

0.5A, 20V Surface Mount Schottky Barrier Diode

Features

- AEC-Q101 Qualified
- Very low forward voltage
- Halogen and Antimony Free (HAF), RoHS compliant



Mechanical Data

- Simplified outline SOD-123
- Color band denotes cathode end
- Mounting position: Any



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Repetitive Reverse Voltage	V_R	20	V
Peak Reverse Voltage	V_{RM}	20	V
Average Rectified Forward Current	$I_{F(AV)}$	500	mA
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	5.5	A
Operating Junction Temperature Range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Thermal Characteristics

Parameter	Symbol	Value	Unit
Typical Thermal Resistance Junction-to-Ambient (<i>Note 1</i>)	$R_{\theta JA}$	340	$^{\circ}\text{C/W}$

Note 1: Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\ \mu\text{A}$	20	-	-	V
Forward Voltage	V_F	$I_F = 0.1\ \text{A}$	-	-	0.3	V
		$I_F = 0.5\ \text{A}$		-	0.385	
		$I_F = 0.1\ \text{A}, T_J = 100^\circ\text{C}$		0.22	-	
		$I_F = 0.5\ \text{A}, T_J = 100^\circ\text{C}$		0.33	-	
Reverse Current	I_R	$V_R = 10\text{V}$	-	-	75	μA
		$V_R = 20\text{V}$		-	250	
		$V_R = 10\text{V}, T_J = 150^\circ\text{C}$		5	-	mA
		$V_R = 20\text{V}, T_J = 150^\circ\text{C}$		8	-	

Typical Characteristics Curves ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Fig 1. Average Current Derating Curve

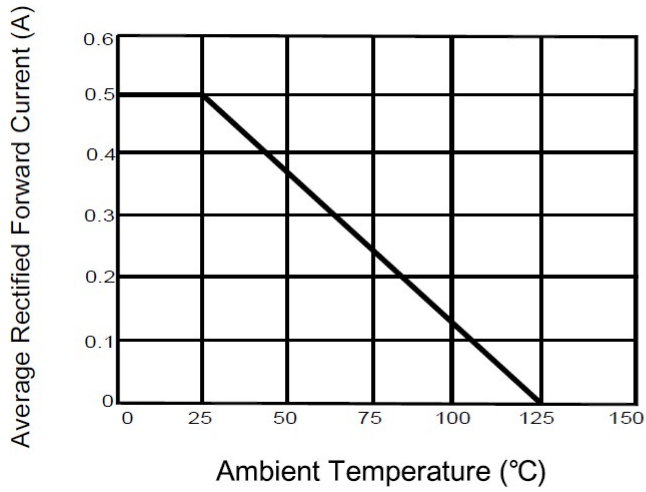


Fig 2. Forward Characteristic Curve

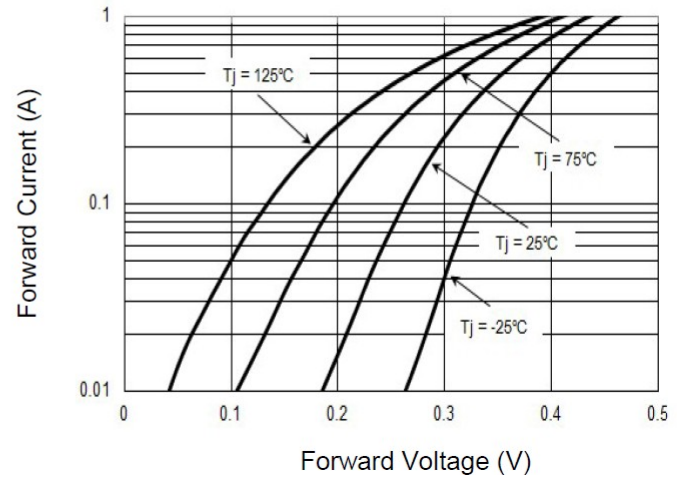


Fig 3. Reverse Characteristic Curve

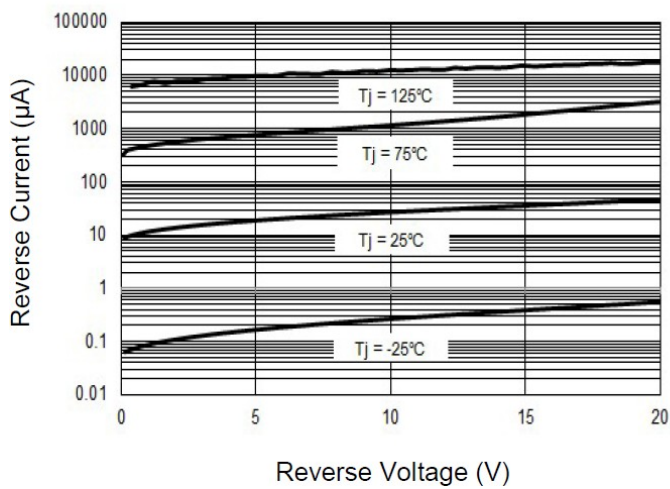
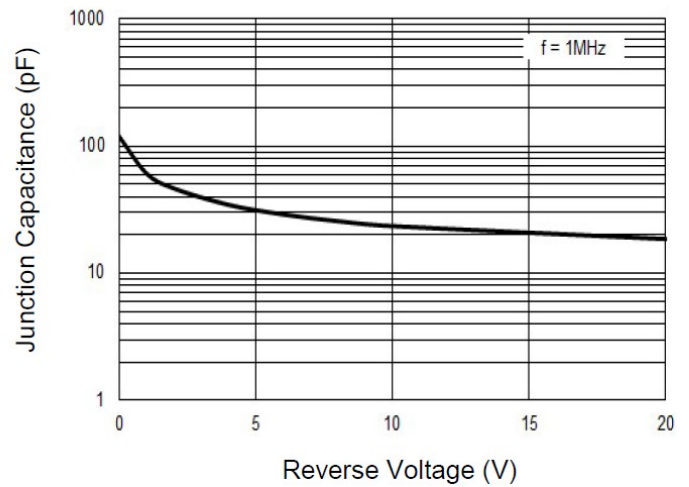
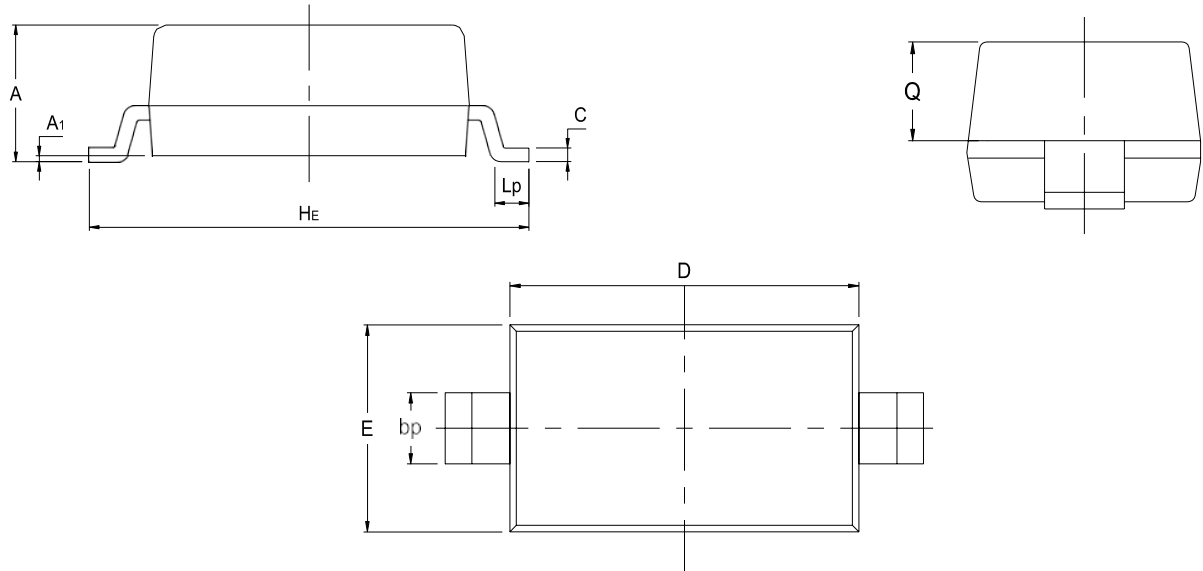


Fig 4. Junction Capacitance



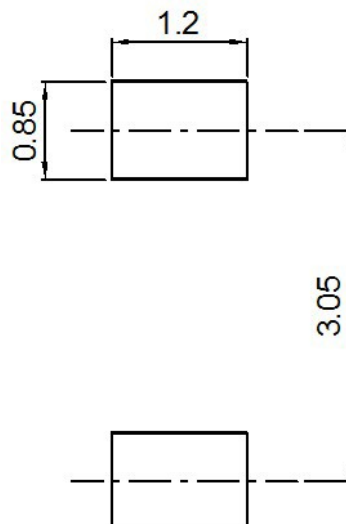
Package Outline Dimensions (Unit: millimeters)

SOD-123(Bend Lead)



UNIT	A	A ₁	b _p	C	D	E	H _E	L _p	Q
mm	1.21	0.1	0.7	0.14	2.7	1.7	3.8	0.4	0.65
	0.91	0	0.5	0.08	2.54	1.5	3.5	0.2	0.55

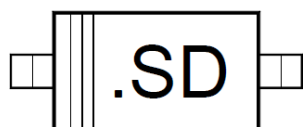
Recommended Soldering Footprint (Unit: millimeters)



Packing Information

Package	Tape Width	Pitch		Reel Size		Per Reel Packing Quantity
SOD-123BL	mm	mm	inch	mm	inch	
	8	4±0.1	0.157±0.004	178	7	3000

Marking Information



1. " SD " = Part No
2. " • " = HAF (Halogen and Antimony Free)
3. " III " = Cathode line

Font type: Arial

Revision History

Version	Date	Description of changes
Rev.A	2025.10.16	Primary

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