

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	N0929- SOD123AV21WST3
DATE	Sept. 29, 2021
REVISION	A0
DESCRIPTION	SMD Small Signal Fast Switching diodes, SOD-123 series, 2 pads Reverse Voltage 250V Max. Forward Current 250mA Max. Operating Temp. Range -55°C ~+150°C, Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	MDD BAV21W
PART CODE	SOD123AV21WST3

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: Sept. 29, 2021			

CUSTOMER APPROVE
DATE:

SMD FAST SWITCHING DIODES SOD123 SERIES

MAIN FEATURE

- Fast switching speed
- Glass Passivated Chip Junction
- Fast reverse recovery time
- High conductance



APPLICATION

- For general purpose switching applications

RFQ

[Request For Quotation](#)

PART CODE GUIDE

SOD123	AV21W	S	T3
1	2	3	4

- 1) **SOD123**: SMD Small Signal Fast Switching diodes, 2 pads, SOD-123 series
- 2) **AV21W**: Type code for original part number BAV21W
- 3) **S**: Package code, Tape/reel, 3000pcs/reel.
- 4) **T3**: Marking code for "T3" on the case surface, Different Marking for different specification.

MORE ITEMS AVAILABLE

SOD123AV19WSA8	SOD123AV20WST2	SOD123AV21WST3		

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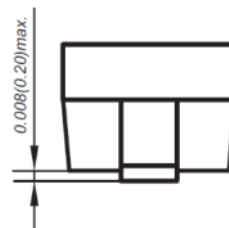
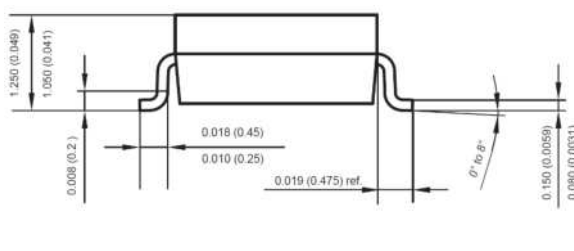
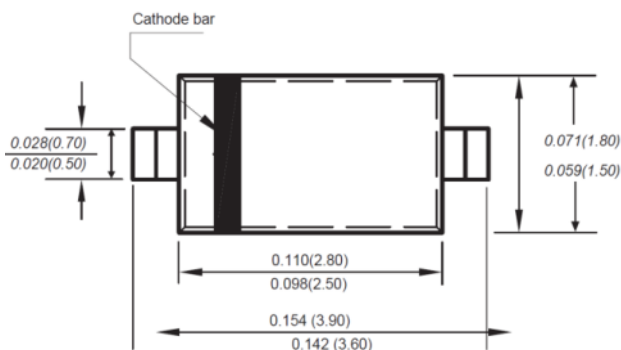
DIMENSION (Unit: Inch/mm)

Image for reference

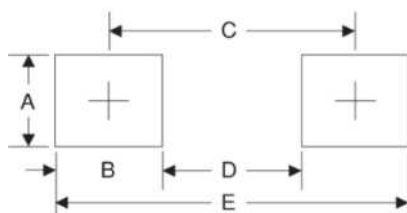


Marking: T3

SOD-123



Recommend Pad Layout



Symbol	Unit (inch)	Unit (mm)
A	0.047	1.20
B	0.047	1.20
C	0.126	3.20
D	0.079	2.00
E	0.173	4.40

SMD FAST SWITCHING DIODES SOD123 SERIES

MECHANICAL DATA

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC SOD-123 molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	0.0007 Ounce, 0.0021 grams

ABSOLUTE MAX. RATING AT 25 °C

Parameter		SYMBOLS	VALUE			UNITS
			Min.	Typical	Max.	
Repetitive peak reverse voltage Working peak reverse Voltage DC Blocking Voltage Non-Repetitive Peak Reverse Voltage		V_{RRM} V_{RWM} V_R V_{RM}			250	Volts
RMS Reverse Voltage		$V_{R(RMS)}$			141	Volts
Forward Continuous Current		I_{FM}			250	mA
Average Rectified Output Current		I_O			200	mA
Peak forward surge current	@ = 1s	I_{FSM}			1	A
	@ = 1 ms				3	
	@ = 1 μ s				9	
Repetitive Peak Forward Current		I_{FRM}			625	mA
Power Dissipation		P_d			500	mW
Thermal Resistance Junction to Ambient		$R_{\theta JA}$			500	
Operating Junction temperature range		T_J	-55		+150	°C
Storage temperature range		T_{STG}	-55		+150	°C

CHARACTERISTICS AT Ta= 25 °C

Parameter	SYMBOLS	VALUE			UNIT	Condition
		Min.	Typ.	Max.		
Reverse Current	I_R			0.1	μ A	at $V_R = 250$ V
Forward Voltage	V_F			1	V	$I_F = 100$ mA
				1.25		$I = 200$ mA
Capacitance between terminals	C_{tot}			5	pF	$V_R = 4$ V, $f = 1.0$ MHz
Reverse recovery time	t_{rr}			50	ns	$I_F = I_R = 10$ mA $I_{rr} = 0.1 I_{I_R}$, $R_L = 100 \Omega$

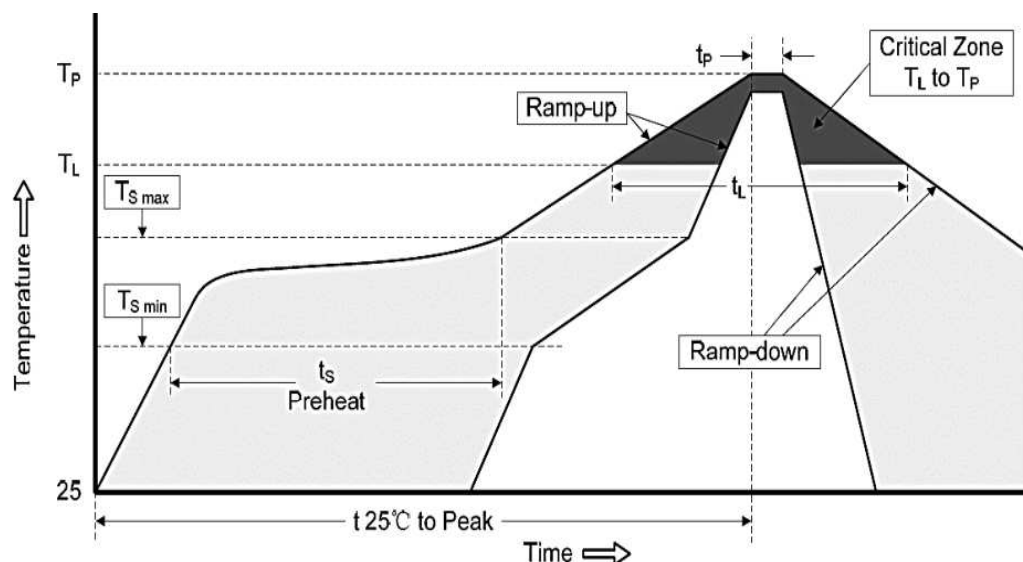
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RELIABILITY

Number	Experiment Items	Experiment Method And Conditions	Reference Documents
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	TA=100°C for 1000 Hours at VR=80% Rated VR	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, TA=121°C, 4 hours	MIL-S-19500 APPENIOXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	TA=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

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SUGGESTED REFLOW PROFILE (For Reference Only)



Profile Feature		Pb-Free Assembly
Average Ramp-up Rate (T_S Max to T_P)		3°C/second Max
Preheat	Temperature Min (T_S Min.)	150°C
	Temperature Max (T_S Max.)	200°C
	Time (t_s Min. to t_s Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_l)	60 ~ 150 seconds
Peak/Classification Temperature (T_P)		260 °C
Time within 5°C of actual Peak Temperature (t_p)		20 ~ 40 seconds
Ramp-down rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 minutes Max.
Suggest reflow times		3 Times Max.

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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.1 Power Derating Curve

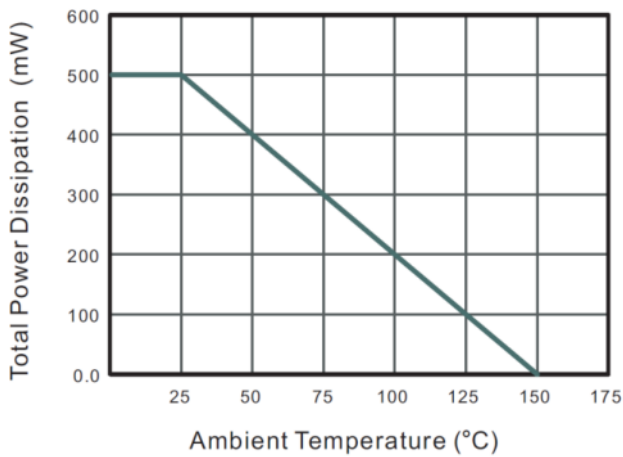


Fig.2 Typical Reverse Characteristics

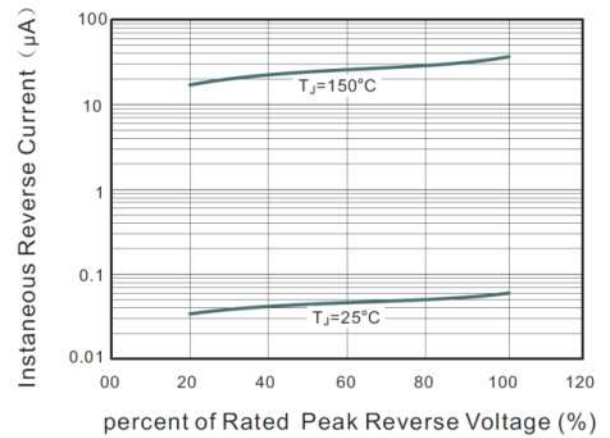


Fig.3 Typical Instantaneous Forward Characteristics

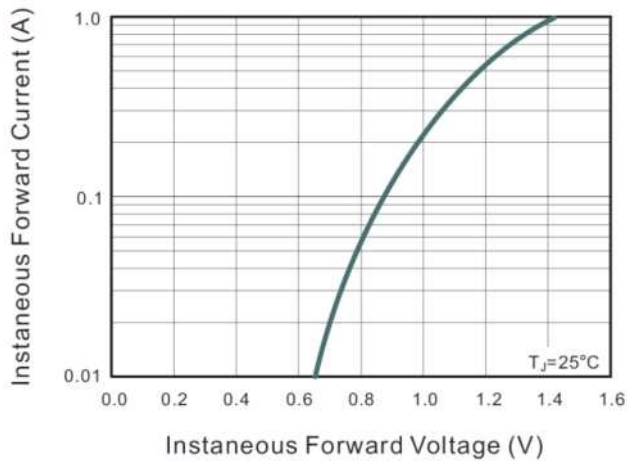
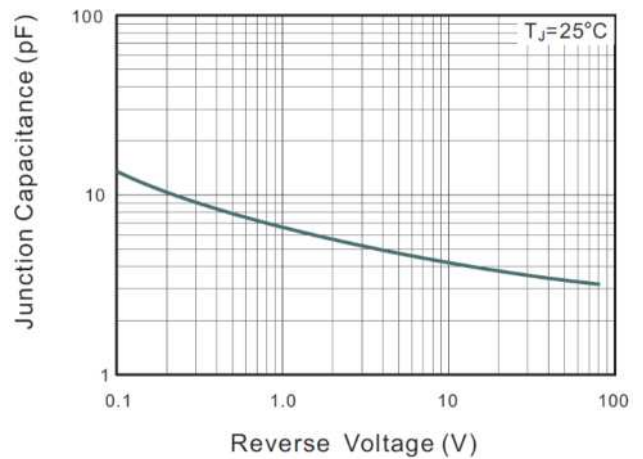


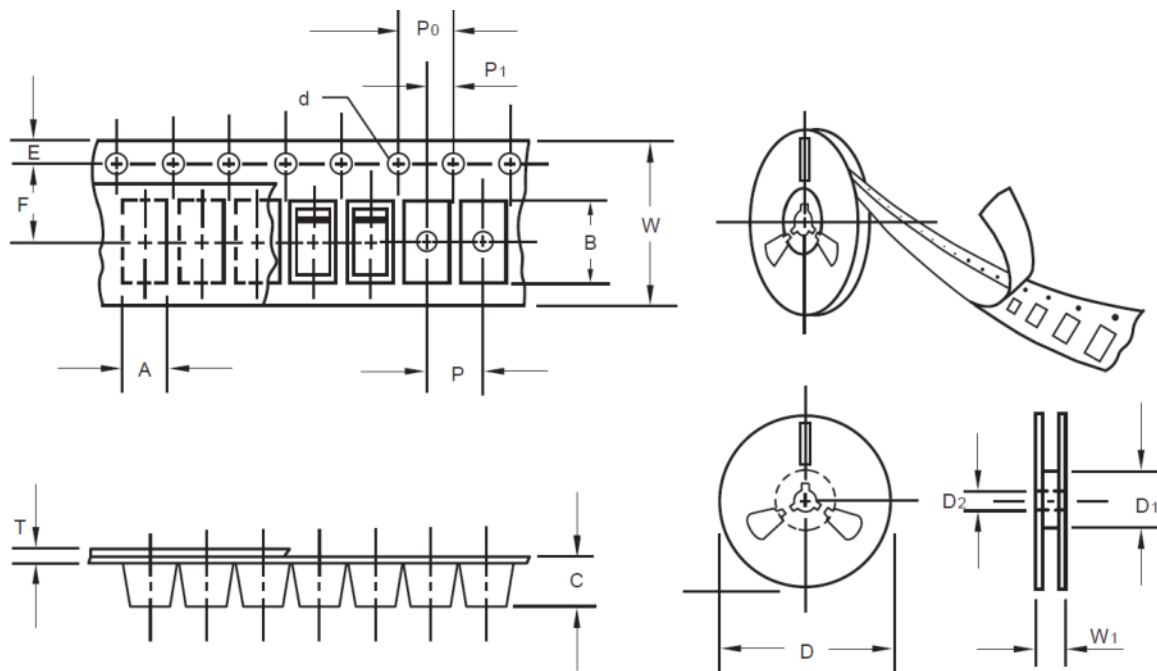
Fig.4 Typical Junction Capacitance



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TAPE/REEL (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



Item	Symbol	Tolerance	SO-123
Carrier width	A	0.1	2.10
Carrier Length	B	0.1	4.00
Carrier Depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
13"Reel outside diameter	-	-	-
13"Reel inner diameter	-	-	-
7"Reel outside diameter	D	2.0	178.00
7"Reel inner diameter	D1	Min.	50.00
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	0.25
Tape width	W	0.3	8.15
Reel width	W1	1.0	10.50

SMD FAST SWITCHING DIODES SOD123 SERIES
SPQ PACKAGE for Reference

Item	Unit	Value
Case Code		SOD-123
Reel Size	Inch	7
Reel Size	mm	178
Tape Space	mm	/
SPQ /Reel	pcs	3000
Weigh /SPQ	LBs	0.22
Weigh /SPQ	KGs	0.1
Qty. Per Box	pcs	6,000
Inner Box	Inch	L8.0*W8.0*H1.5

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