

Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 100 to 200 V

Forward Current – 1 A

FEATURES

- Easy pick and place
- For surface mounted applications
- Low profile package
- Built-in strain relief
- Superfast recovery times for high efficiency
- Hireliability application and automotive grade AEC-Q101 qualified

MECHANICAL DATA

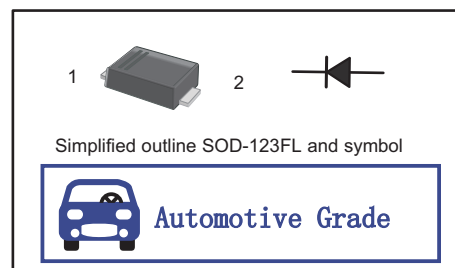
- Case: SOD-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 15mg 0.00053oz

Absolute Maximum Ratings and Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Parameter	Symbols	AT-ESMUR1BW	AT-ESMUR1DW	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	200	V
Maximum RMS voltage	V_{RMS}	70	140	V
Maximum DC Blocking Voltage	V_{DC}	100	200	V
Maximum Average Forward Rectified Current @ Fig.1	$I_{F(AV)}$	1		A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	50		A
Peak Forward Surge Current, 1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	100		A
I^2t Rating for fusing (3ms ≤ t ≤ 8.3ms)	I^2t	10.3		A ² S
Max Instantaneous Forward Voltage at 1 A	V_F	0.93		V
Maximum DC Reverse Current at Rated DC Reverse Voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$	I_R	0.2 8		μA
Typical Junction Capacitance ⁽¹⁾	C_j	25		pF
Maximum Reverse Recovery Time ⁽²⁾	t_{rr}	25		ns
Typical Thermal Resistance ⁽³⁾	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	105 25 32		°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150		°C

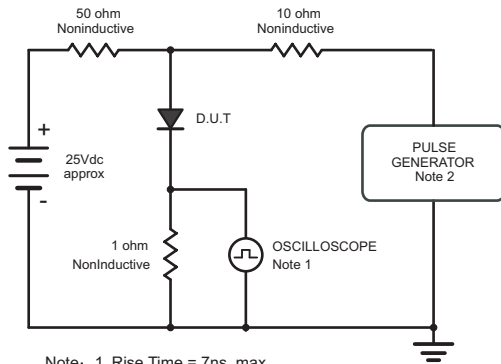
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

(3) P.C.B. mounted with 0.2" X 0.2" (5 X 5 mm) copper pad areas.



Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
Input Impedance = 1megohm, 22pF.
2. Rise Time = 10ns, max.
Source Impedance = 50 ohms.

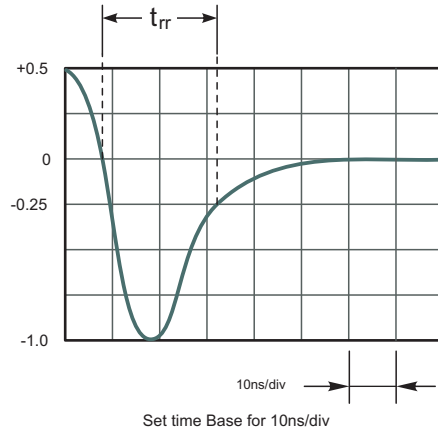


Fig.2 Maximum Average Forward Current Rating

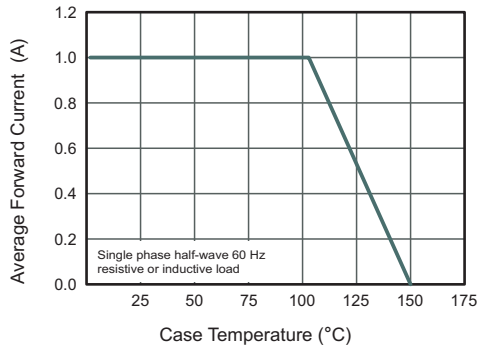


Fig.3 Typical Reverse Characteristics

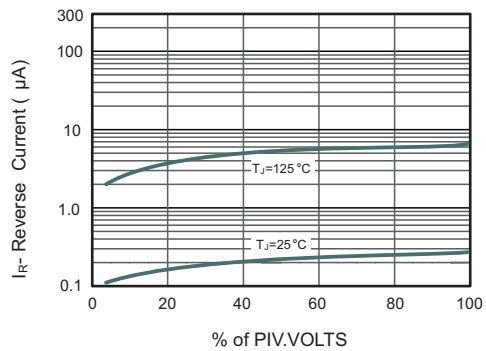


Fig.4 Typical Forward Characteristics

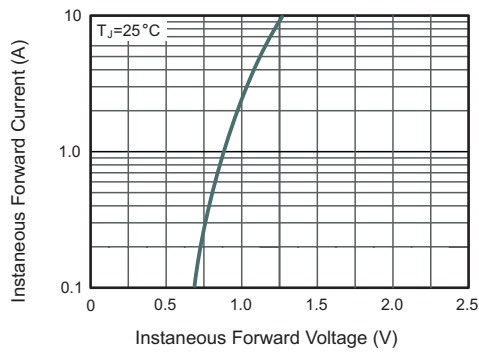


Fig.5 Typical Junction Capacitance

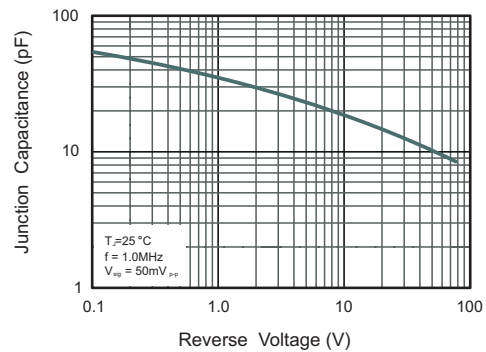
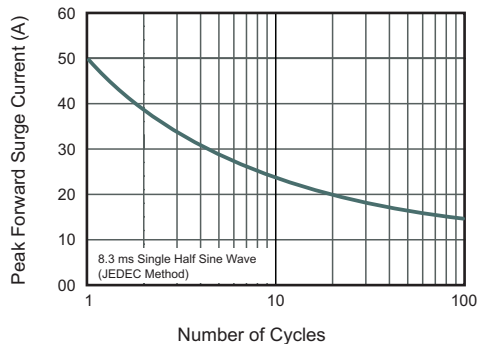


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

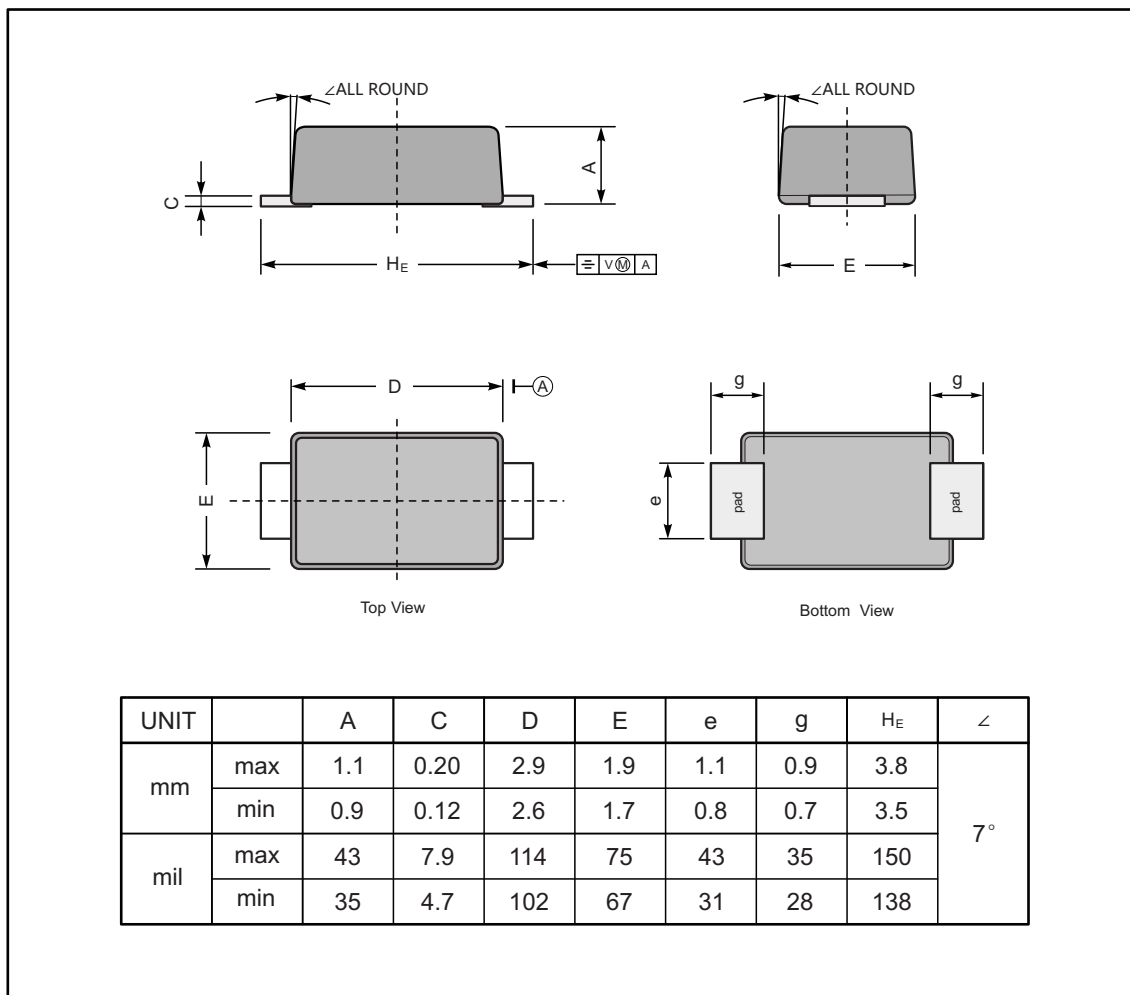




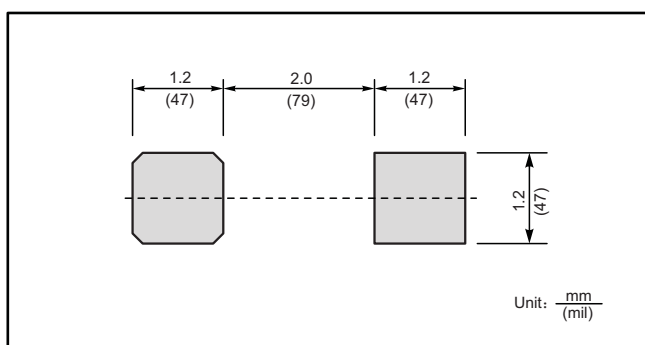
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123FL



The recommended mounting pad size



Marking

Type number	Marking code
AT-ESMUR1BW	M1B
AT-ESMUR1DW	M1D



Important Notice and Disclaimer

Jingdao Microelectronics reserves the right to make changes to this document and its products and specifications at any time without notice.

Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

Jingdao Microelectronics makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Jingdao Microelectronics assume any liability for application assistance or customer product design.

Jingdao Microelectronics does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Jingdao Microelectronics.

Jingdao Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of Jingdao Microelectronics.