

**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	Q1213- BAT54WSL9SD323	
<b>DATE</b>	Dec. 13, 2023	
<b>REVISION</b>	A0	Updated With Most Recent Data - Official First Release
<b>DESCRIPTION AND MAIN PARAMETRICS</b>	SMD Schottky Diodes, SOD-323 series, 2 pads BAT54WS Type, DC Reverse Voltage(Vr) 30V Max. Current Average Rectified (Io) 200 mA Max. Operating Temp. Range -55°C ~+125°C, Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863)	
<b>CUSTOMER</b>		
<b>CUSTOMER PART NO.</b>		
<b>CROSS REF. PART NO.</b>		
<b>ORIGINAL MFG/PART NO.</b>	MDD Diodes/BAT54WS	
<b>PART CODE</b>	BAT54WSL9SD323	

**VENDOR APPROVE**

Issued/Checked/Approved



DATE: Dec. 13, 2023

**CUSTOMER APPROVE**

DATE:

12/13/2023

## SMD SCHOTTKY DIODES SOD-323 SERIES

### MAIN FEATURE

- Low Forward Voltage Drop
- Fast Switching Time
- Surface Mount Package Ideally Suited For Automatic Insertion
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863)



### APPLICATION

- For General Purpose Switching Applications

### ELECTRICAL CHARACTERISTICS

See Page 4~ Page 5

### HOW TO ORDER

Please follow up Part Code Guide and indicate pat code when you order or RFQ.

### PART CODE GUIDE

**RFQ**

[Request For Quotation](#)

BAT54WS	L9	S	D323
1	2	3	4

1. BAT54WS: Product Code For Original Part Number BAT54WS
2. L9: Internal Control Code Or Special Parameters Code, Letter A~Z Or Digits (1-9); Blank: N/A
3. S: Package Code, Tape/Reel, 3000pcs/Reel.
4. D323: Series Code For SMD Schottky Diodes, 2 Pads, Package SOD-323 Series

## SMD SCHOTTKY DIODES SOD-323 SERIES

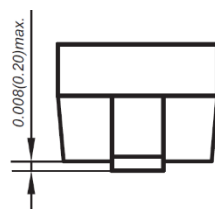
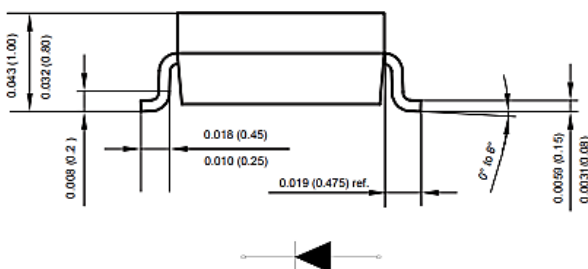
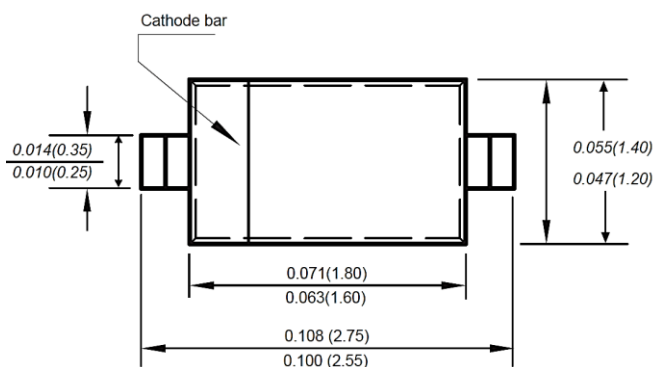
**DIMENSION (Unit: Inch/mm)**

Image for reference

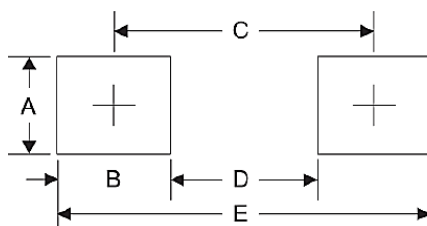


Marking: L9

**SOD-323**



**Recommend  
Pad Layout**



Symbol	Unit (inch)	Unit (mm)
A	0.028	0.70
B	0.028	0.70
C	0.085	2.15
D	0.071	1.80
E	0.112	2.85

## SMD SCHOTTKY DIODES SOD-323 SERIES

### MECHANICAL DATA

CASE	TERMINALS	POLARITY	MOUNTING POSITION	WEIGHT PER PIECE
JEDEC SOD-323 Molded Plastic Body	Solder Plated, Solderable Per MIL-STD-750, Method 2026	Polarity Symbol Marking On Case	Any	0.0007 Ounce, 0.021 grams

### ABSOLUTE MAX. RATING AT 25 °C

PARAMETER	SYMBOLS	VALUE	UNITS
DC Blocking Voltage	V <sub>R</sub>	30	V
Average Rectified Output Current	I <sub>O</sub>	200	mA
Forward Continuous Current	I <sub>FM</sub>	200	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	300	mA
Forward Surge Current	I <sub>FSM</sub>	13	A
Power Dissipation	P <sub>d</sub>	200	mW
Thermal Resistance junction To Ambient Air	R <sub>ΘJA</sub>	435	°C/W
Junction Temperature Range	T <sub>J</sub>	-55 ~ +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +125	°C
Non-repetitive Peak Reverse Voltage	V <sub>RM</sub>	30	V

**SMD SCHOTTKY DIODES SOD-323 SERIES**
**CHARACTERISTICS AT TA= 25 °C**

PARAMETER	SYMBOLS	VALUE			UNIT	CONDITION
		MIN.	TYP.	MAX.		
Reverse Breakdown Voltage	V (BR)R	30			V	IR=100uA
Forward Voltage	V F1			320	mV	IF=1.0mA
	V F2			1000	mV	IF=100mA
Reverse Current	I R			2.0	uA	VR=25V
Capacitance Between Terminals	C t			60	pF	VR=0V, f=1.0MHz
Reverse Recovery Time	t rr			5.0	ns	IF=10mA, IR=10mA to 1mA RL=100Ω

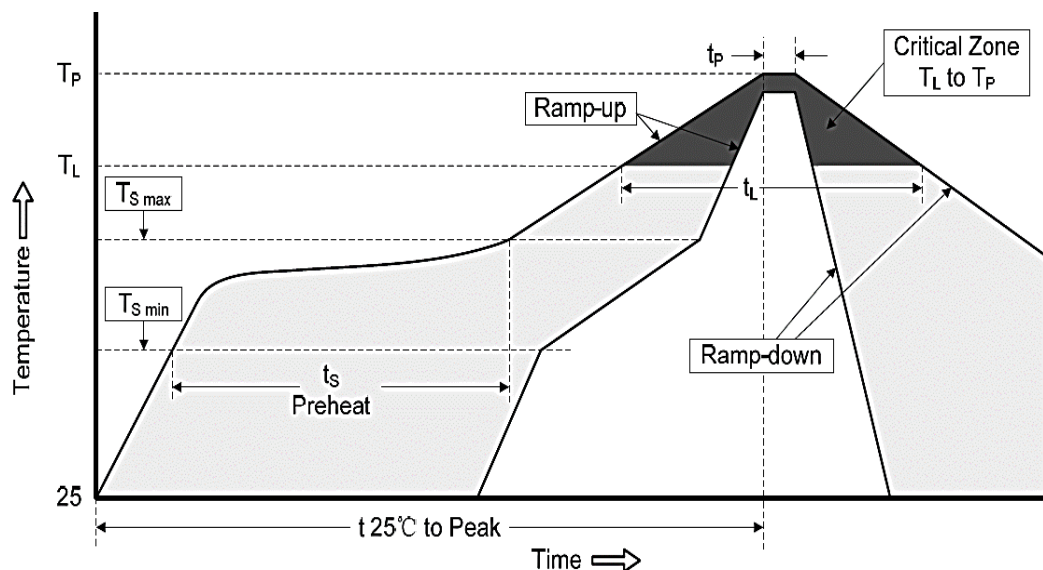
## SMD SCHOTTKY DIODES SOD-323 SERIES

### 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 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

## SMD SCHOTTKY DIODES SOD-323 SERIES

### SUGGESTED REFLOW PROFILE (For Reference Only)

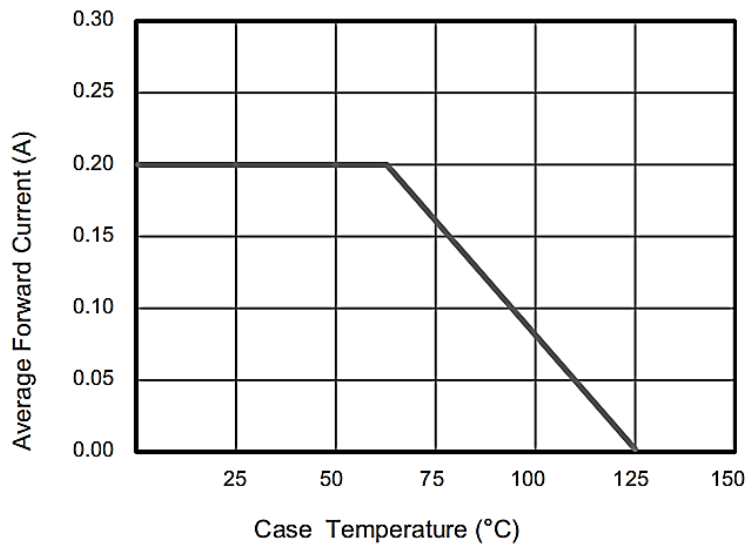


PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	150°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (TL)	217°C
	Time (tL)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		260 °C
Time within 5°C of actual Peak Temperature (tp)		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.

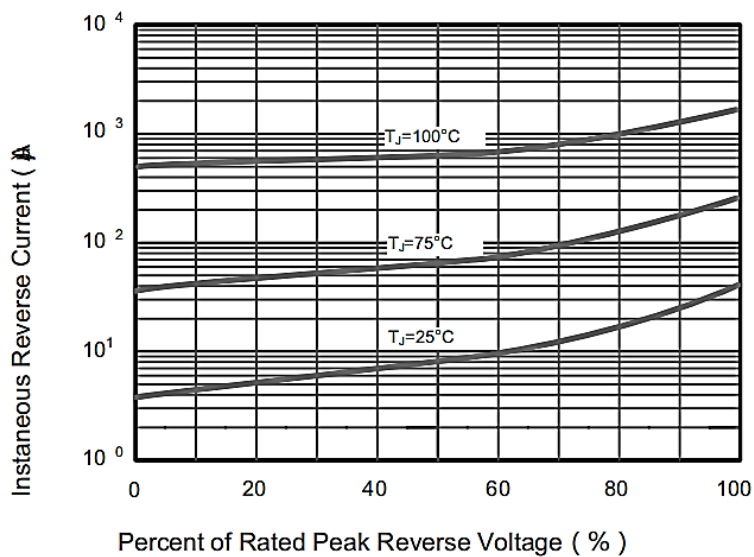
## SMD SCHOTTKY DIODES SOD-323 SERIES

### RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

**Fig.1 Forward Current Derating Curve**



**Fig.2 Typical Reverse Characteristics**

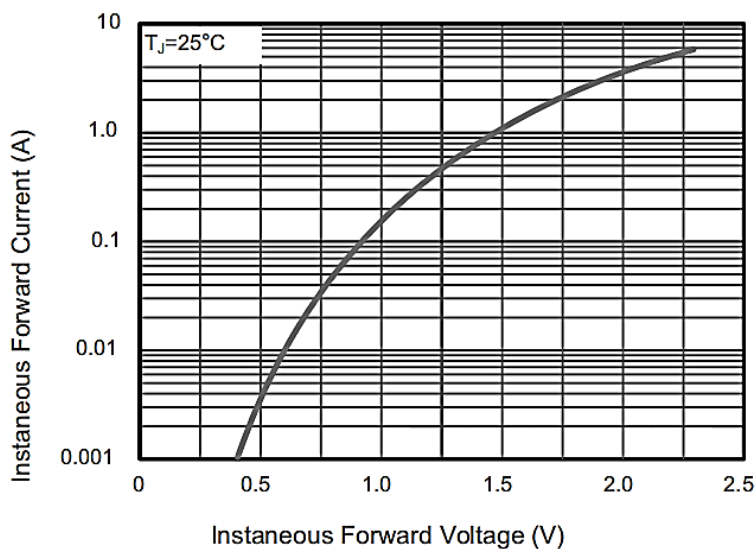




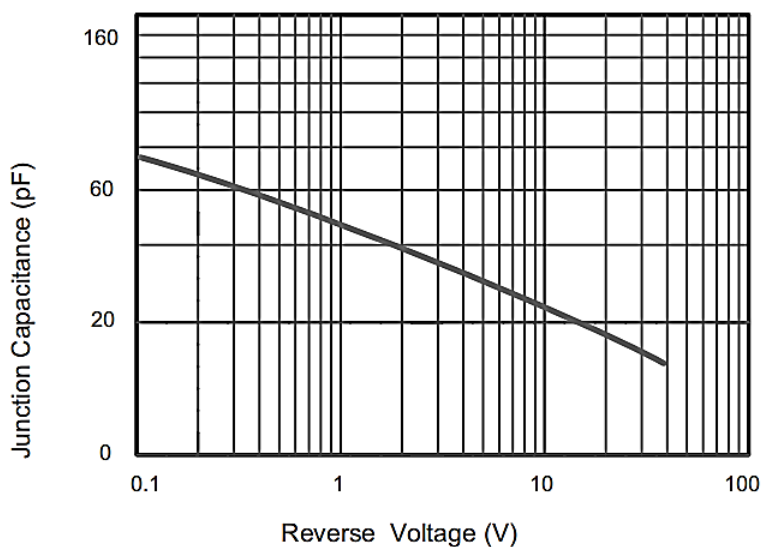
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### RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

**Fig. 3 Typical Forward Characteristics**



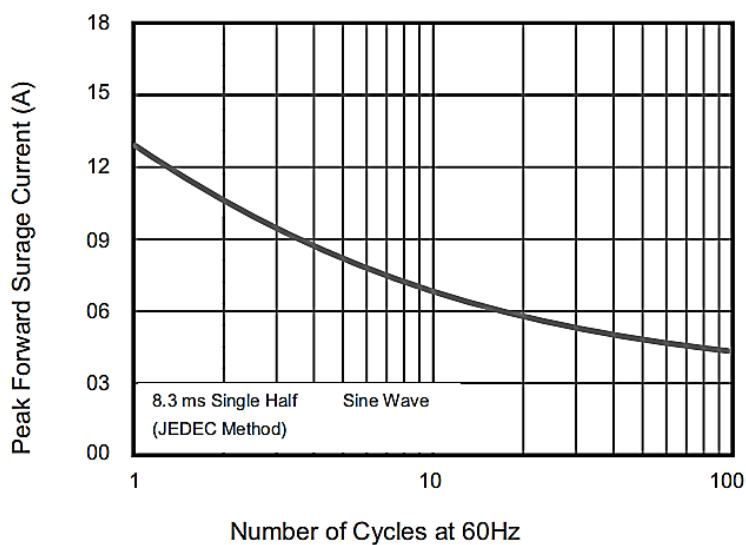
**Fig.4 Typical Junction Capacitance**



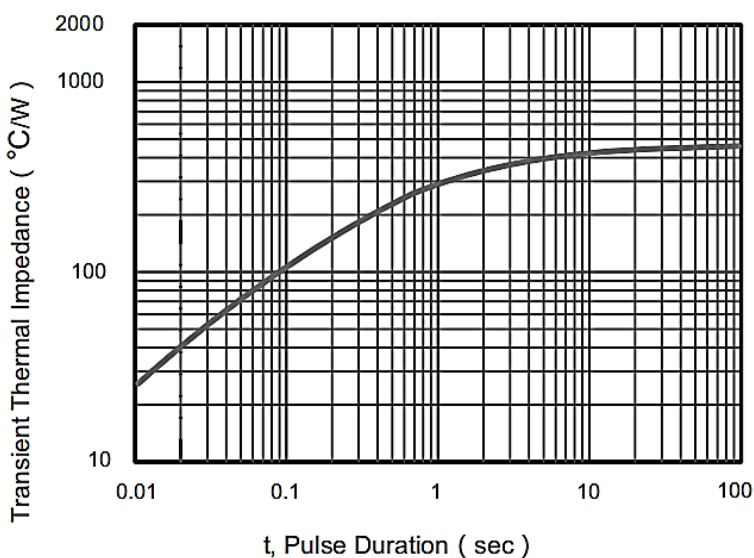
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### RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



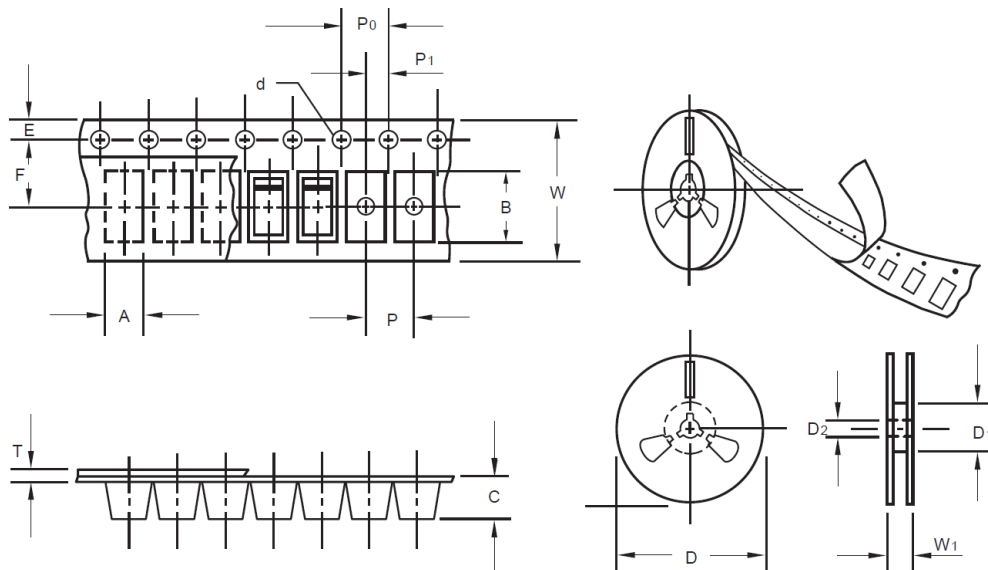
**Fig.6 Typical Transient Thermal Impedance**



## SMD SCHOTTKY DIODES SOD-323 SERIES

### TAPE/REEL (Unit: mm) (For Reference Only)

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



Item	Symbol	Tolerance	SO-323
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	178.0
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
Qty./Reel (pcs)	3000		

**SMD SCHOTTKY DIODES SOD-323 SERIES****IMPORTANT NOTES AND DISCLAIMER**

1. RoHS Compliance: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. REACH Compliance: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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