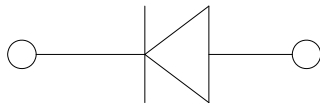


Surface Mount Schottky Rectifier



Features

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

Mechanical Data

- **Package:** SOD-123FL
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | S12 | S13 | S14 | S15 | S16 | S18 | S110 | S115 | S120 |
|---|-----------|------------------|-----------|-----|-----|-----|-----------|-----|------|------|------|
| Device marking code | | | S12 | S13 | S14 | S15 | S16 | S18 | S110 | S115 | S120 |
| Repetitive peak reverse voltage | VRRM | V | 20 | 30 | 40 | 50 | 60 | 80 | 100 | 150 | 200 |
| Average rectified output current @60Hz sine wave, Resistance load, T_a (FIG.1) | I_O | A | 1.0 | | | | | | | | |
| Surge(non-repetitive)forward current @60Hz half-sine wave, 1 cycle, $T_j=25^\circ\text{C}$ | IFSM | A | 30 | | | | | | | | |
| Storage temperature | T_{stg} | $^\circ\text{C}$ | -55 ~+150 | | | | | | | | |
| Junction temperature | T_j | $^\circ\text{C}$ | -55 ~+125 | | | | -55 ~+150 | | | | |

■ Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | S12 | S13 | S14 | S15 | S16 | S18 | S110 | S115 | S120 |
|--|--------|------|-------------------------|------|-----|-----|------|-----|------|------|------|------|
| Maximum instantaneous forward voltage drop per diode | V_F | V | IFM=1.0A | 0.50 | | | 0.70 | | 0.85 | | 0.90 | |
| Maximum DC reverse current at rated DC blocking voltage per diode @ VRM=VRRM | IRRM | mA | $T_a=25^\circ\text{C}$ | 0.50 | | | | | 0.10 | | | |
| | | | $T_a=100^\circ\text{C}$ | 10 | | | | | 5 | | | |



S12 THRU S120

■ Thermal Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | S12 | S13 | S14 | S15 | S16 | S18 | S110 | S115 | S120 |
|--------------------|----------------|---------------------------|------------------|-----|-----|-----|-----|-----|------|------|------|
| Thermal Resistance | R θ J-A | $^\circ\text{C}/\text{W}$ | 70 ¹⁾ | | | | | | | | |
| | R θ J-L | | 20 ¹⁾ | | | | | | | | |

Note:
 (1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm*3mm copper pad areas.

■ Characteristics (Typical)

FIG1:Io-TL Curve

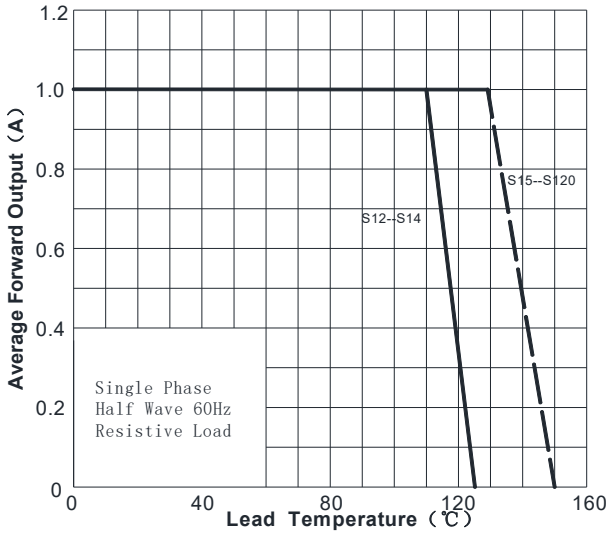


FIG2: Surge Forward Current Capability

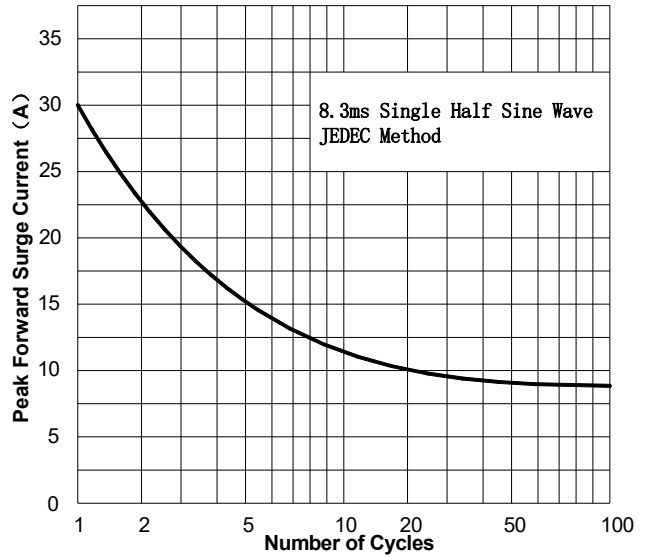


FIG3: Forward Voltage

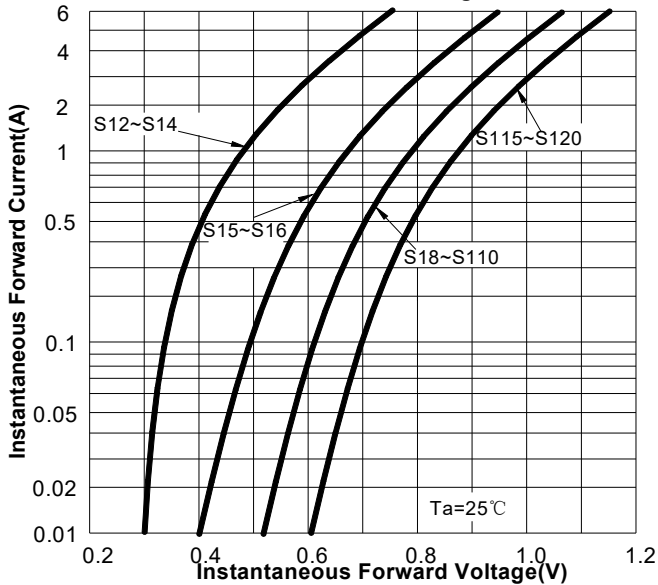
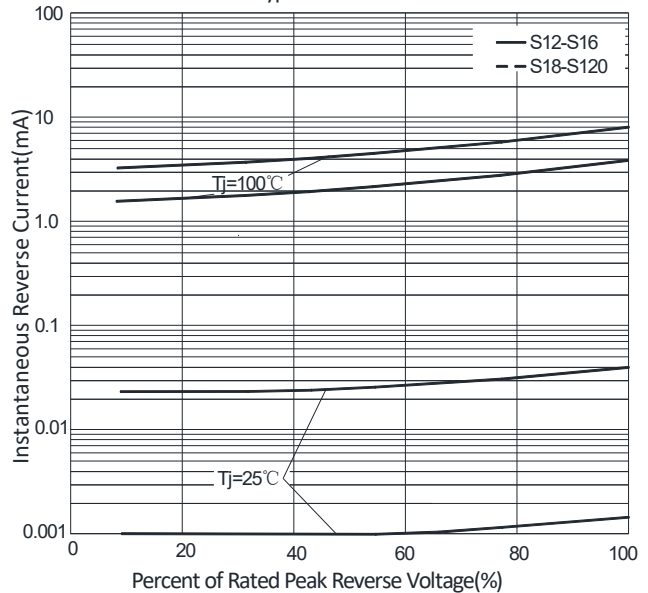


FIG4: Typical Reverse Characteristics



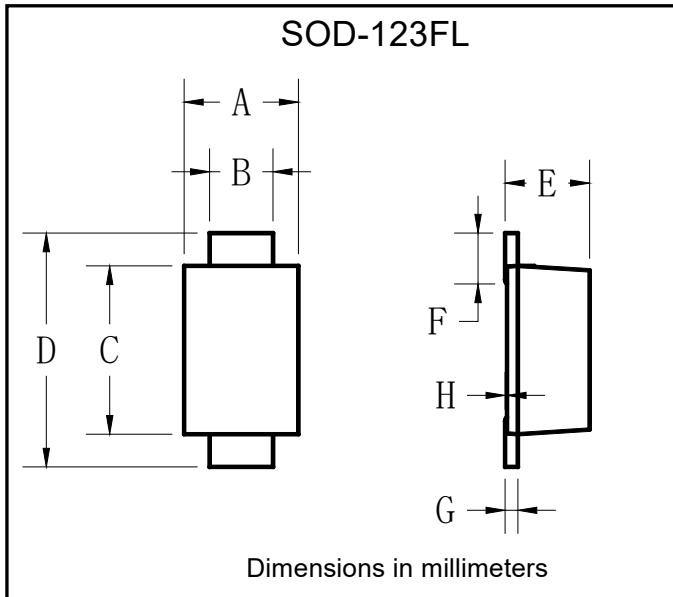


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Ordering Information (Example)

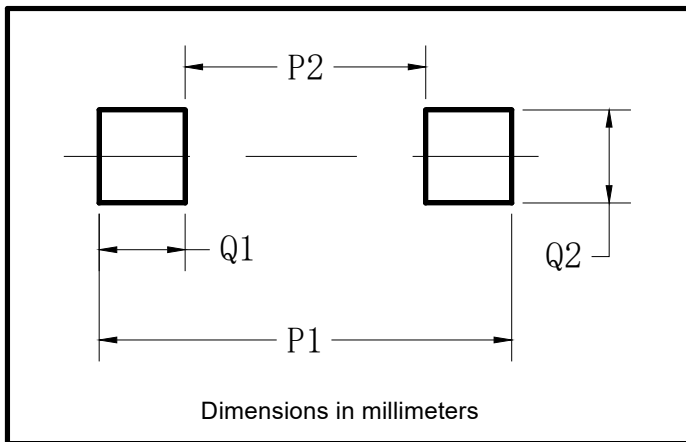
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| S12 THRU S120 | F1 | Approximate 0.0169 | 3000 | 30000 | 120000 | 7" reel |
| S12 THRU S120 | F2 | Approximate 0.0169 | 2500 | 25000 | 100000 | 7" reel |
| S12 THRU S120 | F3 | Approximate 0.0169 | 10000 | 30000 | 210000 | 13" reel |
| S12 THRU S120 | F4 | Approximate 0.0169 | 3000 | 27000 | 108000 | 7" reel |
| S12 THRU S120 | F5 | Approximate 0.0169 | 10000 | 20000 | 160000 | 13" reel |
| S12 THRU S120 | F6 | Approximate 0.0169 | 3000 | 12000 | 60000 | 7" reel |

Outline Dimensions



| SOD-123FL | | |
|-----------|------|------|
| Dim | Min | Max |
| A | 1.60 | 1.90 |
| B | 0.90 | 1.10 |
| C | 2.55 | 2.85 |
| D | 3.60 | 3.90 |
| E | 1.00 | 1.20 |
| F | 0.40 | 0.90 |
| G | 0.10 | 0.25 |
| H | 0.02 | 0.05 |

Suggested pad layout



| SOD-123FL | |
|-----------|-------------|
| Dim | Millimeters |
| P1 | 3.90 |
| P2 | 1.90 |
| Q1 | 1.00 |
| Q2 | 1.50 |



S12 THRU S120

Disclaimer

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