



Surface Mount Schottky Barrier Rectifier
Reverse Voltage - 20 to 200 V
Forward Current - 1.0 A

FEATURES


- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

- Case: SOD-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 15mg 0.00048oz

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Top View
Marking Code: DS12W ---S12
DS14W ---S14
DS16W ---S16
DS18W ---S18
DS110W ---S110
DS112W ---S112
DS115W ---S115
DS120W ---S120
Simplified outline SOD-123FL and symbol

Absolute 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, derate by 20 %

| Parameter | Symbols | DS12W | DS14W | DS16W | DS18W | DS110W | DS112W | DS115W | DS120W | Units |
|--|-----------------|------------|-------|-------|----------|--------|----------|--------|--------|---------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 20 | 40 | 60 | 80 | 100 | 120 | 150 | 200 | V |
| Maximum RMS voltage | V_{RMS} | 14 | 28 | 42 | 56 | 70 | 84 | 105 | 140 | V |
| Maximum DC Blocking Voltage | V_{DC} | 20 | 40 | 60 | 80 | 100 | 120 | 150 | 200 | V |
| Maximum Average Forward Rectified Current | $I_{F(AV)}$ | 1.0 | | | | | | | | A |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | I_{FSM} | 30 | | | | | | | | A |
| Max Instantaneous Forward Voltage at 1 A | V_F | 0.55 | 0.70 | | 0.85 | | 0.90 | | V | |
| Maximum DC Reverse Current $T_a = 25^{\circ}C$ at Rated DC Reverse Voltage $T_a = 100^{\circ}C$ | I_R | 0.3 10 | | | 0.2 5 | | 0.1 2 | | mA | |
| Typical Junction Capacitance ⁽¹⁾ | C_j | 110 | 80 | | | | | | pF | |
| Typical Thermal Resistance ⁽²⁾ | $R_{\theta JA}$ | 100 | | | | | | | | $^{\circ}C/W$ |
| Operating Junction Temperature Range | T_j | -55 ~ +125 | | | | | | | | $^{\circ}C$ |
| Storage Temperature Range | T_{stg} | -55 ~ +150 | | | | | | | | $^{\circ}C$ |

(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



Fig.1 Forward Current Derating Curve

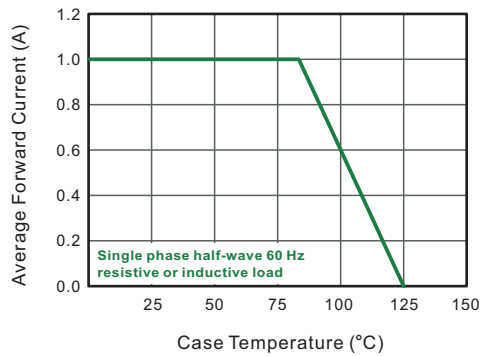


Fig.2 Typical Reverse Characteristics

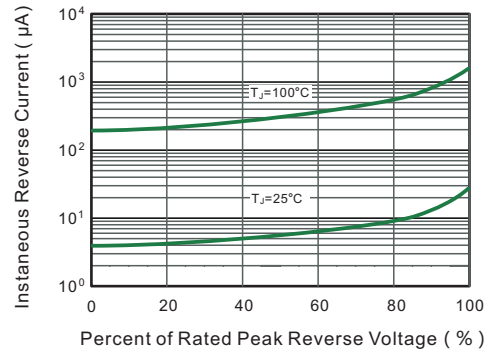


Fig.3 Typical Forward Characteristic

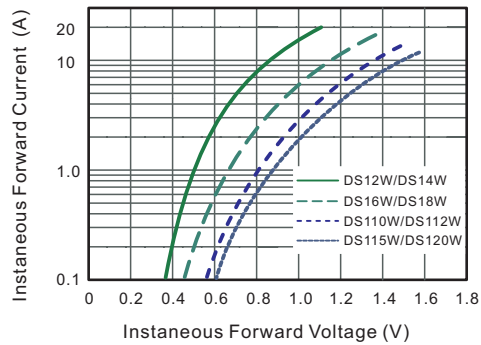


Fig.4 Typical Junction Capacitance

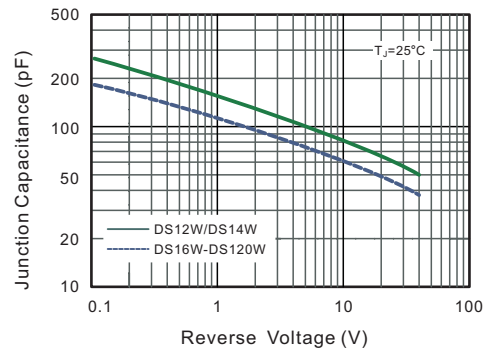


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

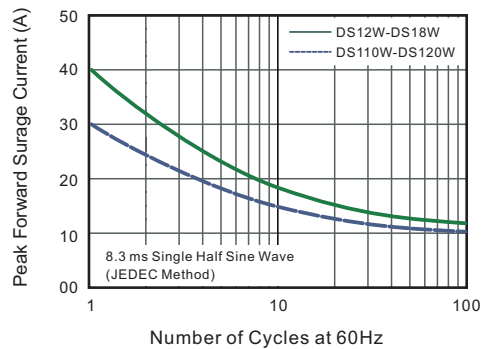
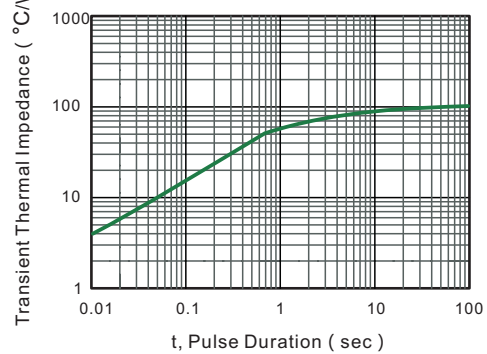


Fig.6- Typical Transient Thermal Impedance

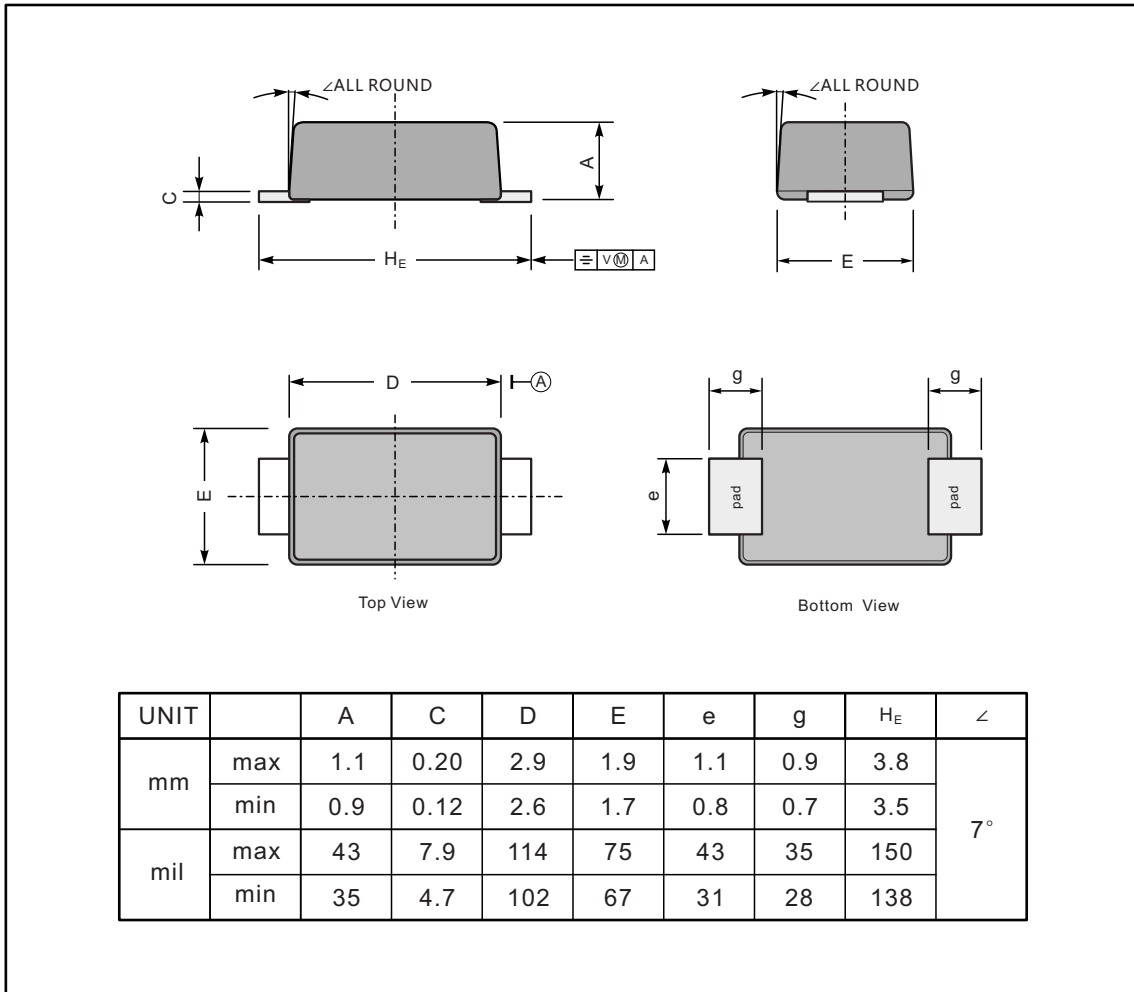




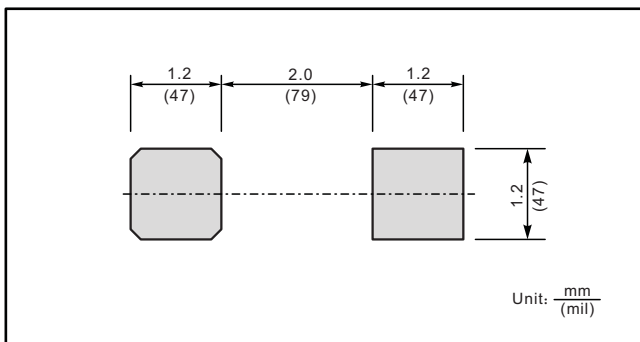
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123FL



The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| DS12W | S12 |
| DS14W | S14 |
| DS16W | S16 |
| DS18W | S18 |
| DS110W | S110 |
| DS112W | S112 |
| DS115W | S115 |
| DS120W | S120 |

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