



# DSF1A THRU DSF1J

## Surface Mount Superfast Rectifiers

Reverse Voltage – 50 to 600 V

Forward Current – 1 A

### FEATURES

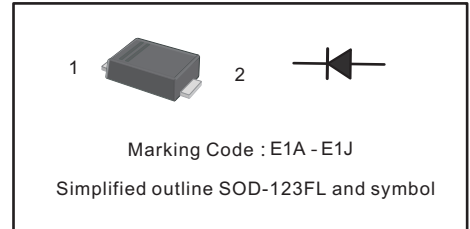
- Easy pick and place
- For surface mounted applications
- Low profile package
- Built-in strain relief
- Superfast recovery times for high efficiency

### 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



### 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%.

Parameter	Symbols	DSF1A	DSF1B	DSF1C	DSF1D	DSF1F	DSF1G	DSF1J	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current at $T_c = 125^\circ\text{C}$	$I_{F(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	30							A
Maximum Forward Voltage at 1 A	$V_F$	1.0			1.25		1.65	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					100	$\mu\text{A}$	
Typical Junction Capacitance at $V_R = 4\text{V}$ , $f = 1\text{MHz}$	$C_j$	15					pF		
Maximum Reverse Recovery Time <sup>(1)</sup>	$t_{rr}$	35					ns		
Typical Thermal Resistance <sup>(2)</sup>	$R_{\theta JA}$	85					$^\circ\text{C/W}$		
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150							$^\circ\text{C}$

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

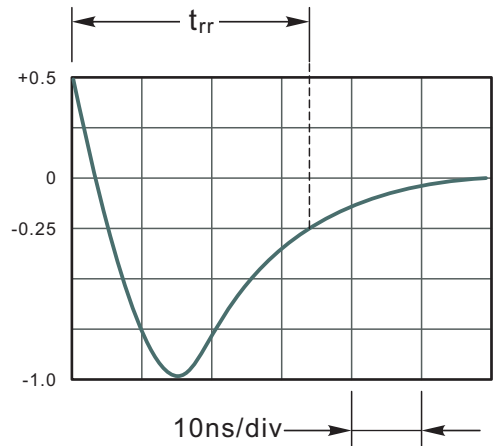
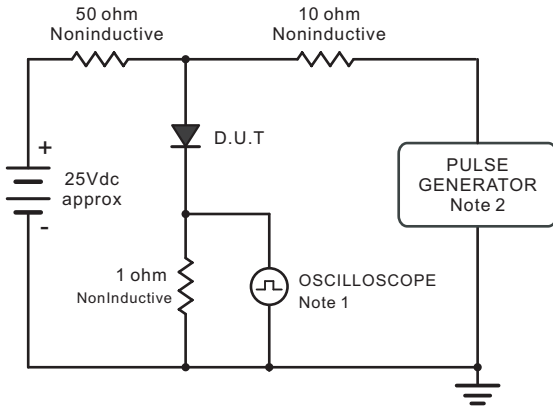
(2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



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## Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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

Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

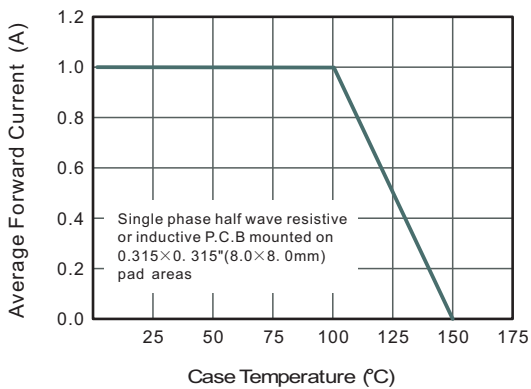


Fig.3 Typical Reverse Characteristics

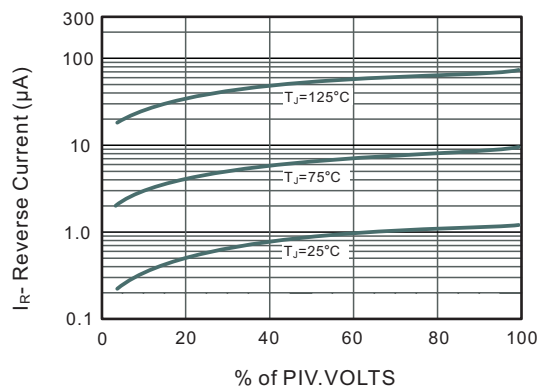


Fig.4 Typical Forward Characteristics

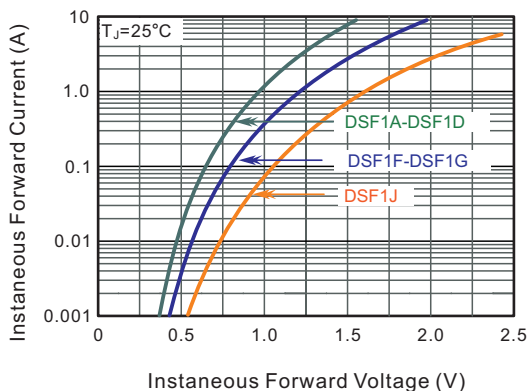
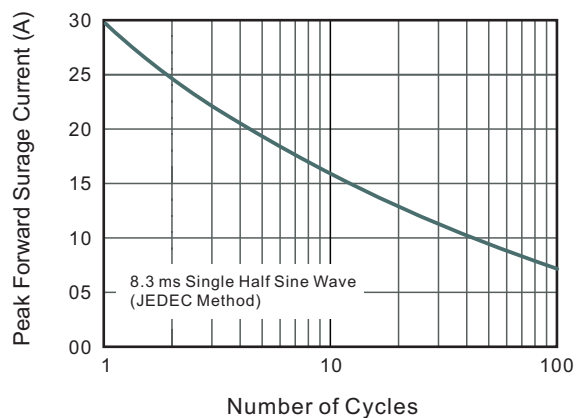


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current





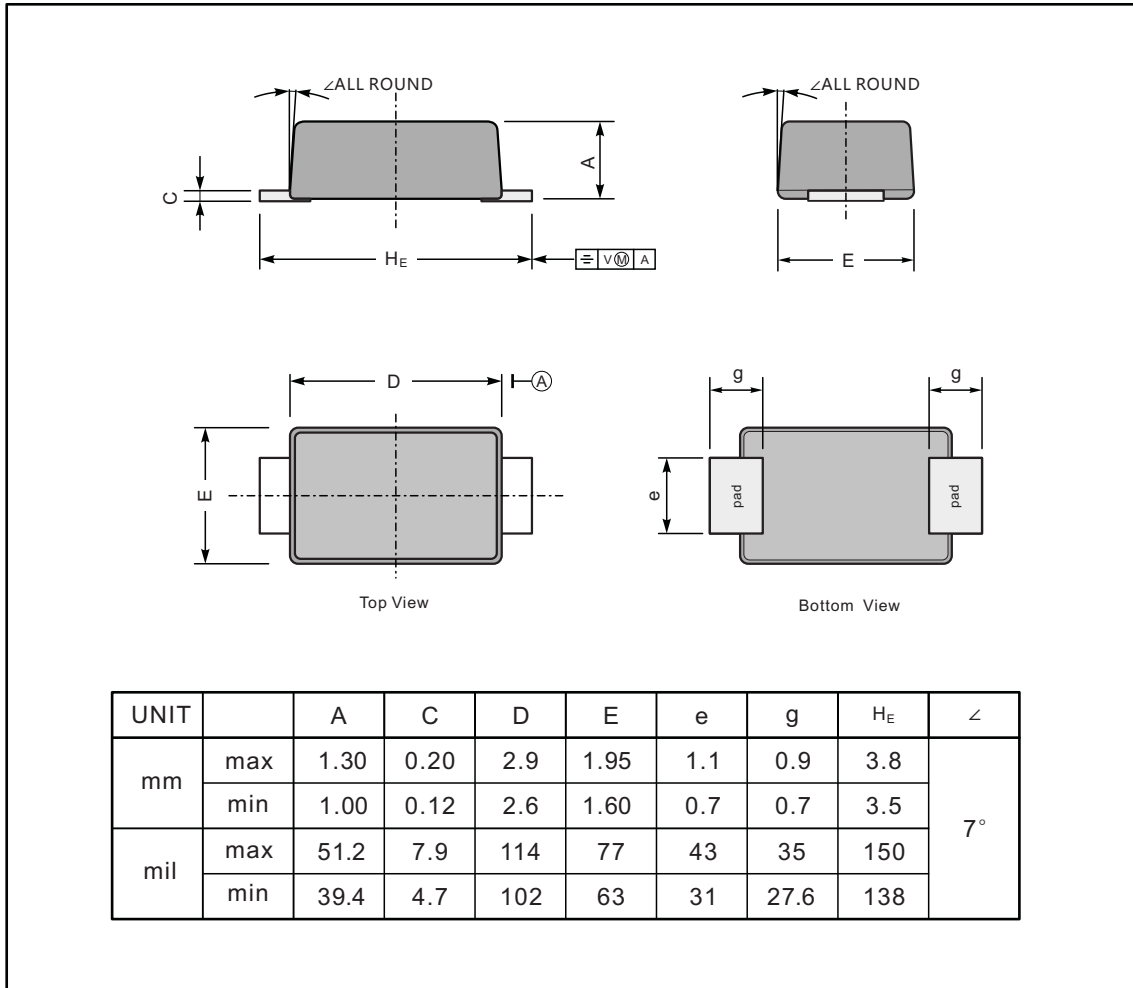
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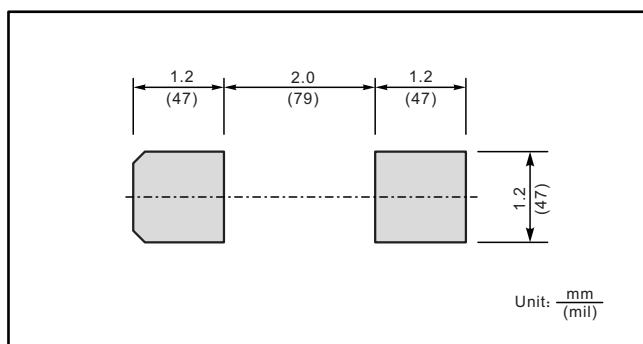
### PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123FL



### The recommended mounting pad size



### Marking

Type number	Marking code
DSF1A	E1A
DSF1B	E1B
DSF1C	E1C
DSF1D	E1D
DSF1F	E1F
DSF1G	E1G
DSF1J	E1J