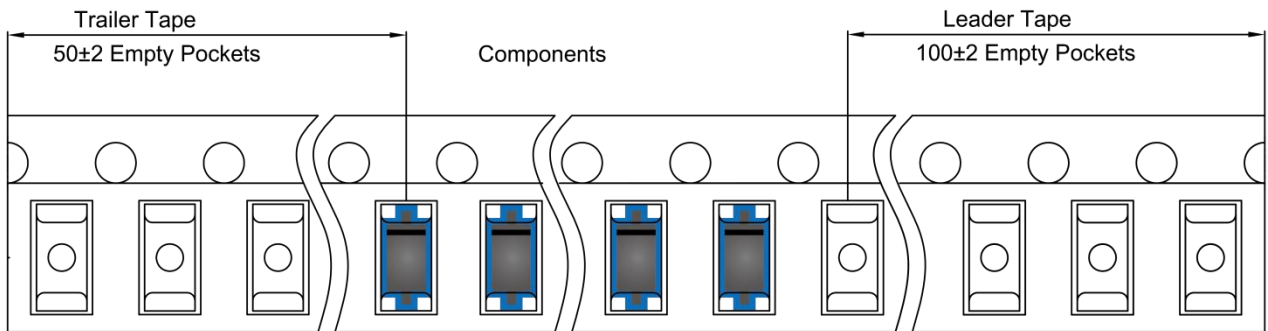
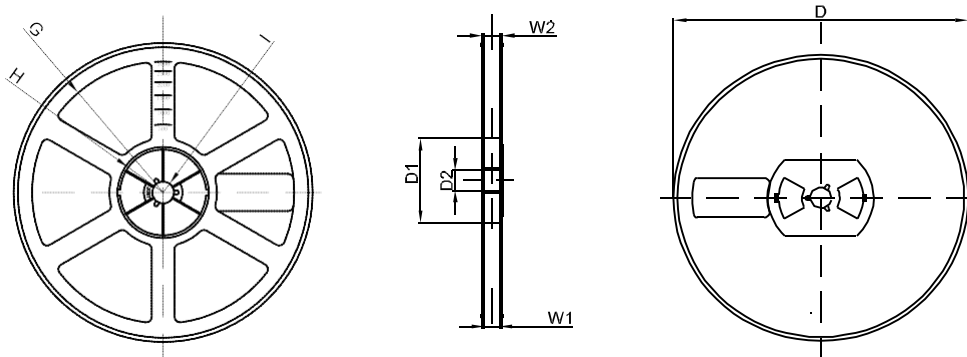
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.75 | 0.95 | 0.029 | 0.037 |
| B | 1.60 | 2.00 | 0.063 | 0.079 |
| C | 2.60 | 3.00 | 0.103 | 0.119 |
| D | 0.90 | 1.20 | 0.036 | 0.047 |
| E | 0.12 | 0.22 | 0.005 | 0.009 |
| F | 0.8Typ | | 0.032Typ | |
| G | 3.50 | 3.90 | 0.138 | 0.159 |

SOD-123FL Suggested Pad Layout

Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

SUPER FAST RECOVERY RECTIFIER DIODE
SOD-123FL Tape and Reel
SOD-123FL Embossed Carrier Tape


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| TYPE | A | B | C | d | E | F | P0 | P | P1 | W |
| SOD-123FL | 2.10 | 4.00 | 1.25 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |
| TOLERANCE | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 |

SOD-123FL Tape Leader and Trailer

SOD-123FL Reel


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | |
|------------------------------|------|-------|-------|-----|--------|-------|------|-------|
| REEL OPTION | D | D1 | D2 | G | H | I | W1 | W2 |
| 7" DIA | Ø178 | 54.40 | 13.00 | R78 | R25.60 | R6.50 | 9.50 | 12.30 |
| TOLERANCE | ±2 | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 |