



## DESCRIPTION

The DS12W~DS120W are available in SOD-123FL package.

## ORDERING INFORMATION

| Package Type                             | Part Number        |
|------------------------------------------|--------------------|
| SOD-123FL                                | DS12W              |
|                                          | DS14W              |
|                                          | DS16W              |
|                                          | DS18W              |
|                                          | DS110W             |
|                                          | DS112W             |
|                                          | DS115W             |
|                                          | DS120W             |
| Note                                     | SPQ: 3,000pcs/Reel |
| AiT provides all RoHS Compliant Products |                    |

## PIN DESCRIPTION



## FEATURES

- 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
- Metal silicon junction, majority carrier conduction
- Available in SOD-123FL package

## MECHANICAL DATA

Case: SOD-123FL

Terminals: Solderable per MIL-STD-750,  
Method 2026

Approx. Weight: 15mg 0.00048oz



## 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                                                                                                    |                                               | Symbol             | DS12W      | DS14W | DS16W | DS18W | DS110W     | DS112W | DS115W   | DS120W | Unit |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|------------|-------|-------|-------|------------|--------|----------|--------|------|
| Maximum Repetitive Peak Reverse Voltage                                                                      |                                               | V <sub>RRM</sub>   | 20         | 40    | 60    | 80    | 100        | 120    | 150      | 200    | V    |
| Maximum RMS Voltage                                                                                          |                                               | V <sub>RMS</sub>   | 14         | 28    | 42    | 56    | 70         | 84     | 105      | 140    | V    |
| Maximum DC Blocking Voltage                                                                                  |                                               | V <sub>DC</sub>    | 20         | 40    | 60    | 80    | 100        | 120    | 150      | 200    | V    |
| Maximum Average Forward Rectified Current                                                                    |                                               | I <sub>F(AV)</sub> | 1.0        |       |       |       |            |        |          |        | A    |
| Peak Forward Surge Current<br>8.3ms Single Half Sine<br>Wave Superimposed on<br>Rated Load (JEDEC<br>Method) |                                               | I <sub>FSM</sub>   | 40         |       |       |       | 30         |        |          |        | A    |
| Max Instantaneous Forward Voltage at 1A                                                                      |                                               | V <sub>F</sub>     | 0.55       |       | 0.70  |       | 0.85       |        | 0.90     |        | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                                      | T <sub>A</sub> =25°C<br>T <sub>A</sub> =100°C | I <sub>R</sub>     | 0.3<br>10  |       |       |       | 0.2<br>5.0 |        | 0.1<br>2 |        | mA   |
| Typical Junction Capacitance <sup>NOTE1</sup>                                                                |                                               | C <sub>J</sub>     | 110        |       | 80    |       |            |        |          |        | pF   |
| Typical Thermal Resistance <sup>NOTE2</sup>                                                                  |                                               | R <sub>θJA</sub>   | 115        |       |       |       |            |        |          |        | °C/W |
| Operating Junction Temperature Range                                                                         |                                               | T <sub>J</sub>     | -55 ~ +125 |       |       |       |            |        |          |        | °C   |
| Storage Temperature Range                                                                                    |                                               | T <sub>STG</sub>   | -55 ~ +150 |       |       |       |            |        |          |        | °C   |

NOTE1: Measured at 1MHz and applied reverse voltage of 4V D.C.

NOTE2: P.C.B. mounted with 0.2 x 0.2" (5 x 5 mm) copper pad areas.



## TYPICAL CHARACTERISTICS

Figure. 1 Forward Current Derating Curve

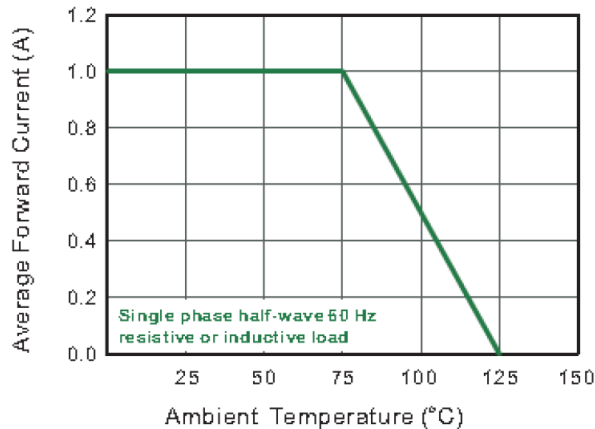


Figure. 2 Typical Reverse Characteristics

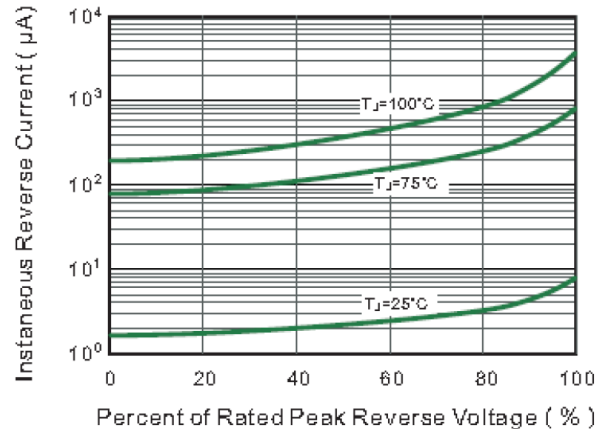


Figure. 3 Typical Forward Characteristic

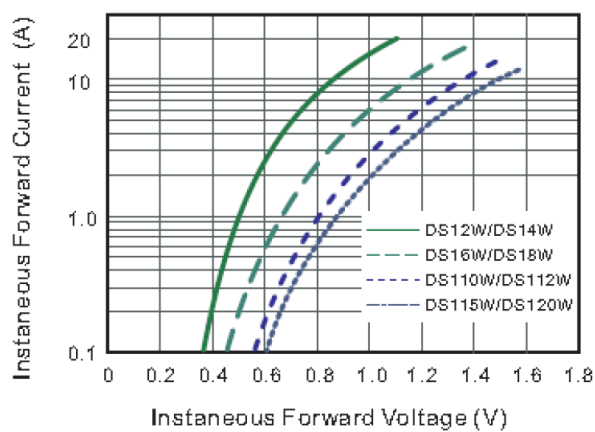


Figure. 4 Typical Junction Capacitance

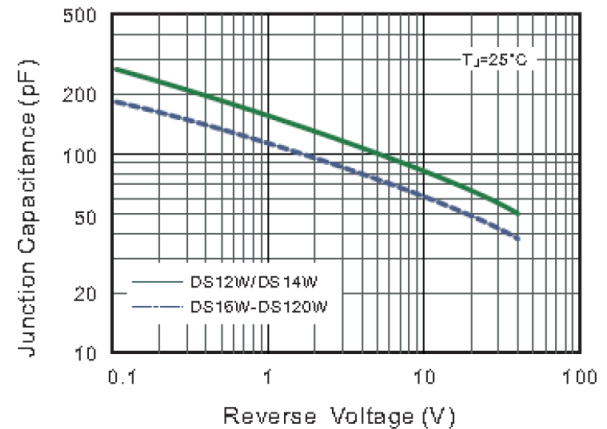


Figure. 5 Maximum Non-Repetitive Peak Forward Surge Current

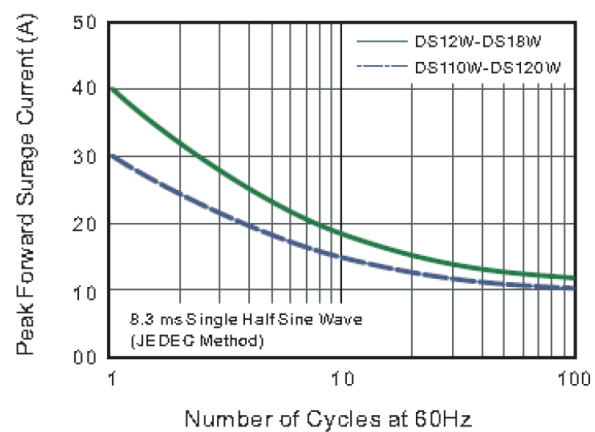
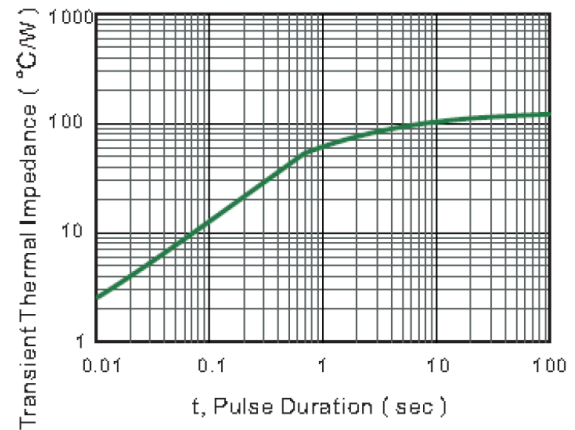


Figure. 6 Typical Transient Thermal Impedance

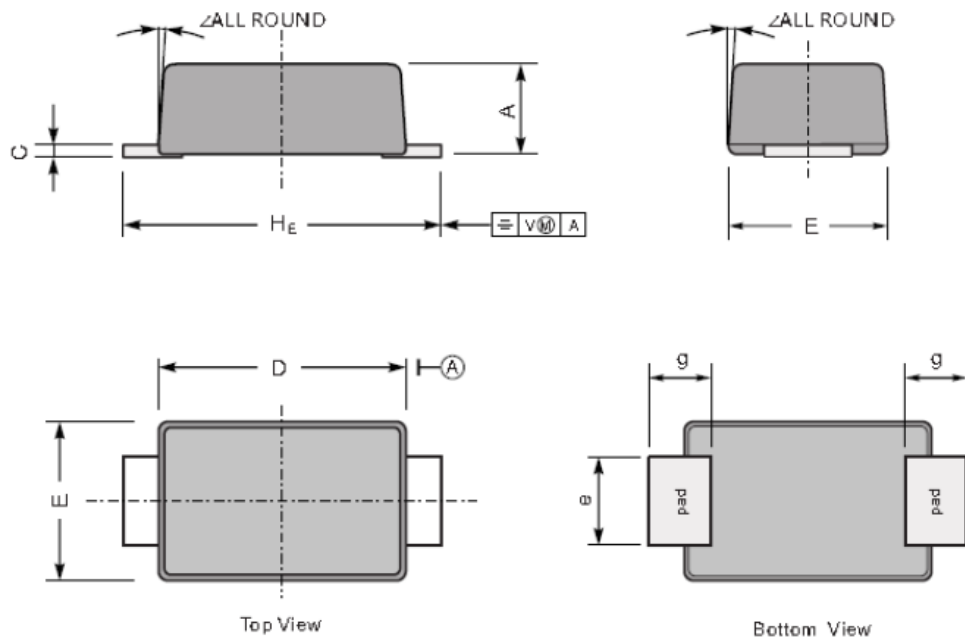




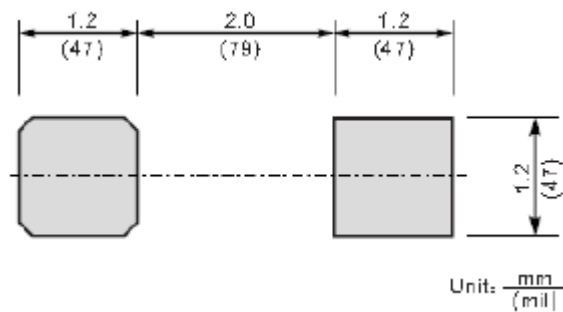
## PACKAGE INFORMATION

Dimension in SOD-123FL (Unit: mm)

Plastic surface mounted package; 2 leads



The recommended mounting pad size



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| mm   | Max | 1.1 | 0.20 | 2.9 | 1.9 | 1.1 | 0.9 | 3.8            | 7° |
|      | Min | 0.9 | 0.12 | 2.6 | 1.7 | 0.8 | 0.7 | 3.5            |    |
| mil  | Max | 43  | 7.9  | 114 | 75  | 43  | 35  | 150            |    |
|      | Min | 35  | 4.7  | 102 | 67  | 31  | 23  | 138            |    |



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