



SOD-123FL Plastic-Encapsulate Diodes

US1AL THRU US1ML High Efficient Rectifier Diodes

Features

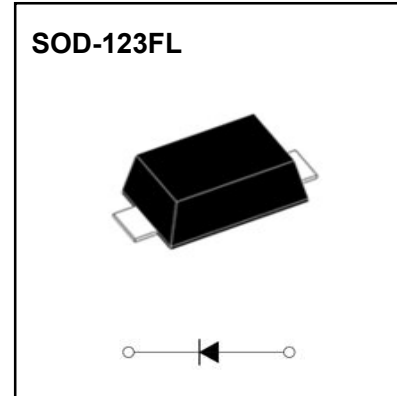
- $I_{F(AV)}$ 1A
- V_{RRM} 50V-1000V
- High surge current capability
- Polarity: Color band denotes cathode

Applications

- Rectifier

Marking

- US1AL-US1DL : USL
- US1GL : USM
- US1JL-US1ML : USH



Limiting Values(Absolute Maximum Rating)

| Item | Symbol | Unit | Test Conditions | US1 | | | | | | |
|--|----------------|------------------|--|------------|-----|-----|-----|-----|-----|------|
| | | | | AL | BL | DL | GL | JL | KL | ML |
| Repetitive Peak Reverse Voltage | V_{RRM} | V | | 50 | 100 | 200 | 400 | 600 | 800 | 1000 |
| Maximum RMS Voltage | V_{RMS} | V | | 35 | 70 | 140 | 280 | 420 | 560 | 700 |
| Average Forward Current | $I_{F(AV)}$ | A | 60Hz Half-sine wave, Resistance load, $T_a=90^\circ\text{C}$ | 1.0 | | | | | | |
| Surge(Non-repetitive)Forward Current | I_{FSM} | A | 60Hz Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$ | 30 | | | | | | |
| Operation Junction and Storage Temperature Range | T_J, T_{STG} | $^\circ\text{C}$ | | -55 ~ +150 | | | | | | |

Electrical Characteristics (T=25°C Unless otherwise specified)

| Item | Symbol | Unit | Test Condition | US1 | | | | | | |
|-------------------------------|------------------|--------------------|---|-----|----|----|-----|-----|----|----|
| | | | | AL | BL | DL | GL | JL | KL | ML |
| Peak Forward Voltage | V_F | V | $I_F=1.0\text{A}$ | 1.0 | | | 1.3 | 1.7 | | |
| Maximum reverse recovery time | t_{rr} | ns | $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$ | 50 | | | | 75 | | |
| Peak Reverse Current | I_{RRM1} | μA | $V_{RM}=V_{RRM}$ | | | | 5 | | | |
| | I_{RRM2} | | | | | | 50 | | | |
| Thermal Resistance(Typical) | $R_{\theta J-A}$ | $^\circ\text{C/W}$ | Between junction and ambient | | 70 | | | | | |
| | $R_{\theta J-L}$ | | Between junction and terminal | | 25 | | | | | |

Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

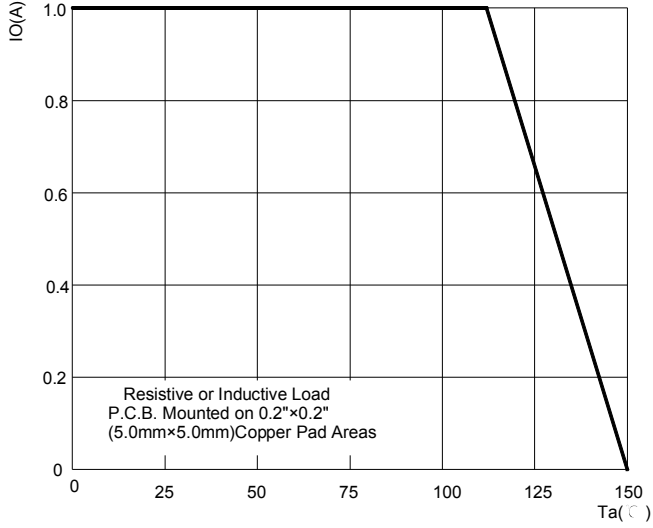


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

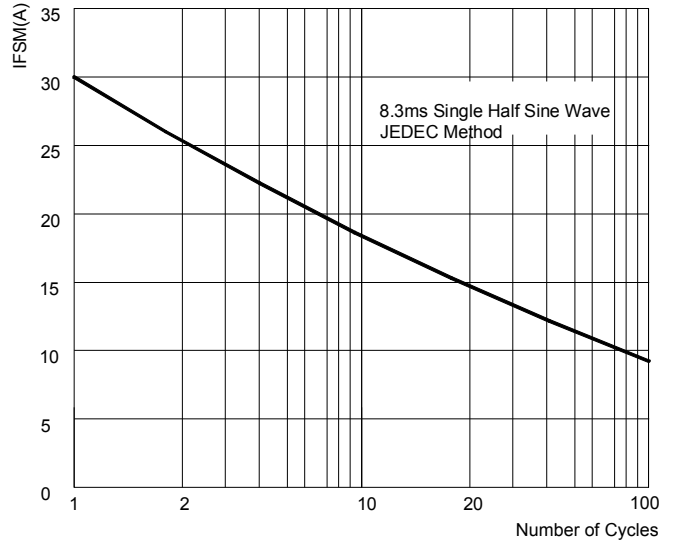


FIG.3: TYPICAL FORWARD CHARACTERISTICS

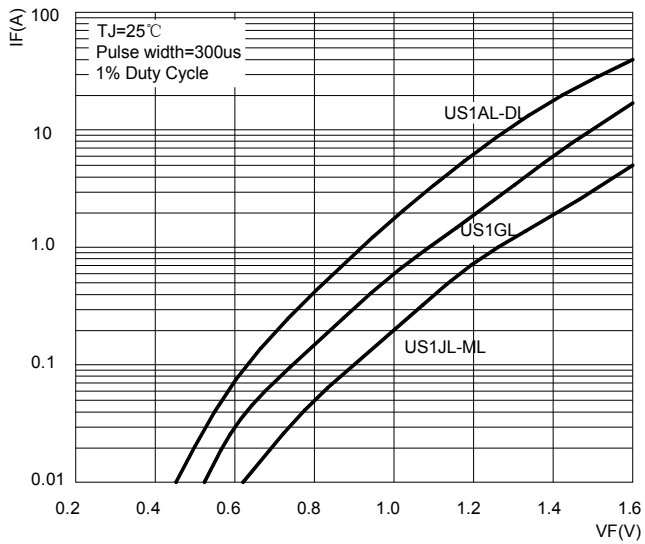


FIG.4: TYPICAL REVERSE CHARACTERISTICS

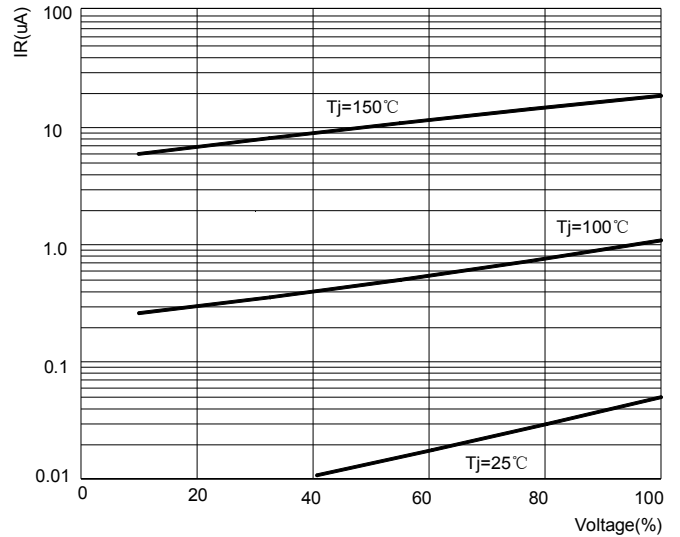
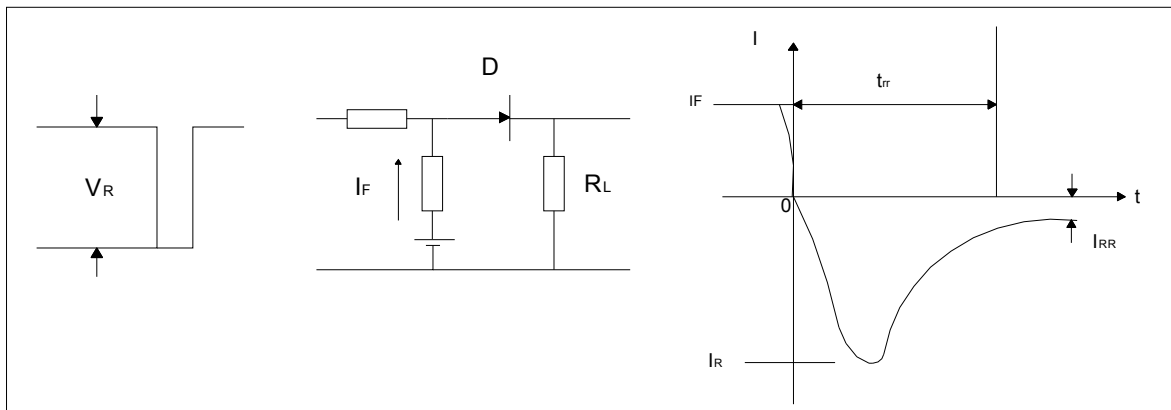
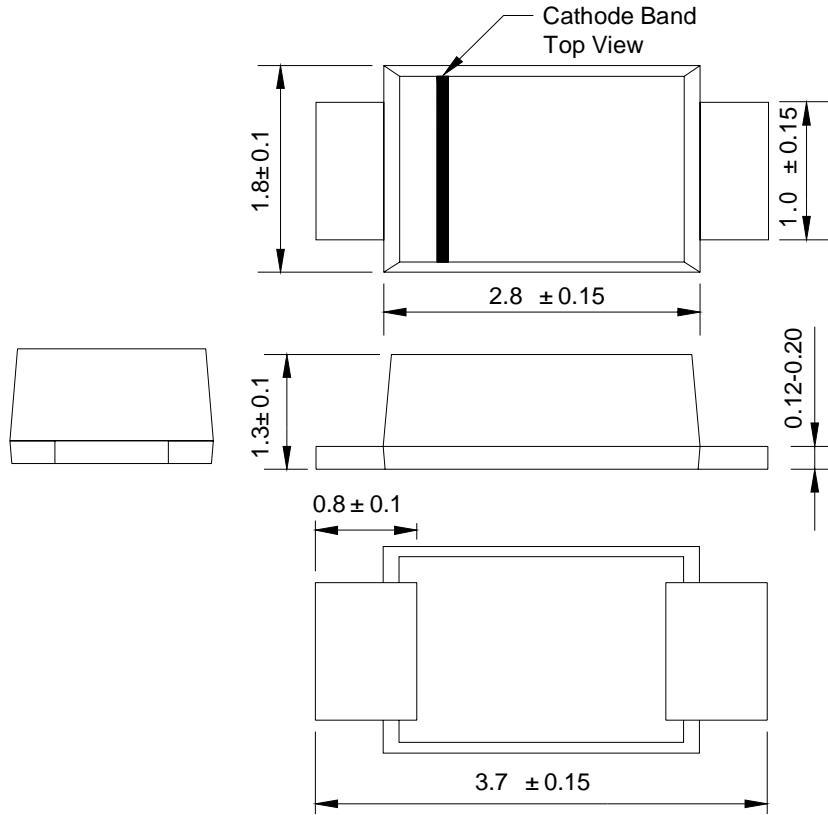


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

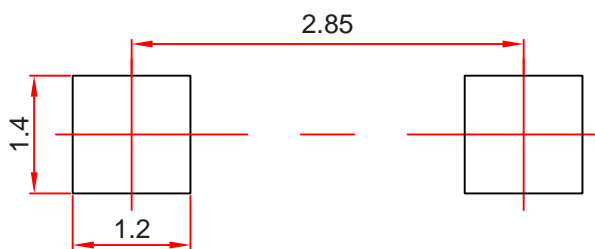


SOD-123FL Package Outline Dimensions



Dimensions in millimeters

SOD-123FL Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

NOTICE

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Reel Taping Specifications For Surface Mount Devices-SOD-123FL



FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

| ITEM | SYMBOL | SOD-123FLmm(inch) |
|------------------------|--------|------------------------|
| Carrier width | A | 2.05±0.1(0.081±0.004) |
| Carrier length | B | 3.95±0.1(0.156±0.004) |
| Carrier depth | C | 1.45±0.1(0.057±0.004) |
| Sprocket hole | d | 1.55±0.05(0.061±0.002) |
| Reel outside diameter | D | 178±2.0(7.0±0.079) |
| Reel inner diameter | D1 | 54±1.0(2.13±0.039) |
| Feed hole diameter | D2 | 13±0.5(0.512±0.020) |
| Sprocket hole position | E | 1.75±0.1(0.069±0.004) |
| Punch hole position | F | 3.50±0.1(0.138±0.002) |
| Punch hole pitch | P | 4.0±0.1(0.157±0.004) |
| Sprocket hole pitch | P0 | 4.0±0.1(0.157±0.004) |
| Embossment center | P1 | 2.0±0.1(0.079±0.004) |
| Totall tape thickness | T | 0.21±0.25(0.008±0.010) |
| Tape width | W | 8.0±0.2(0.315±0.008) |
| Reel width | W1 | 10.0±2.0(0.394±0.079) |

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.

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