



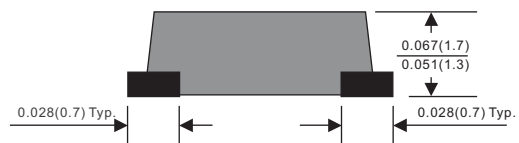
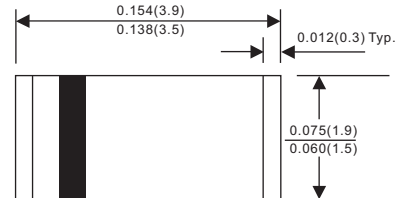
### 1.0A SUFRACE MOUNT EFFICIENT FAST RECTIFIERS-50-600V SOD-123-L PACKAGE

#### Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile surface mounted application in order to optimize board space.
- Tiny plastic SMD package.
- Trr less than 25ns for high efficiency
- High current & surge capability.
- Low forward dropdown voltage
- Glass passivated chip junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

#### Package outline

SOD-123L



Dimensions in inches and (millimeters)

#### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123L
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.018 gram

#### Maximum ratings and Electrical Characteristics (AT T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.2	I <sub>o</sub>			1.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I <sub>FSM</sub>			25	A
Reverse current	V <sub>R</sub> = V <sub>RRM</sub> T <sub>J</sub> = 25°C	I <sub>R</sub>			5.0	μA
	V <sub>R</sub> = V <sub>RRM</sub> T <sub>J</sub> = 125°C				100	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C <sub>J</sub>		15		pF
Storage temperature		T <sub>STG</sub>	-65		+175	°C

SYMBOLS	V <sub>RRM</sub> <sup>*1</sup> (V)	V <sub>RMS</sub> <sup>*2</sup> (V)	V <sub>R</sub> <sup>*3</sup> (V)	V <sub>F</sub> <sup>*4</sup> (V)	t <sub>rr</sub> <sup>*5</sup> (ns)	Operating temperature T <sub>J</sub> , (°C)
UFM101-M	50	35	50	0.875	25	-55 to +150
UFM102-M	100	70	100			
UFM103-M	200	140	200			
UFM104-M	400	280	400	1.25		
UFM105-M	600	420	600	1.75		

- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage@I<sub>F</sub>=1.0A
- \*5 Maximum Reverse recovery time, note 1

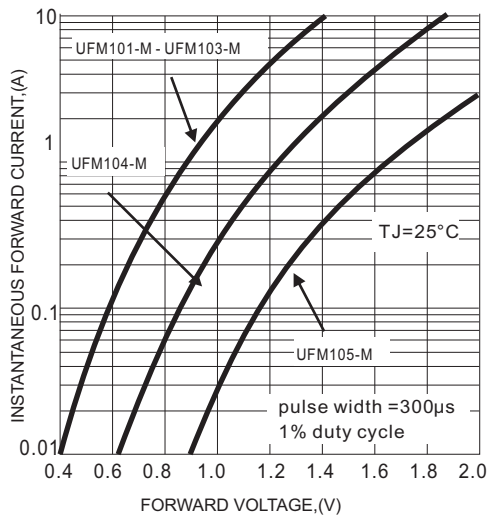
Note 1. Reverse recovery time test condition, I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

#### Reel packing

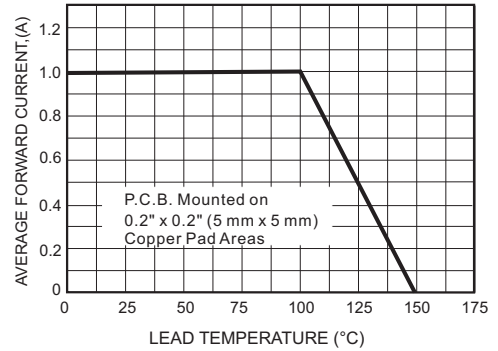
PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD-123L	7"	2,500	4.0	25,000	183*183*123	178	382*262*387	200,000	9.5

**Rating and characteristic curves**

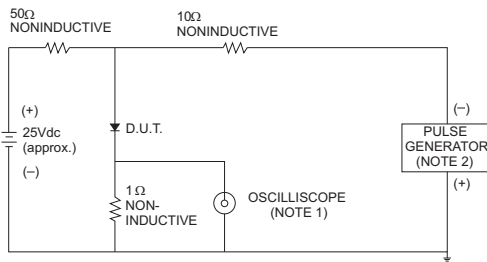
**FIG.1-TYPICAL FORWARD CHARACTERISTICS**



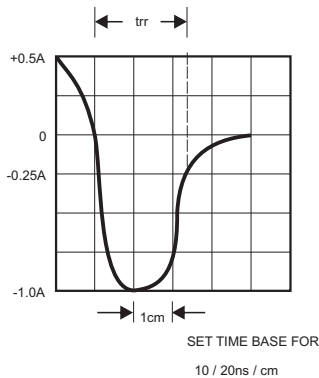
**FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE**



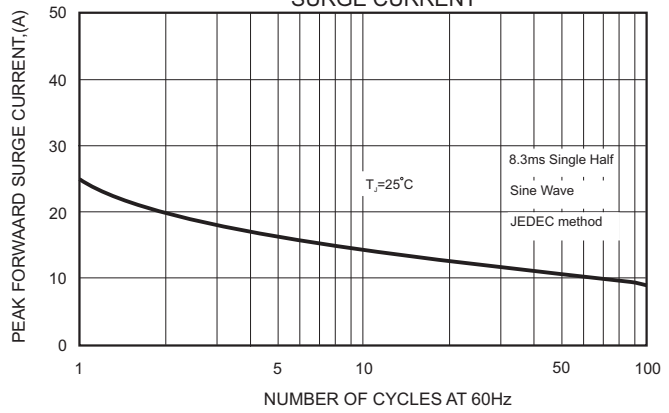
**FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS**



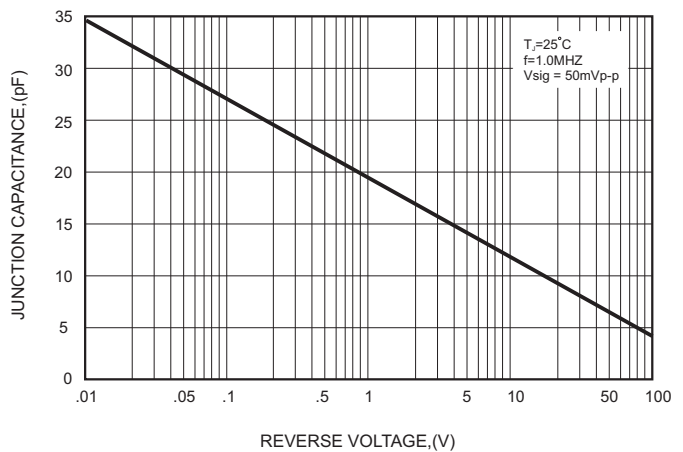
NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.  
2. Rise Time= 10ns max., Source Impedance= 50 ohms.



**FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**





#### Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

#### Ordering and Marking information

Type number	Marking code
UFM101-M-TH	E1
UFM102-M-TH	E2
UFM103-M-TH	E3
UFM104-M-TH	E4
UFM105-M-TH	E5

Note: -M: Package code, SOD-123-L

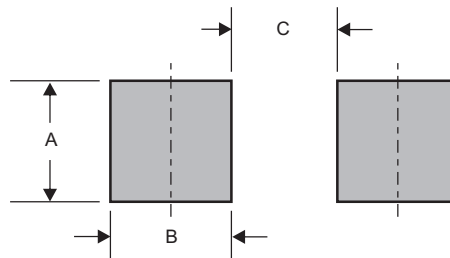
-T: Taping Reel

**Pb-Free package is available**

RoHS product for packing code suffix "G"

Halogen free product for packing code suffix "H"

#### Suggested solder pad layout

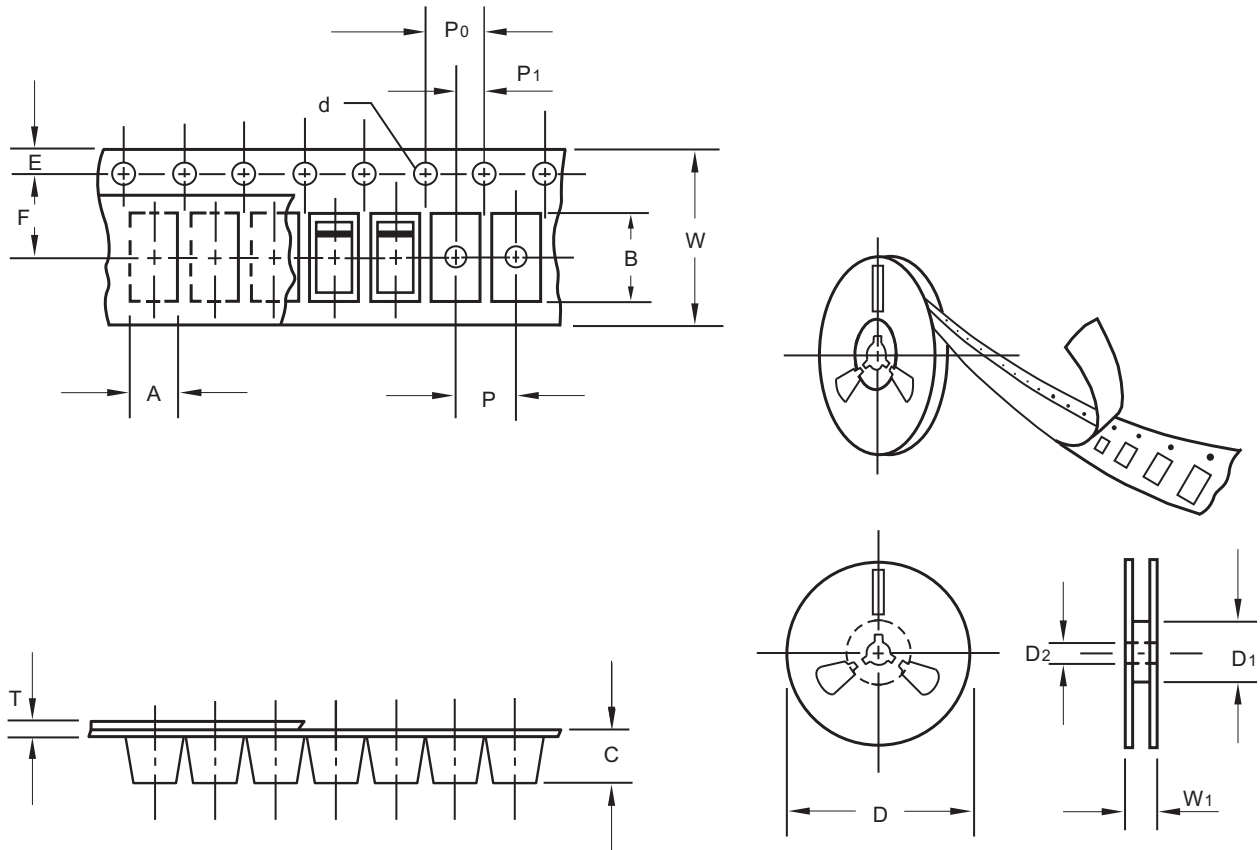


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123-L	0.075 (1.90)	0.055 (1.40)	0.075 (1.90)



### Packing information



unit:mm

Item	Symbol	Tolerance	SOD-123-L
Carrier width	A	0.1	1.90
Carrier length	B	0.1	3.90
Carrier depth	C	0.1	1.68
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	62.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W1	1.0	11.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.