



SURFACE MOUNT FAST RECOVERY RECTIFIER

F1 THRU F7

VOLTAGE RANGE	50 to 1000 Volts
CURRENT	1.0 Ampere



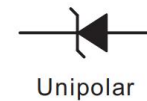
Features

- 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	F1	F2	F3	F4	F5	F6	F7	UNITS
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current	$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30							Amps
Maximum Instantaneous Forward Voltage at 1.0A	V_F	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^\circ C$	5.0							μA
	$T_A = 125^\circ C$	50							
Maximum Reverse Recovery Time ^(NOTE1)	T_{RR}	150				250	500		nS
Typical Junction Capacitance ^(NOTE2)	C_j	15							pF
Typical Thermal Resistance ^(NOTE3)	$R_{\theta JA}$	60							°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150							°C

Notes:

- 1.Reverse Recovery Test Conditions: $I_f=0.5A, I_r=1.0A, I_{rr}=0.25A$.
- 2.Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
- 3.Thermal Resistance from Junction to Ambient at 5.0×5.0mm² 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 CURVE

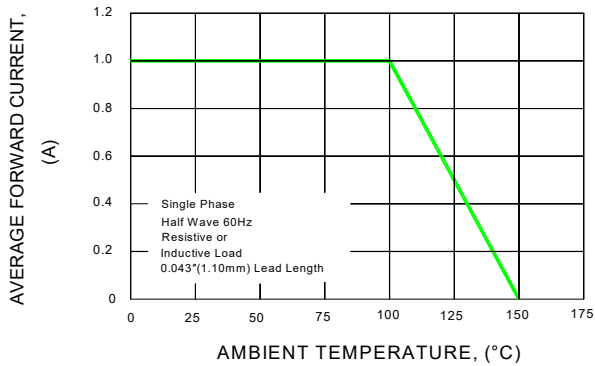


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

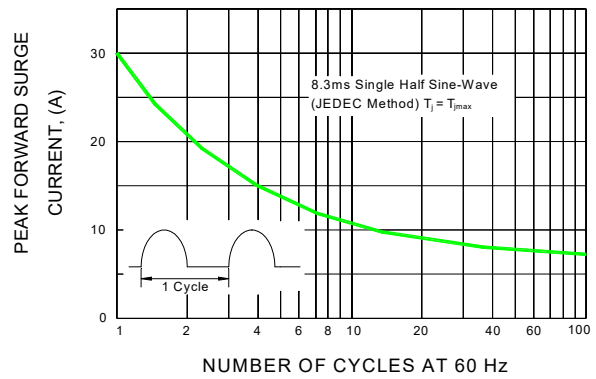


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

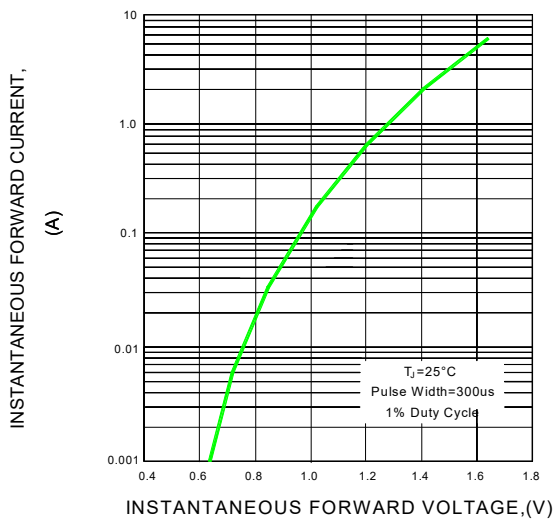


FIG.4-TYPICAL REVERSE CHARACTERISTICS

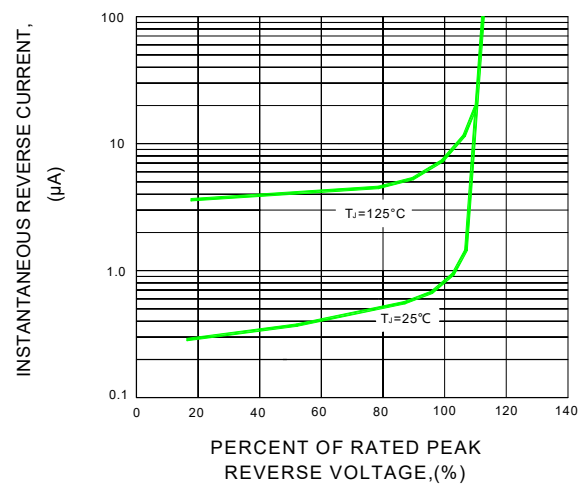


FIG.5-TYPICAL JUNCTION CAPACITANCE

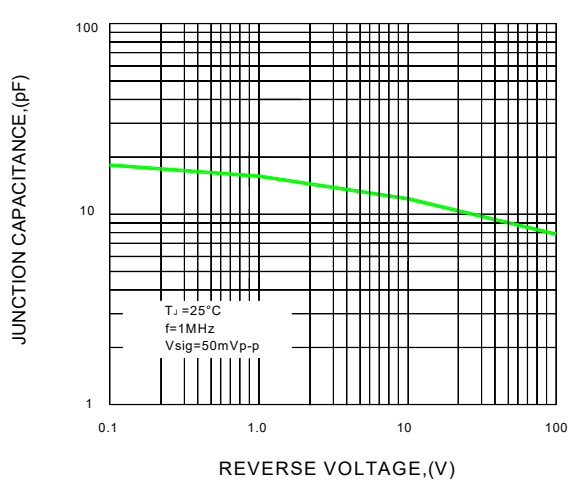
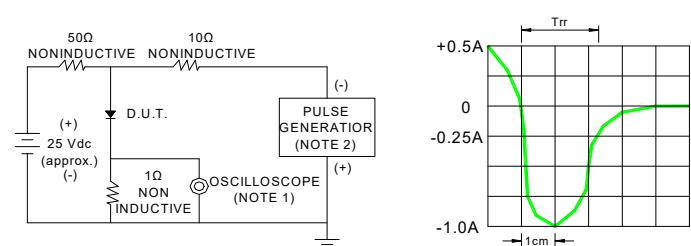


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES : 1.Rise Time=7ns max. Input Impedance= 1 magohm. 22pF
2.Rise time=10ns max. Source Impedance= 50 ohms

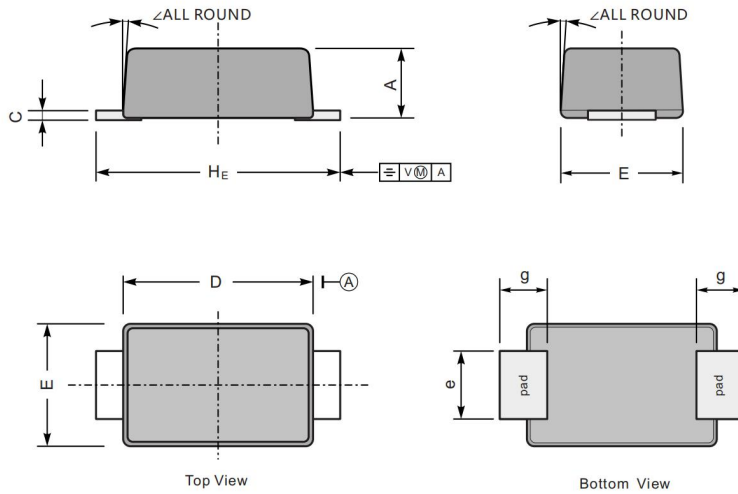
SET TIME BASE FOR 50/100ns/cm



Package Outline Dimensions in inches (millimeters)

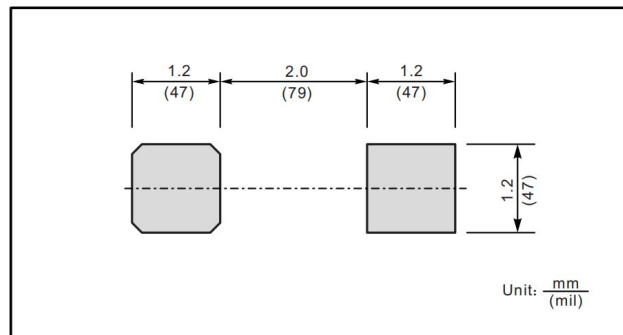
SOD-123FL

Unit: mm



UNIT		A	C	D	E	e	g	H_E	\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	

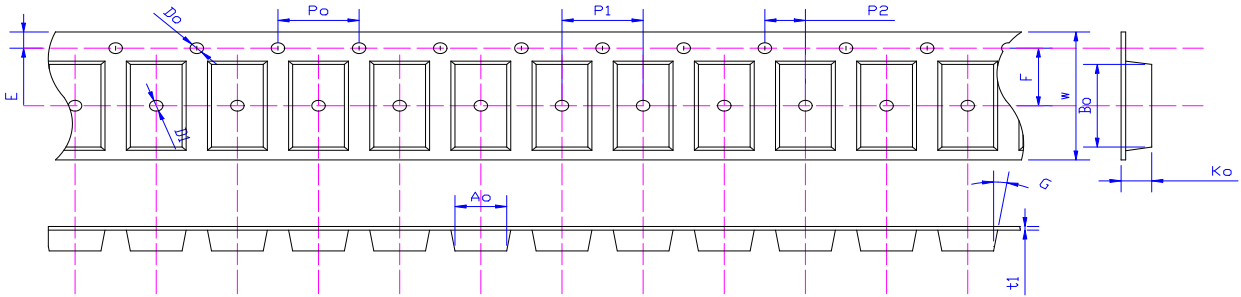
The recommended mounting pad size





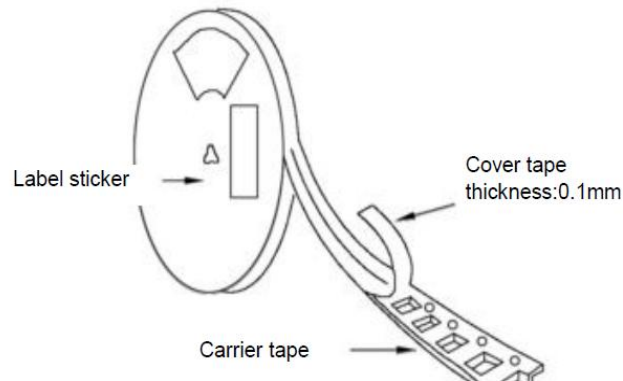
Packing Requirements

- 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

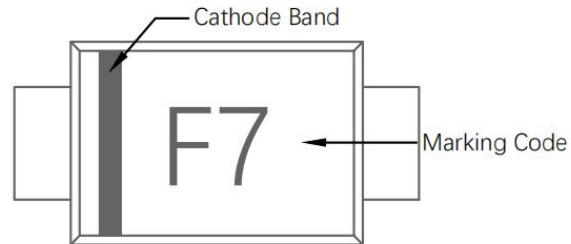


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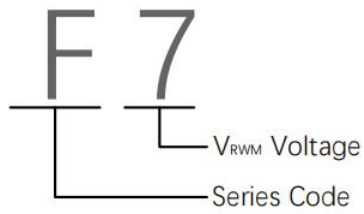
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Marking Code

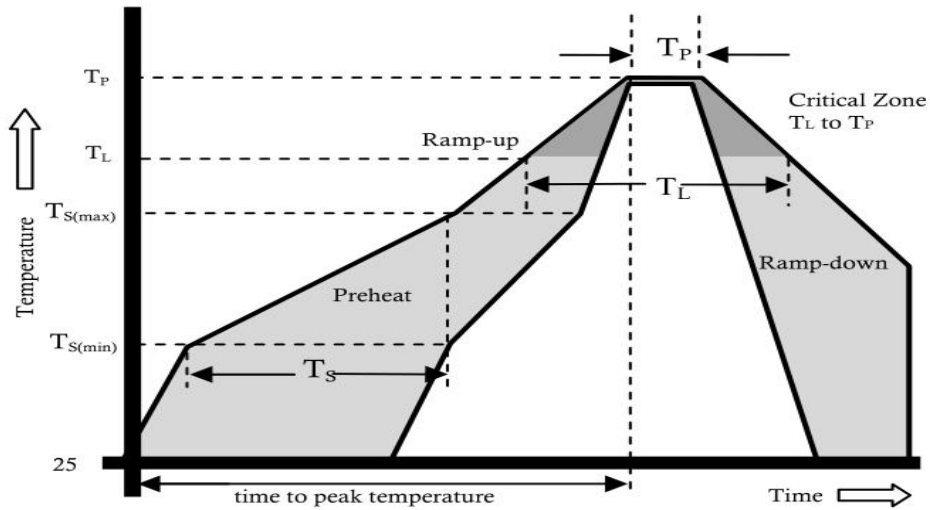


Part Number Code





Reflow Profile



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_I)	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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