




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	N0310- SOT23BAV99S0A7
DATE	Mar. 10, 2021
REVISION	A0
DESCRIPTION	<p>SMD Plastic-Encapsulate Diodes, Switching Diodes, SOT-23 series, BAV99 Type, 3 pads</p> <p>Reverse Voltage 70V Max. Forward Current 215mA Max.</p> <p>Operating Temp. Range -55°C ~+150°C,</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>RoHS/RoHS III compliant</p>
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	MDD BAV99
PART CODE	SOT23BAV99S0A7

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: March 10, 2021			

CUSTOMER APPROVE	
DATE:	

SMD FAST SWITCHING DIODES SOT23 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

SOT23	BAV99	S	0A7
1	2	3	4

- 1) **SOT23**: SMD Plastic-Encapsulate Diodes, Switching Diodes 3 pads SOT-23 series
- 2) **BAV99**: Type code for original part number BAV99
- 3) **S**: Package code, Tape/reel, 3000pcs/reel.
- 4) **0A7**: Marking code for "A7" on the case surface, Different Marking for different specification.

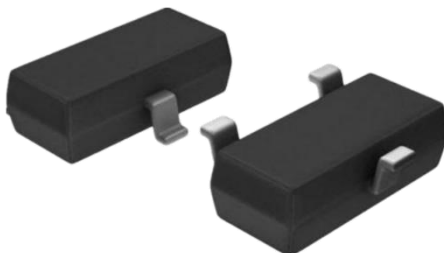
MORE ITEMS AVAILABLE

SOT23BAW56S0A1	SOT23BAV99S0A7	SOT23BAV70S0A4		

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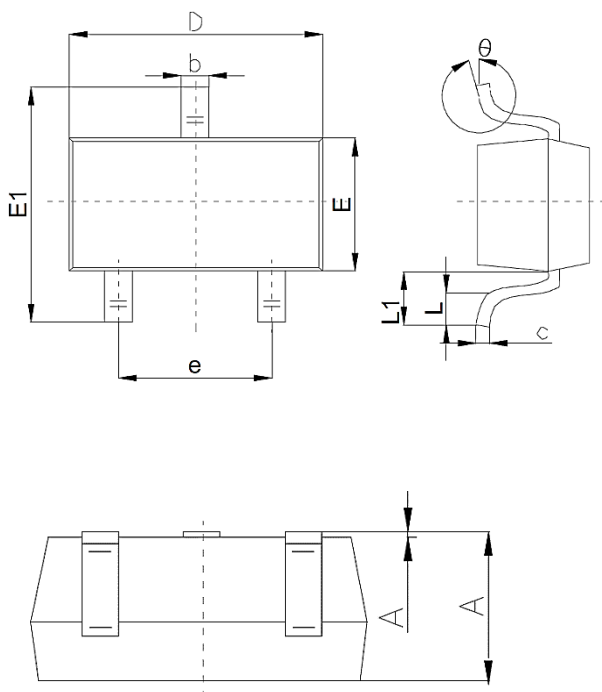
DIMENSION (Unit: Inch/mm)

Image for reference



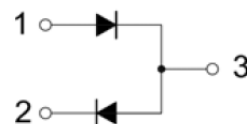
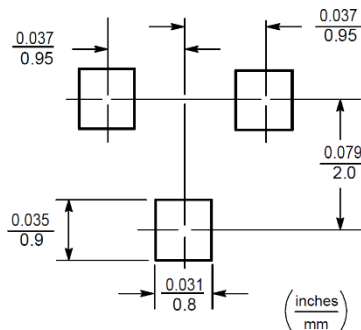
Marking: A7

SOT-23



Symbol	Value (mm)		
	Min.	Typ.	Max.
A	1.0		1.4
A1			0.10
b	0.35		0.50
c	0.10		0.20
D	2.70	2.90	3.10
E	1.40		1.60
E1	2.40		2.80
e		1.9	
L	0.10		0.30
L1	0.40		
θ	0°		10°

Recommend Pad Layout



SMD FAST SWITCHING DIODES SOT23 SERIES
MECHANICAL DATA

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC SOT-23 molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	0.00019 Ounce, 0.00591 grams

MAX. RATINGS AT Ta=25 °C

Parameter	SYMBOLS	VALUE	UNITS
		LIMIT	
Repetitive peak reverse voltage	V _R	70	Volts
Forward Current	I _F	215	mA
Non-Repetitive Peak Forward Surge Current @t=8.3ms	I _{FSM}	2.0	A
Power Dissipation	P _D	250	mW
Thermal Resistance Junction to Ambient	R _{QA}	556	°C/W
Junction temperature	T _J	+150	°C
Storage temperature range	T _{STG}	-55 ~ +155	°C

Characteristics at Ta= 25 °C

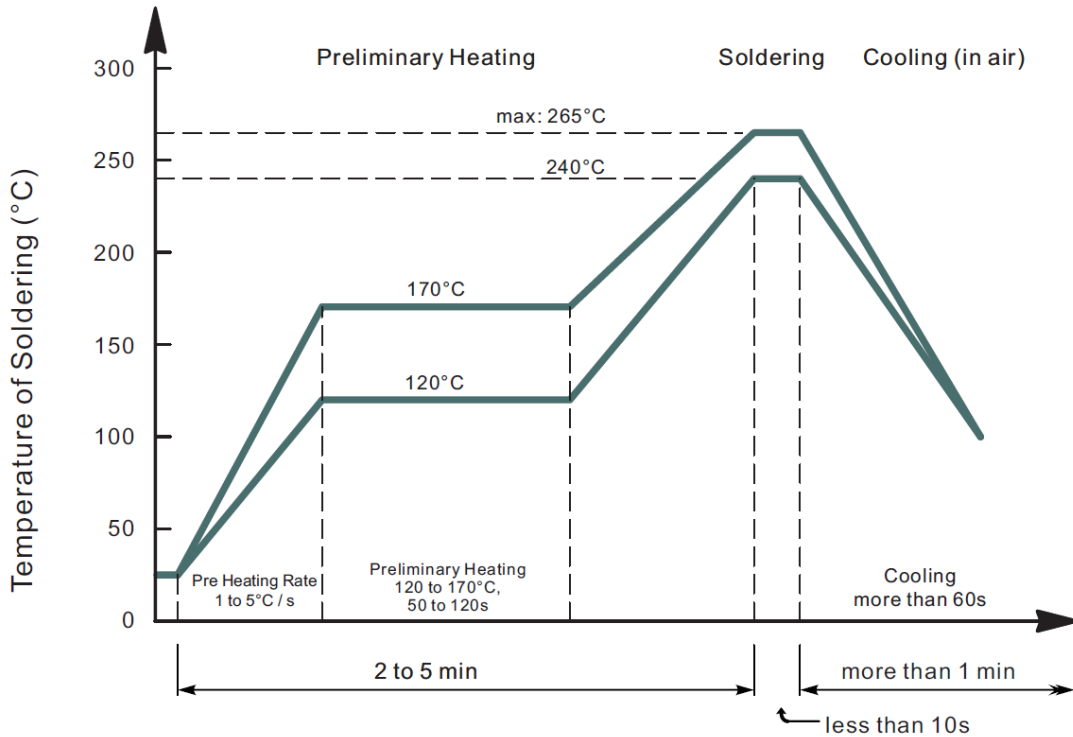
Parameter	SYMBOLS	VALUE			UNIT	Condition
		Min.	Typ.	Max.		
Reverse breakdown voltage	V _R	70			V	I _R =100 μA
Forward Voltage	V _{F1}			0.715	V	I _F =1 mA
	V _{F2}			0.855	V	I _F = 10 mA
	V _{F3}			1	V	I _F = 50 mA
	V _{F4}			1.25	V	I _F = 150mA
Reverse current	I _R			2.5	μA	V _R = 70 V
Capacitance between terminals	C _{tot}			1.5	pF	V _R =0V, f=1.0MHz
Reverse recovery time	t _{rr}			6	ns	I _F =I _R =10mA I _{rr} =0.1 * I _R , R _L =100Ω

SMD FAST SWITCHING DIODES SOT23 SERIES
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 APPENOIXC
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)

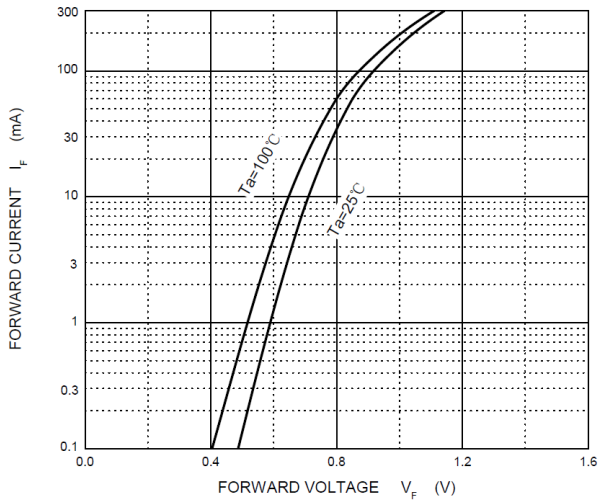


- Recommended peak temperature is over 245°C, If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)
- Welding shall not exceed 2 times
- Remark: lead free solder paste (96.5 sn/3.0 Ag/0.5Cu)

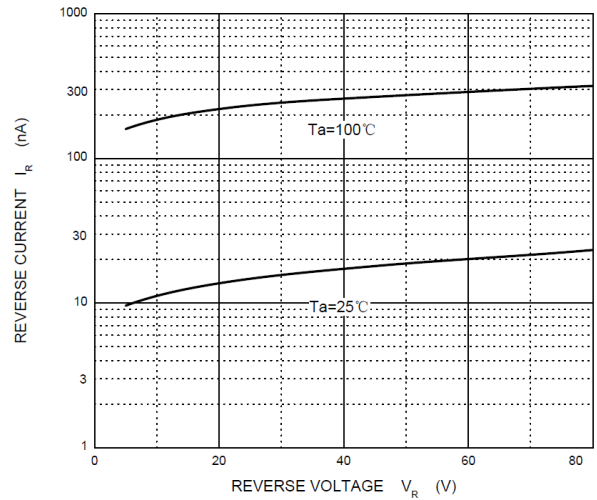
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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

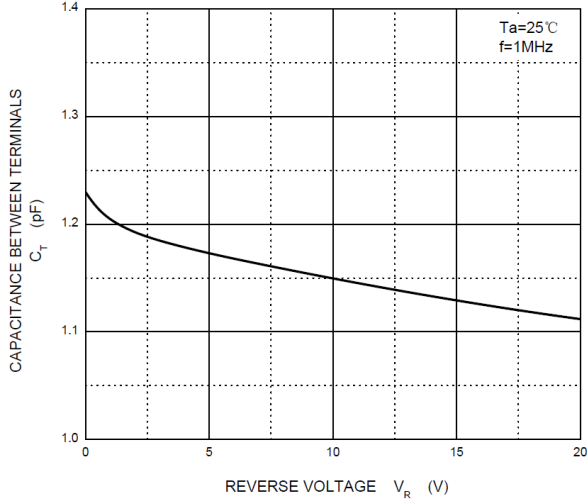
Forward Characteristics



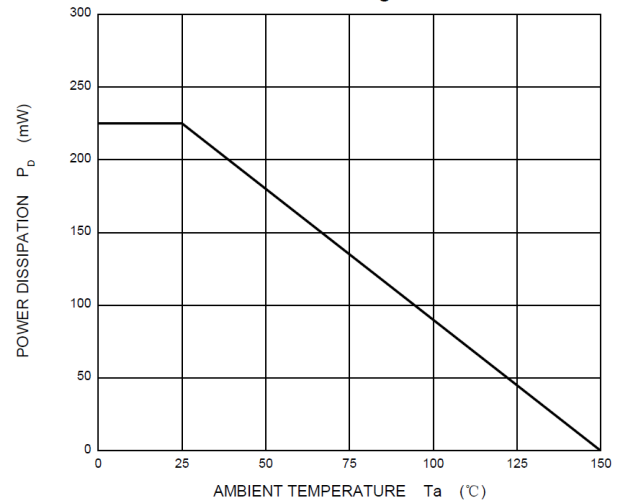
Reverse Characteristics



Capacitance Characteristics



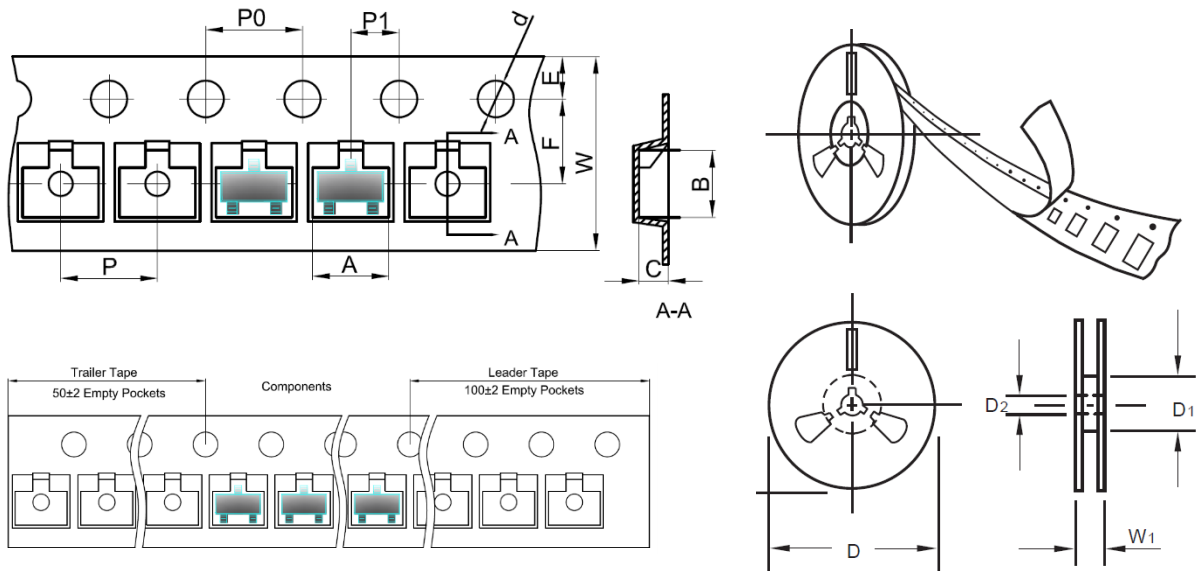
Power Derating Curve



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TAPE/REEL (Unit: mm)

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

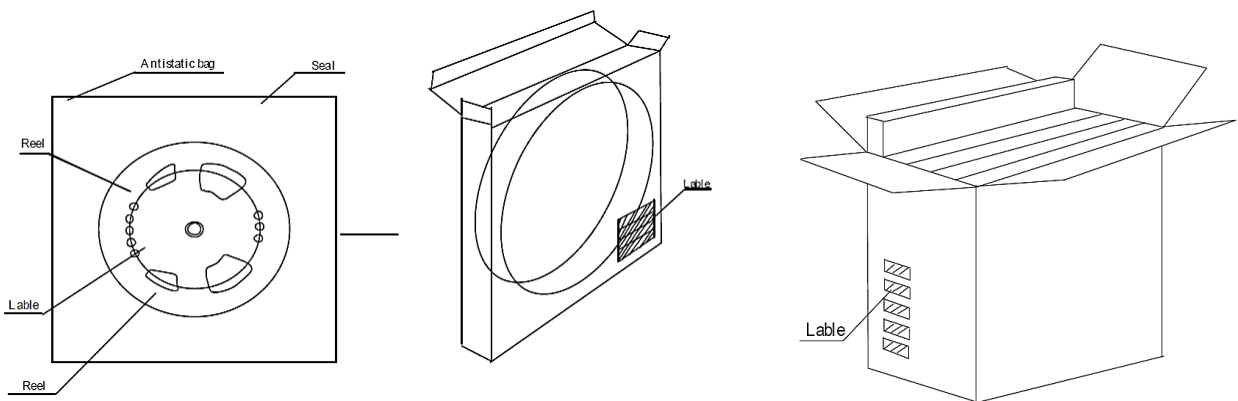


Item	Symbol	Tolerance	SOT-23
Carrier width	A	0.1	3.15
Carrier Length	B	0.1	2.77
Carrier Depth	C	0.1	1.22
Sprocket hole	d	0.05	1.55
13" Reel outside diameter	-	-	-
13" Reel inner diameter	-	-	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	Min.	54.4
Feed hole diameter	D2	0.5	13.00
Sprocket 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	8.00
Reel width	W1	1.0	19.50

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PACKAGE

Case Code	Reel Size	MPQ (pcs)	Component Spacing (mm)	Qty. Per Box (pcs)	Inner Box L*W*H (mm)	Reel Size (mm)	Carton size L*W*H (mm)	Qty. Per Carton (pcs)	G. W (kg)
SOT-23	7"	3,000		45,000	212*207*207	178	430*430*230	180,000	6.5



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