

FR1AW THRU FR1MW

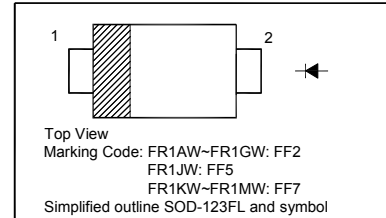
Surface Mount Fast Recovery Rectifiers

Reverse Voltage - 50 to 1000 V

Forward Current - 1 A

PINNING

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



Maximum Ratings and Electrical characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter | Symbols | FR1AW | FR1BW | FR1DW | FR1GW | FR1JW | FR1KW | FR1MW | Units |
|--|----------------|---------------|-------|-------|-------|-------|-------|-------|------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current at $T_a = 65^\circ\text{C}$ | $I_{F(AV)}$ | 1 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) | I_{FSM} | 50 | | | | | | | A |
| Maximum Instantaneous Forward Voltage at 1 A | V_F | 1.3 | | | | | | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$ | I_R | 5 50 | | | | | | | μA |
| Maximum Reverse Recovery Time ¹⁾ | t_{rr} | 150 | | | | 250 | 500 | | ns |
| Typical Junction Capacitance ²⁾ | C_j | 15 | | | | | | | pF |
| Operating and Storage Temperature Range | T_j, T_{stg} | - 55 to + 150 | | | | | | | $^\circ\text{C}$ |

¹⁾ Measured with $I_F = 0.5 \text{ A}$, $I_R = 1 \text{ A}$, $I_{rr} = 0.25 \text{ A}$

²⁾ Measured at 1MHz and applied reverse voltage of 4V D.C

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Fig.1 Forward Current Derating Curve

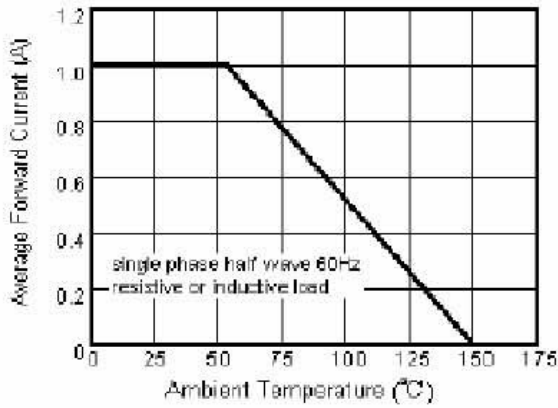


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

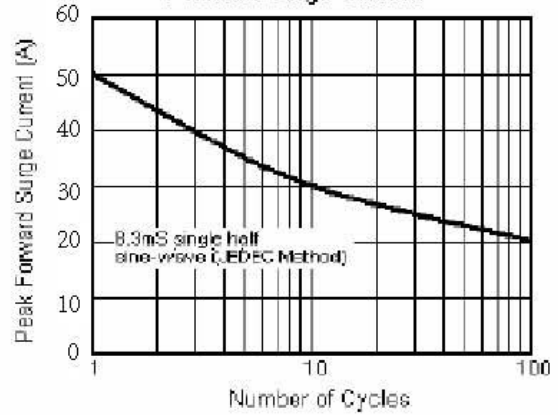


Fig.3 Typical Instantaneous Forward Characteristics

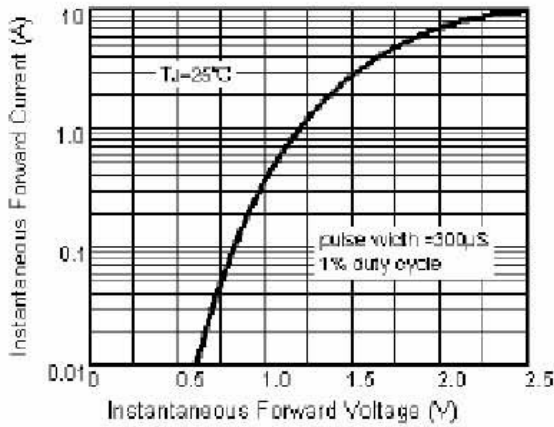


Fig.4 Typical Reverse Characteristics

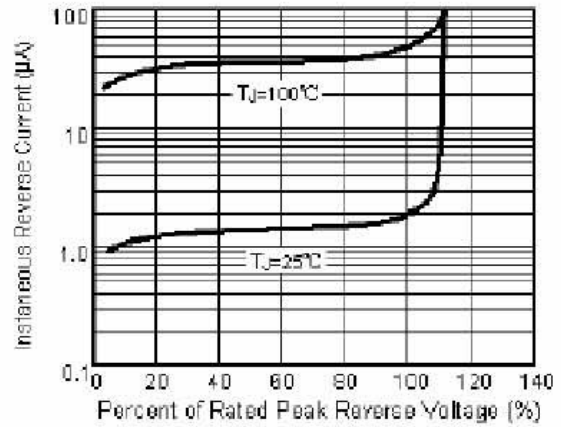
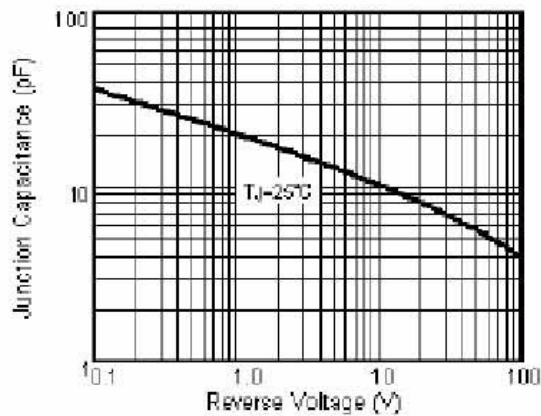


Fig.5 Typical Junction Capacitance



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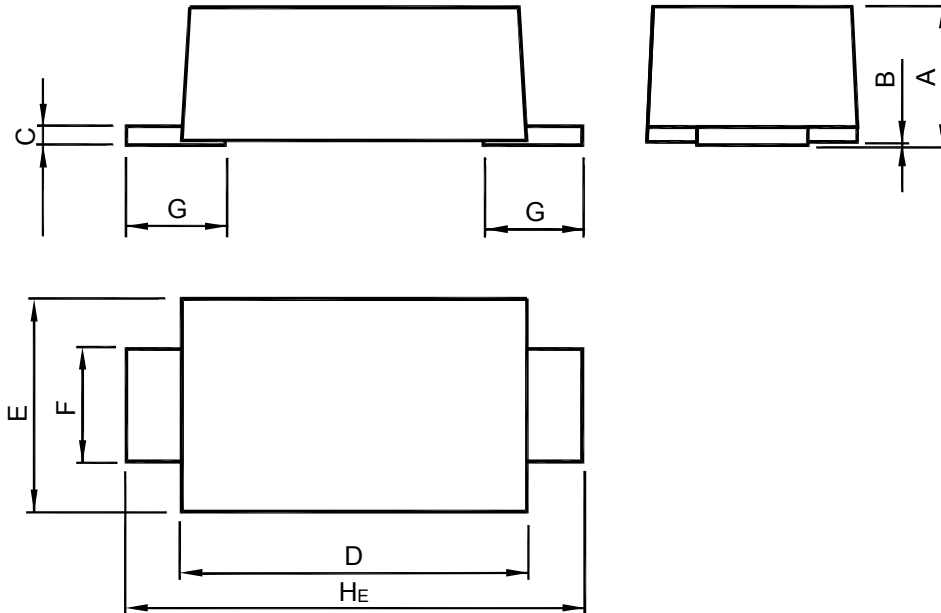
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 ISO 9001 : 2008 Certificate No. 01141412
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PACKAGE OUTLINE

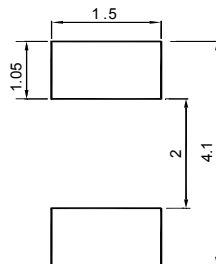
Plastic surface mounted package; 2 leads

SOD-123FL



| UNIT | A | B | C | D | E | F | G | H _E |
|------|--------------|----------|------------|------------|------------|------------|------------|----------------|
| mm | 1.08 0.88 | 0.1 0 | 0.2 0.1 | 2.9 2.6 | 1.9 1.7 | 1.1 0.8 | 0.9 0.7 | 3.9 3.5 |

Recommended Soldering Footprint



Packing information

| Package | Tape Width (mm) | Pitch | | Reel Size | | Per Reel Packing Quantity |
|-----------|-----------------|---------|---------------|-----------|------|---------------------------|
| | | mm | inch | mm | inch | |
| SOD-123FL | 8 | 4 ± 0.1 | 0.157 ± 0.004 | 178 | 7 | 3,000 |

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Dated: 03/08/2013 Rev: 01