SEMICONDUCTOR

R1M-V

Automotive Glass Passivated Fast Rectifier

Reverse Voltage -1000 Volts
Forward Current - 1.0Amperes
Reverse Recovery Time - 500ns

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated pellet chip junction
- Fast switching for high efficiency
- Low VF ,Low power loss
- High current capability
- 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)

SOD-123FL

Typical Applications

For use in 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}	1000	V
Maximum average forward rectified current (see fig.1)	$I_{F(AV)}$	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	℃

Electrical Characteristcs (T_A=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max .	Unit
Breakdown voltage Blocking voltage	IR=100μA		V_{BR} V_R	1000	-	-	V
Instaneous forward voltage	TJ=25℃	IF=1.0A	V_F 1)	-	1.20	1.30	V
	TJ=125℃			-	1.00	-	
Reverse current	TJ=25℃	VR=1000V	I_R 2)	-	-	5.0	μA
	TJ=125℃			-	-	50	
Junction capacitance	4V,1MHz		C_J	-	9	-	pF
Reverse Recovery Time	I_F=0.5A,I_{RR}=1.0A,I_{RR}=0.25A		Trr	-	-	500	ns

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

2.Pulse test: pulse width≤40ms

THERMAL CHARACTERISTCS

Parameter	Symbol	SOD123-FL	Unit
Typical thermal resistance	$R_{\theta JA}$ 3) 4)	150	℃/W
	$R_{\theta JM}$	15	

3.The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$

4.Thermal resistance junction-to-ambient to follow JEDEC51-2A, device mounted on FR4 PCB, 2 oz., standard footprint

5.Thermal resistance junction-to-mount to follow JEDEC51-14 transient dual interface test method (TDIM)

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)
R1M-V-SOD-123FL	T/R	Φ330	7500	330×35×333	2	364×364×360	8

Fig.1-Forward Current Derating Curve

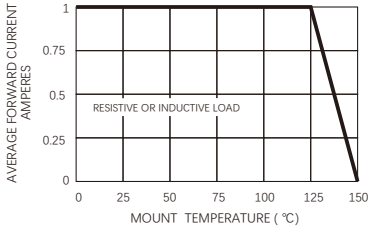


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

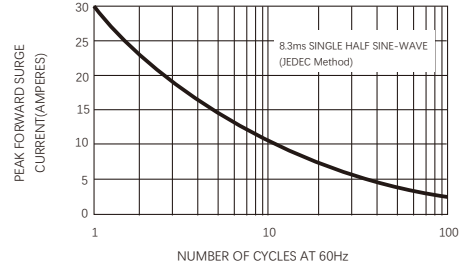


Fig.3-typical Instantaneous Forward Characteristics

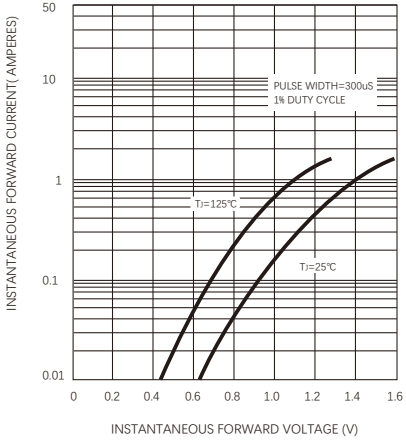


Fig.4-Typical Reverse Characteristics

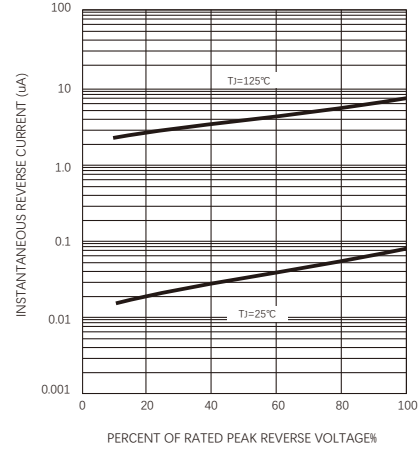
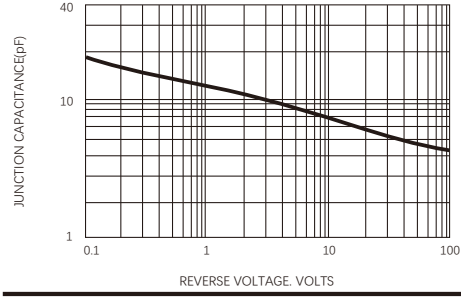
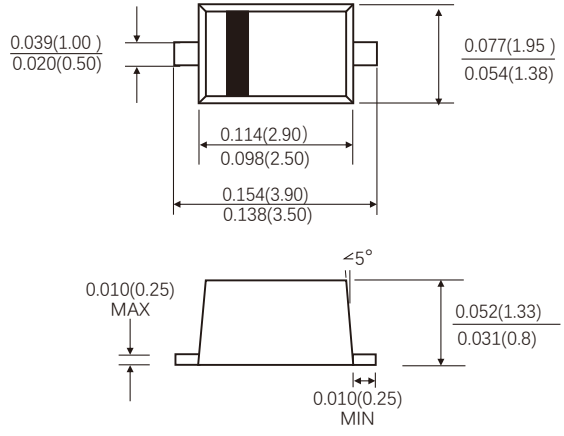


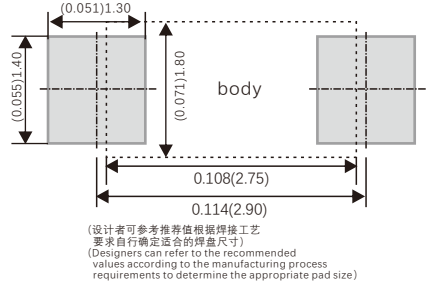
Fig.5-Typical Junction Capacitance



SOD-123FL



Suggested PAD Layout



(设计者可参考推荐值根据焊接工艺
要求自行确定适合的焊盘尺寸)
(Designers can refer to the recommended
values according to the manufacturing process
requirements to determine the appropriate pad size)

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