AUTOMOTIVE SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 40 Volts
Forward Current - 1.0Amperes

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℃/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU
- AEC-Q101 qualified and PPAP capable

IATF16949认证

AEC-Q101 Qualified

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)
- Meets MSL 1 Requirements
- ESD Rating:MM:Class M4 ;HBM:Class 3B

Primary Characteristics	
$I_{F(AV)}$	1.0A
V_{RRM}	40V
I_{FSM}	30A
V_F at I_F=1.0A(125℃)	0.41V
$I_{R(Max)}$	200μA
$T_{J(Max)}$	150℃
Package	SOD-123FL

Typical Applications

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

Maximum Ratings

(Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	40	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	30	A
Operating junction temperature range	T_J	-55 to+150	℃
Storage temperature range	T_{stg}	-55 to+150	℃

RATINGS AND CHARACTERISTIC OF K14-V

ELECTRICAL CHARACTERISTCS（T_A=25℃ Unless otherwise noted）

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instaneous Forward Voltage	T_A=25℃	I_F=0.1A	V_F 1)	0.30	-	V
		I_F=0.5A		0.40	-	
		I_F=1.0A		0.47	0.50	
	T_A=125℃	I_F=0.1A		0.21		
		I_F=0.5A		0.32	-	
		I_F=1.0A		0.41	-	
Reverse Current	T_A=25℃	V_R=15V	I_R 2)	-	20	μA
		V_R=40V		-	100	
	T_A=125℃	V_R=40V		-	20	mA
Typical Junction Capacitance	4V , 1MHz		C_J	50		pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width≤40ms

Thermal Characteristcs

Parameter		Symbol	K14-V	Unit
Typical thermal resistance 3)	Junction to Ambient	$R_{\theta JA}$	206	℃/W
	Junction to Lead	$R_{\theta JL}$	118	

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: $dP_D/dT_J < 1/R_{\theta JA}$

Availabale 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)
K14-V-SOD-123FL	T/R	Φ330	7500	330×35×333	2	364×364×360	8

RATINGS AND CHARACTERISTIC OF K14-V

Fig.1-Forward Current Derating Curve

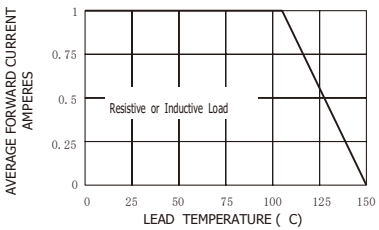


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

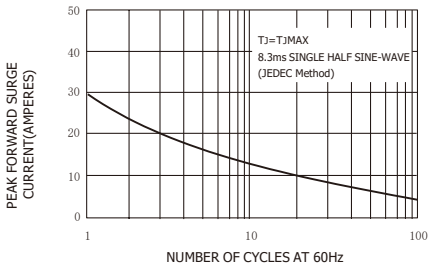


Fig.3-Typical Instantaneous Forward Characteristics

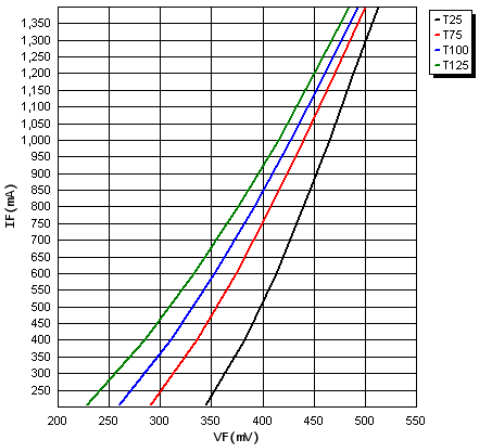


Fig.4-Typical Reverse Characteristics

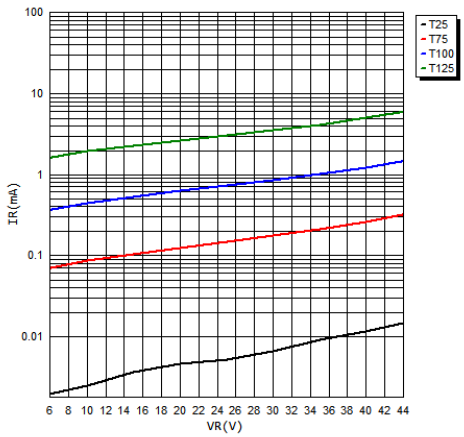
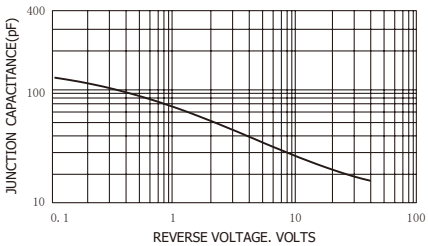
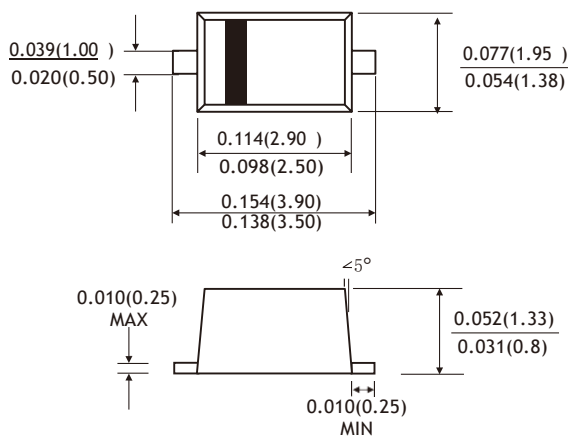


Fig.5-Typical Junction Capacitance

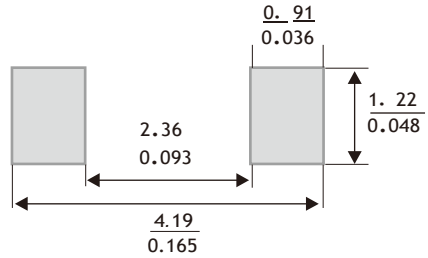


PACKAGE OUTLINE DIMENSIONS

SOD-123FL



Suggested PAD Layout



Dimensions in millimeters/inches