

## LOW VF SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 40 Volts  
Forward Current - 2.0Amperes

### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU



SOD-123FL



### Mechanical Data

- Case: SOD-123FL molded plastic body
- Terminals: Solder Plated, solderable per MIL-STD-750,method 2026
- Polarity: Color band denotes cathode end
- Weight: 11.7 mg(approximately)
- Marking: L24

### Typical Applications

For use in low voltage ,high frequency inverters ,DC/DC converters,  
free wheeling ,and polarity protection applications

Primary Characteristics	
$I_F(AV)$	2.0A
$V_{RRM}$	40V
$I_{FSM}$	50A
$V_F$ at $I_F=2.0A(100^{\circ}C)$	0.40V
$I_R(Max)$	50 $\mu$ A
$T_J(Max)$	150°C
Package	SOD-123FL

### Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified )

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	40	V
Maximum average forward rectified current	$I_F(AV)$	2.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	50	A
Operating junction temperature range	$T_J$	-55 to +150	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous Forward Voltage	T <sub>J</sub> =25°C	I <sub>F</sub> =0.1A	V <sub>F</sub> <sup>1)</sup>	0.30	-	V
		I <sub>F</sub> =0.5A		0.36	-	
		I <sub>F</sub> =1.0A		0.40	-	
		I <sub>F</sub> =2.0A		0.46	0.50	
	T <sub>J</sub> =100°C	I <sub>F</sub> =0.1A		0.18	-	
		I <sub>F</sub> =0.5A		0.26	-	
		I <sub>F</sub> =1.0A		0.32	-	
		I <sub>F</sub> =2.0A		0.40	-	
Reverse Current	T <sub>J</sub> =25°C	V <sub>R</sub> =20V	I <sub>R</sub> <sup>2)</sup>	5	-	μA
		V <sub>R</sub> =30V		15	-	
		V <sub>R</sub> =40V		30	50	
	T <sub>J</sub> =100°C	V <sub>R</sub> =20V		-	2.5	mA
		V <sub>R</sub> =30V		-	3.5	
		V <sub>R</sub> =40V		-	5	
Typical Junction Capacitance	4V, 1MHz		C <sub>J</sub>	106	-	pF

Notes: 1.Pulse test: 300 μs pulse width, 1% duty cycle

2.Pulse test: pulse width ≤ 40ms

## Thermal Characteristics

Parameter	Symbol	L24	Unit
Typical thermal resistance <sup>3)</sup> Junction to Ambient	R <sub>θJA</sub>	82	°C/W
	R <sub>θJL</sub>	26	

3.Mounted on 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board. The heat generated must be less than the thermal conductivity from junction-to-ambient:  $dP_J/dT_J < 1/R_{\theta JA}$

## Available Pack Information

Product code	Pack	Reel Size (mm)	Quantity (pcs/reel)	Box Size L×W×H (mm)	Quantity (reel/box)	Carton Size L×W×H (mm)	Quantity (box/carton)
L24-SOD-123FL	T/R	Φ330	7500	330×35×333	2	364×364×360	8

Fig.1-Forward Current Derating Curve

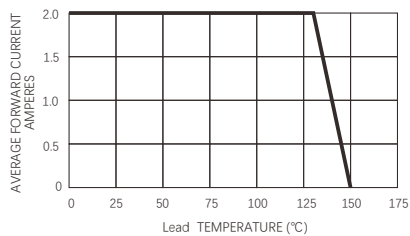


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

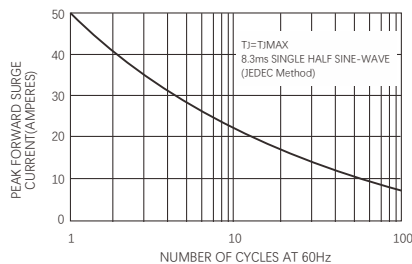


Fig.3-Typical Instantaneous Forward Characteristics

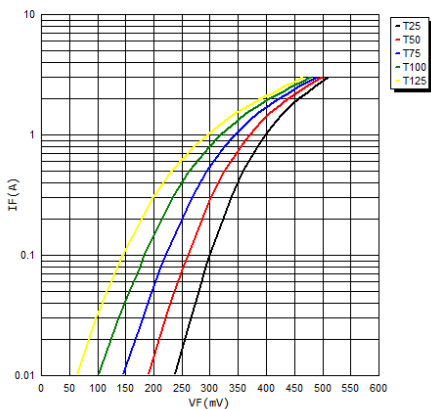


Fig.4-Typical Reverse Characteristics

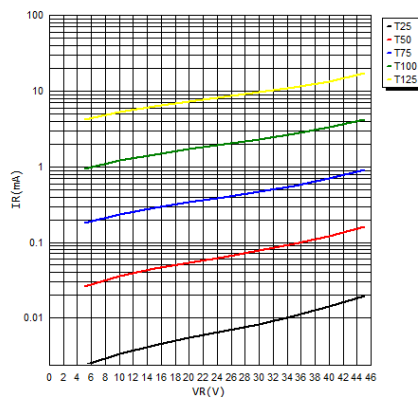
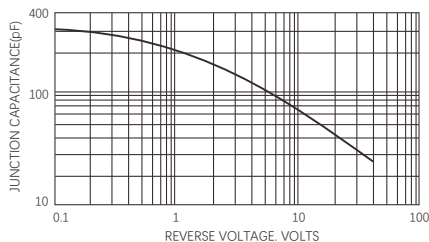
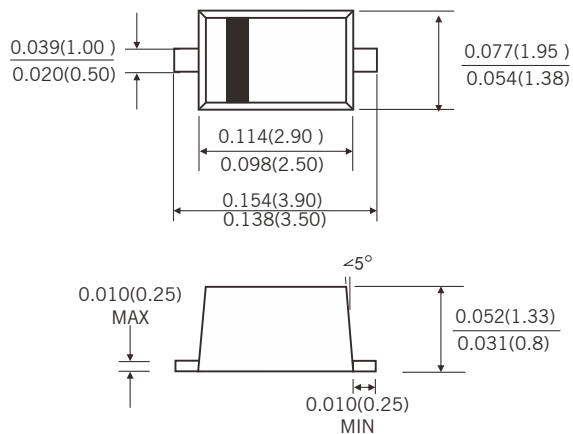


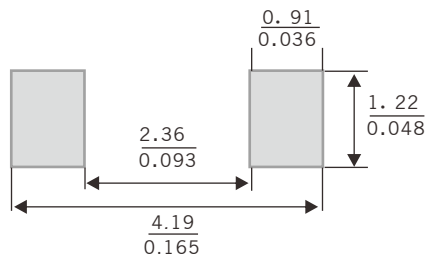
Fig.5-Typical Junction Capacitance



## SOD-123FL



## Suggested PAD Layout



Dimensions in millimeters/inches

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