



## U1A THRU U1M

VOLTAGE RANGE 50 to 1000 Volts  
CURRENT 1.0 Ampere



## Features

- Fast recovery glass passivated
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260°C/10S at terminals
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC



## Mechanical Data

- Case: JEDEC SOD-123FL mold plastic Body over glass passivated chip
- Terminals: Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- Weight: 0.00063ounce, 0.018grams

## 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 current by 20%

TYPE NUMBER		SYMBOLS	U1A	U1B	U1D	U1G	U1J	U1K	U1M	UNITS
Maximum Repetitive Peak Reverse Voltage		V <sub>RRM</sub>	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage		V <sub>RMS</sub>	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage		V <sub>DC</sub>	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current At T <sub>A</sub> =100°C		I <sub>(AV)</sub>	1.0							Amps
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method)		I <sub>FSM</sub>	30							Amps
Maximum Instantaneous Forward Voltage per at 1.0A		V <sub>F</sub>	1.0			1.30	1.70			Volts
Maximum DC Reverse Current at rated DC Blocking Voltage	T <sub>A</sub> = 25°C	I <sub>R</sub>	5.0							μA
	T <sub>A</sub> = 125°C		100							
Typical Reverse Recovery Time Test conditions <sup>(Note 1)</sup>		T <sub>RR</sub>	50				75			nS
Typical Junction Capacitance <sup>(Note 2)</sup>		C <sub>J</sub>	20				15			pF
Typical Thermal Resistance <sup>(NOTE 3)</sup>		R <sub>θJA</sub>	60							°C/W
		R <sub>θJL</sub>	45							
Operating Junction Temperature		T <sub>J</sub>	(-55 to +150)							°C
Storage Temperature Range		T <sub>STG</sub>	(-55 to +150)							°C

## Notes:

- 1.Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$ .
- 2.Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
- 3.Thermal Resistance from Junction to Ambient at 5.0×5.0mm<sup>2</sup> copper pad areas.



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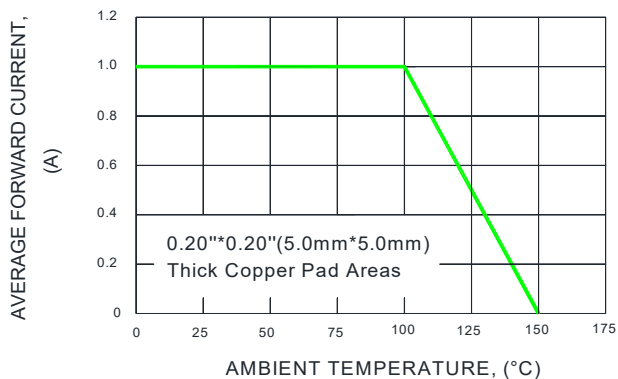
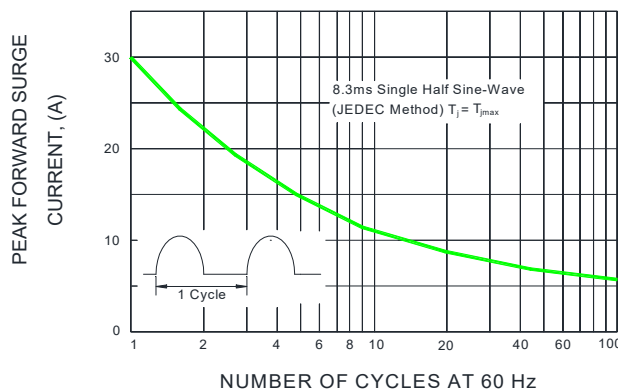
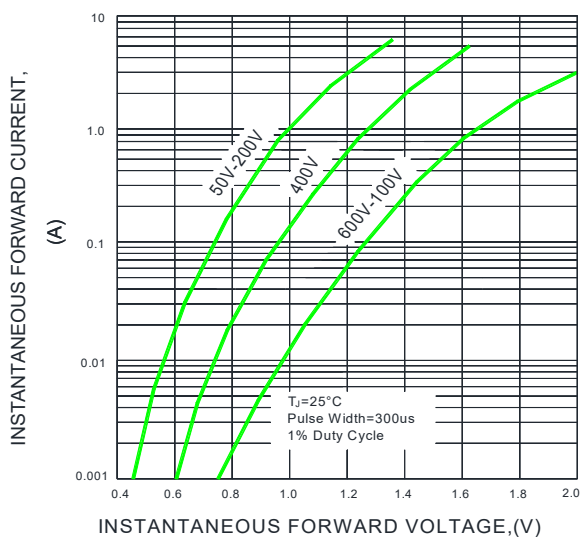
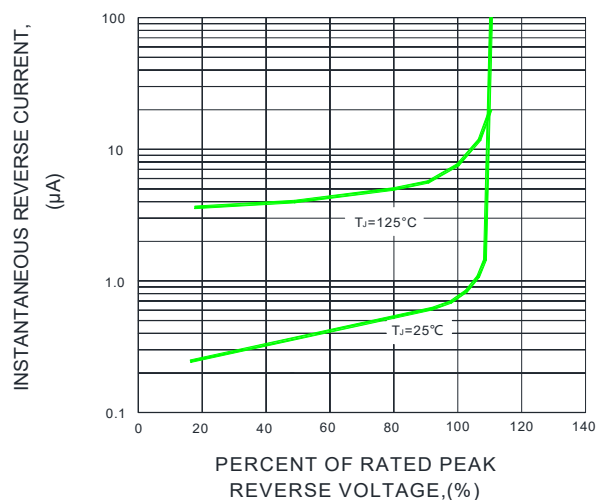
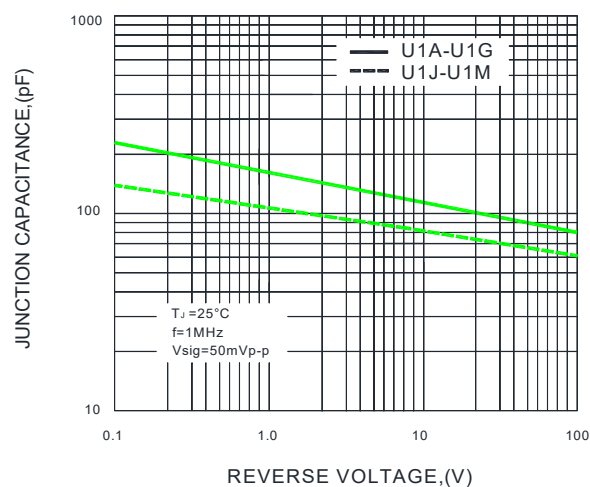
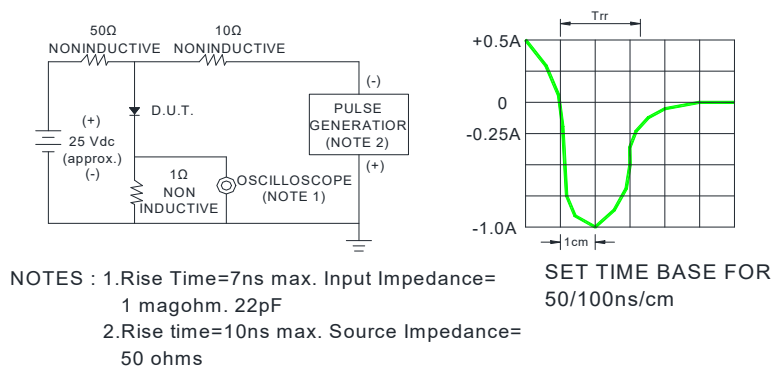
Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)FIG.1-TYPICAL FORWARD CURRENT  
DERATING CURVEFIG.2-MAXIMUM NON-REPETITIVE PEAK  
FORWARD SURGE CURRENTFIG.3-TYPICAL INSTANTANEOUS  
FORWARD CHARACTERISTICSFIG.4-TYPICAL REVERSE  
CHARACTERISTICS

FIG.5-TYPICAL JUNCTION CAPACITANCE

FIG.6-TEST CIRCUIT DIAGRAM AND  
REVERSE RECOVERY TIME CHARACTERISTIC



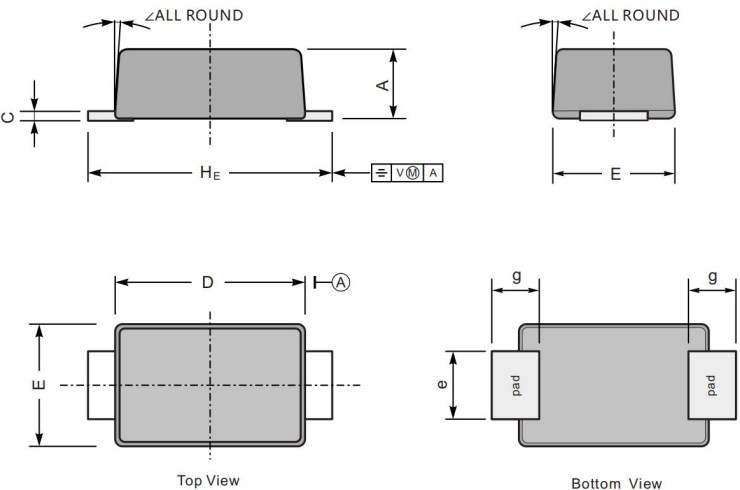
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Package Outline Dimensions in inches (millimeters)

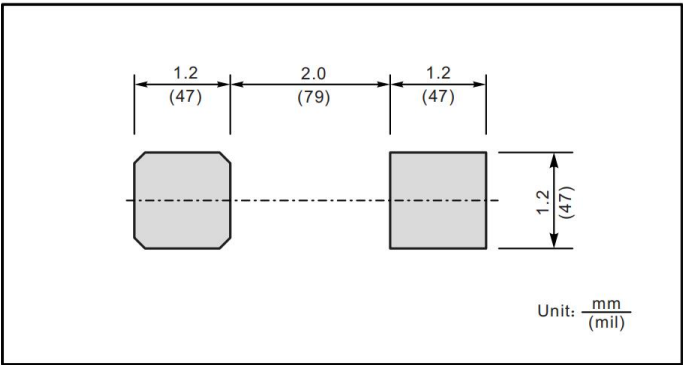
SOD-123FL

Unit: mm



UNIT		A	C	D	E	e	g	H <sub>E</sub>	$\angle$
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	28	138	

The recommended mounting pad size



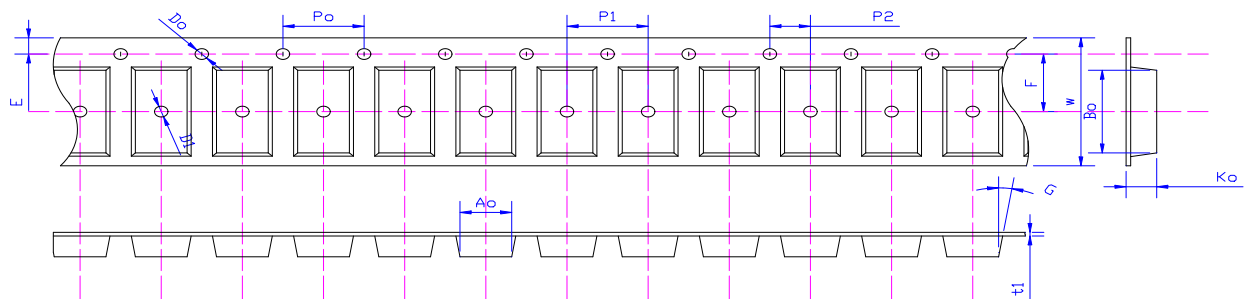


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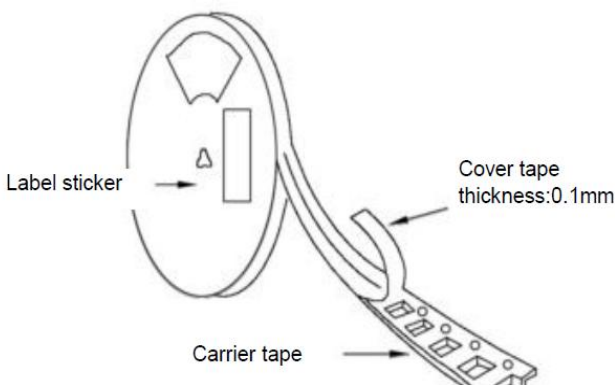
## Packing Requirments

- PS black anti-static carrier tape packing



Specifications	Ao	Bo	Ko	Po	W	t1
SOD123FL	2.12±0.10	3.95±0.10	1.35±0.10	4.00±0.1	8.0±0.10	0.20±0.02

- 7 "antistatic plastic reel



DEVICE TYPE	07" Reel			
	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOON	Q'TY/CARTON(pcs)
SOD123FL	3000	4	16	192000

## Reflow Profile



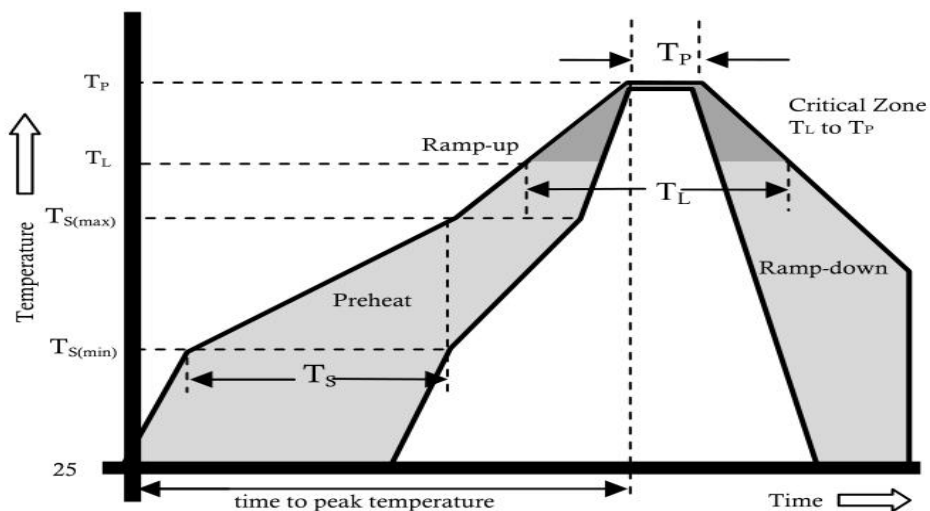
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Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
$T_{S(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature ( $T_L$ )(Liquidus)	+217°C
	Temperature ( $T_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5 )°C
Time within 5°C of actual Peak Temp ( $T_P$ )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C



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