NextGen Components,Inc.

PART CODE: BZT52C3V9SS0W5

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q1103-BZT52C3V9SS0W5	
DATE	Nov. 03, 2023	
REVISION	A0	Updated With Most Recent Data - Official First Release
DESCRIPTION AND MAIN PARAMETRICS	SMD Zener Diodes, BZT52C series, Case SOD-323 BZT52C3V9S Type, 2 Pads Voltage - Zener (Nom.) (Vz): 3.9V, Peak Pulse Power: 200 mW Operating Temp. Range -55°C ~+150°C Package in Tape/Reel, 3000pcs/Reel RoHS III/REACH Compliant and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	MDD/BZT52C3V9S	
PART CODE	BZT52C3V9SS0W5	

VENDOR APPROVE
Issued/Checked/Approved NextGen Components, Inc. Jack Zhang NextGen Components, Inc. Mandy Xu NextGen Components, Inc. Ruby Zhang
DATE: Nov. 03, 2023

CUSTOMER APPROVE
DATE:

NextGen Components, Inc. sales@NextGenComponent.com www.NextGenComponent.com

NextGen Components,Inc.

PART CODE: **BZT52C3V9SS0W5**

SMD ZENER DIODES BZT52C SERIES CASE SOD-323

MAIN FEATURE

- Small Signal Zener Diodes
- SOD-323 Plastic-Encapsulate Diodes
- Total power dissipation: Max. 300mW.
- Planar die construction
- General purpose and medium current
- Wide Zener reverse voltage range 2.0V to 75V.
- Small plastic package suitable for surface mounted design.
- Tolerance approximately ±5%
- REACH/RoHS III Complaint and Halogen Free
- Cross Main Competitor Parts in Market

APPLICATION

- For SMD application

RFQ
Request For Quotation

PART CODE GUIDE

BZT52C	3V9S	S	0W5
1	2	3	4

1. BZT52C: SMD Zener Diodes, BZT52C series Code
2. 3V9S: Specification code for Voltage - Zener (Nom) (Vz): 3.9V, Package Case SOD-323
3. S: Package code, Tape/Reel
4. 0W5: Marking code for “W5” on the case surface, Different Marking for different specification

ELECTRICAL CHARACTERISTICS

See Page 5 ~ Page 6 For Different Part Code

HOW TO ORDER

Please indicate pat code and send us your RFQ by E-mail, sales@nextgencomponent.com

SMD ZENER DIODES BZT52C SERIES CASE SOD-323

DIMENSION - Unit: Inch/mm

Image for reference



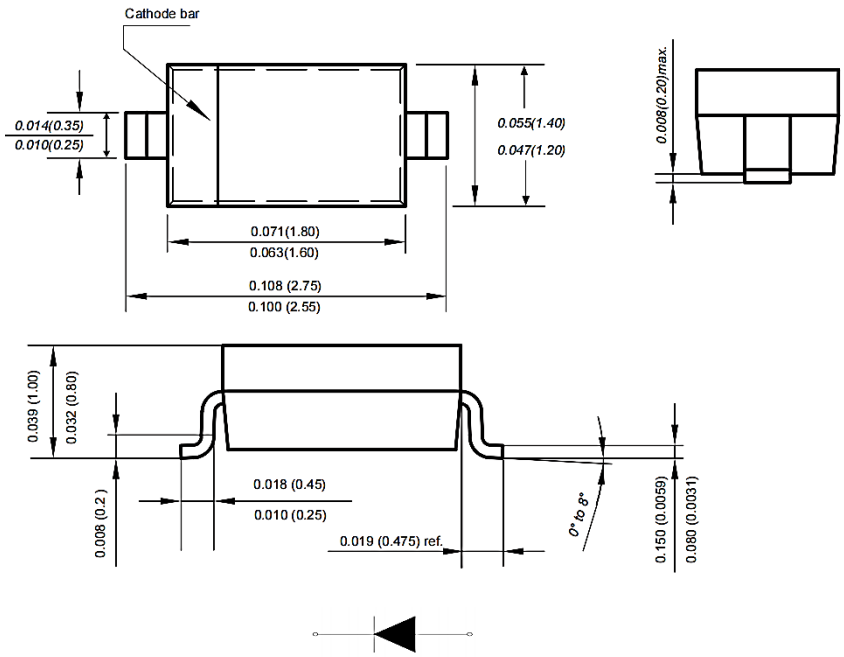
Marking: Standard

* See Marking Code List at Page 5~ Page 6

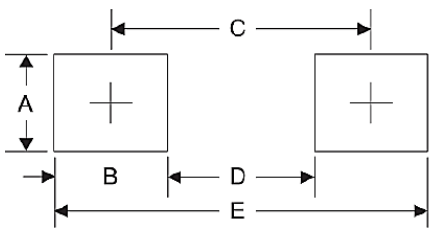


Case Dimension:

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 ZENER DIODES BZT52C SERIES CASE SOD-323

MECHANICAL DATA

Case	Terminals	Polarity	Mounting Position	Marking	Weight per piece
JEDEC SOD-323 molded plastic body	Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on body	ANY	See Marking Code List (Page 5~Page 6)	0.00019 ounce 0.00548 grams

MAX. RATING & CHARACTERISTICS - Ratings at 25℃ Ambient Temperature Unless Otherwise Specified.

Parameter	SYMBOLS	VALUE	UNITS
Forward Voltage @ I_F =10mA (Note 2)	V_F	0.9	V
Peak Pulse Power Dissipation at TA=50°C (Note 1)	P_D	200	mW
Typical Thermal Resistance From Junction To Ambient (Note 1)	$R_{\theta JA}$	417	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

Notes

1. Thermal Resistance From Junction To Ambient at P.C.B. Mounted With 2.0" X 2.0" (5 X 5 cm) Copper Areas Pads.
2. Short Duration Test Pulse Used To Minimize Self-heating Effect.
3. f =1kHz

NextGen Components,Inc.

PART CODE: **BZT52C3V9SS0W5**

SMD ZENER DIODES BZT52C SERIES CASE SOD-323

ELECTRICAL CHARACTERISTICS UNIDIRECTIONAL TYPE - Ta = 25°C

Part Code	Zener Voltage Range (See Note 1) V_{ZT} @ I_{ZT} (V)			Test Current I_{ZT} (mA)	Dynamic Impedance Max. Z_{ZT} @ I_{ZT} (Ω)	Reverse Current		Marking Code
	Min.	Nom	Max.			Max. I_R (µA)	@ V_R (V)	
BZT52C2V0SS0WY	1.8	2	2.15	5	100	120	0.5	WY
BZT52C2V2SS0WZ	2.08	2.2	2.33	5	100	120	0.7	WZ
BZT52C2V4SS0WX	2.28	2.4	2.56	5	100	120	1	WX
BZT52C2V7SS0W1	2.5	2.7	2.9	5	110	120	1	W1
BZT52C3V0SS0W2	2.8	3	3.2	5	120	50	1	W2
BZT52C3V3SS0W3	3.1	3.3	3.5	5	130	20	1	W3
BZT52C3V6SS0W4	3.4	3.6	3.8	5	130	10	1	W4
BZT52C3V9SS0W5	3.7	3.9	4.1	5	130	5	1	W5
BZT52C4V3SS0W6	4	4.3	4.6	5	130	5	1	W6
BZT52C4V7SS0W7	4.4	4.7	5	5	130	2	1	W7
BZT52C5V1SS0W8	4.8	5.1	5.4	5	130	2	1.5	W8
BZT52C5V6SS0W9	5.2	5.6	6	5	80	1	2.5	W9
BZT52C6V2SS0WA	5.8	6.2	6.6	5	50	1	3	WA
BZT52C6V8SS0WB	6.4	6.8	7.2	5	30	0.5	3.5	WB
BZT52C7V5SS0WC	7	7.5	7.9	5	30	0.5	4	WC
BZT52C8V2SS0WD	7.7	8.2	8.7	5	30	0.5	5	WD
BZT52C9V1SS0WE	8.5	9.1	9.6	5	30	0.5	6	WE
BZT52C10SS00WF	9.4	10	10.6	5	30	0.1	7	WF
BZT52C11SS00WG	10.4	11	11.6	5	30	0.1	8	WG
BZT52C12SS00WH	11.4	12	12.7	5	35	0.1	9	WH
BZT52C13SS00WI	12.4	13	14.1	5	35	0.1	10	WI

NextGen Components,Inc.

PART CODE: **BZT52C3V9SS0W5**

SMD ZENER DIODES BZT52C SERIES CASE SOD-323

ELECTRICAL CHARACTERISTICS UNIDIRECTIONAL TYPE - Ta = 25°C

Part Code	Zener Voltage Range (See Note 1) V_{ZT} @ I_{ZT} (V)			Test Current I_{ZT} (mA)	Dynamic Impedance Max. Z_{ZT} @ I_{ZT} (Ω)	Reverse Current		Marking Code
	Min.	Nom	Max.			Max. I_R (µA)	@ V_R (V)	
BZT52C15SS00WJ	13.8	15	15.6	5	40	0.1	11	WJ
BZT52C16SS00WK	15.3	16	17.1	5	40	0.1	12	WK
BZT52C18SS00WL	16.8	18	19.1	5	45	0.1	13	WL
BZT52C20SS00WM	18.8	20	21.2	5	50	0.1	15	WM
BZT52C22SS00WN	20.8	22	23.3	5	55	0.1	17	WN
BZT52C24SS00WO	22.8	24	25.6	5	60	0.1	19	WO
BZT52C27SS00WP	25.1	27	28.9	2	70	0.1	21	WP
BZT52C30SS00WQ	28	30	32	2	80	0.1	23	WQ
BZT52C33SS00WR	31	33	35	2	80	0.1	25	WR
BZT52C36SS00WS	34	36	38	2	90	0.1	27	WS
BZT52C39SS00WT	37	39	41	2	100	0.1	30	WT
BZT52C43SS00WU	40	43	46	2	130	0.1	33	WU
BZT52C47SS00WV	44	47	50	2	150	0.1	36	WV
BZT52C51SS00WW	48	51	54	2	180	0.1	39	WW
BZT52C56SS00XW	52	56	60	2	200	0.1	43	XW
BZT52C62SS006E	58	62	66	2	215	0.1	47	6E
BZT52C68SS006F	64	68	72	2	240	0.1	52	6F
BZT52C75SS006H	70	75	79	2	265	0.1	56	6H

Notes 1: V_{ZT} is tested with pulses (20 ms)

RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25℃ Unless Otherwise Specified

Figure 1. Forward Characteristics Curve

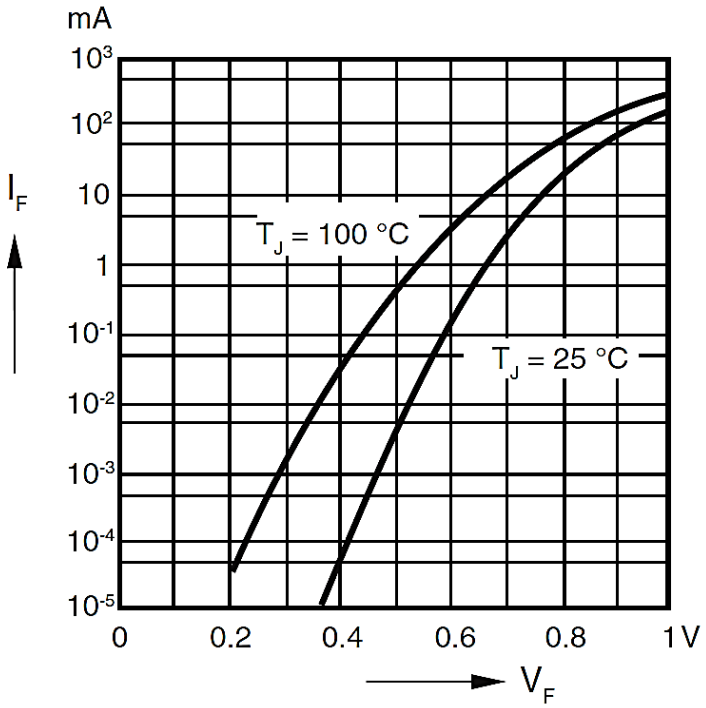
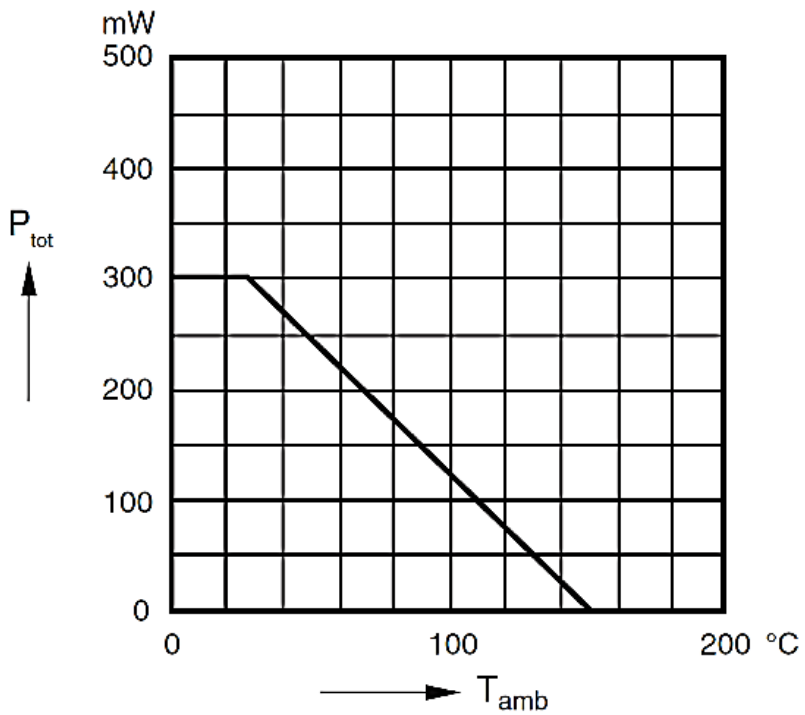


Figure 2. Admissible Power Dissipation vs. Ambient Temperature Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25℃ Unless Otherwise Specified

Figure 3. Dynamic Resistance vs. Zener Current Curve

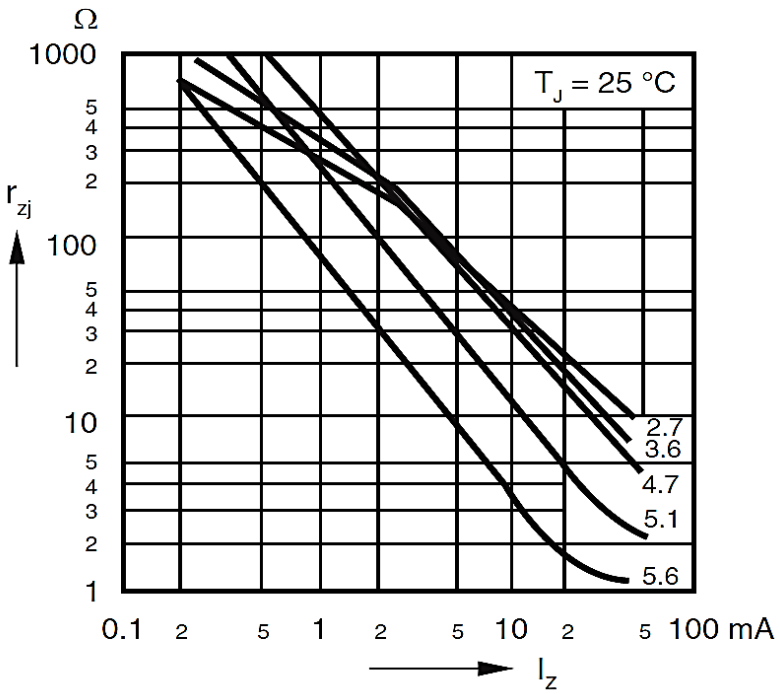
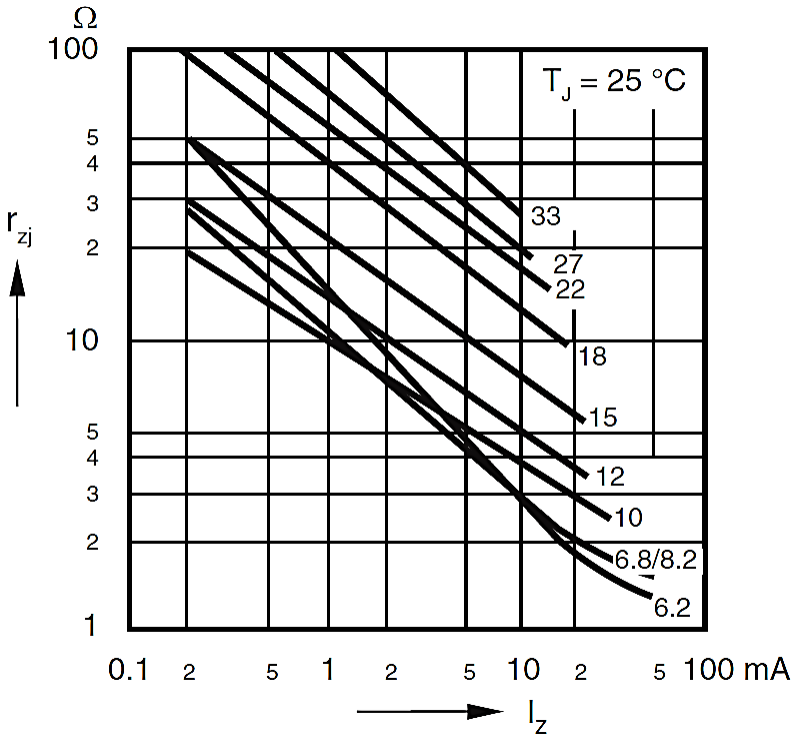


Figure 4. Dynamic Resistance vs. Zener Current Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25°C Unless Otherwise Specified

Figure 5. Dynamic Resistance vs. Zener Current Curve

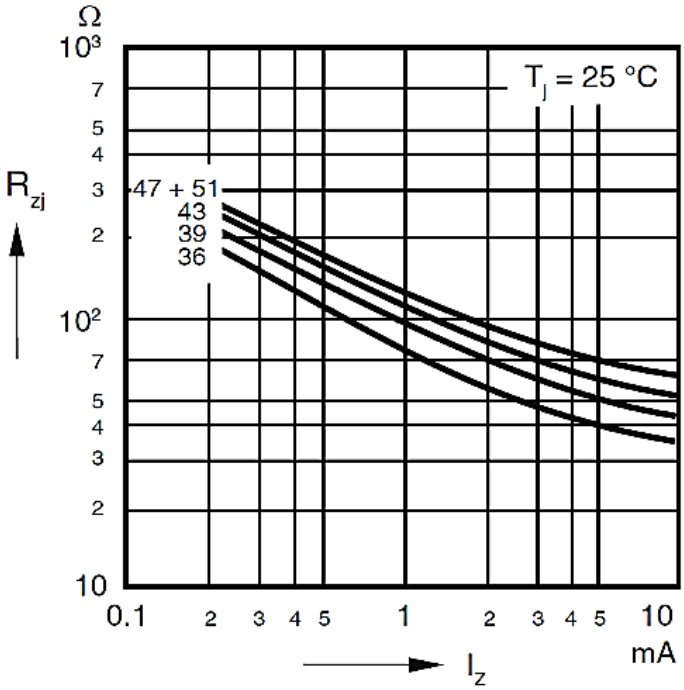
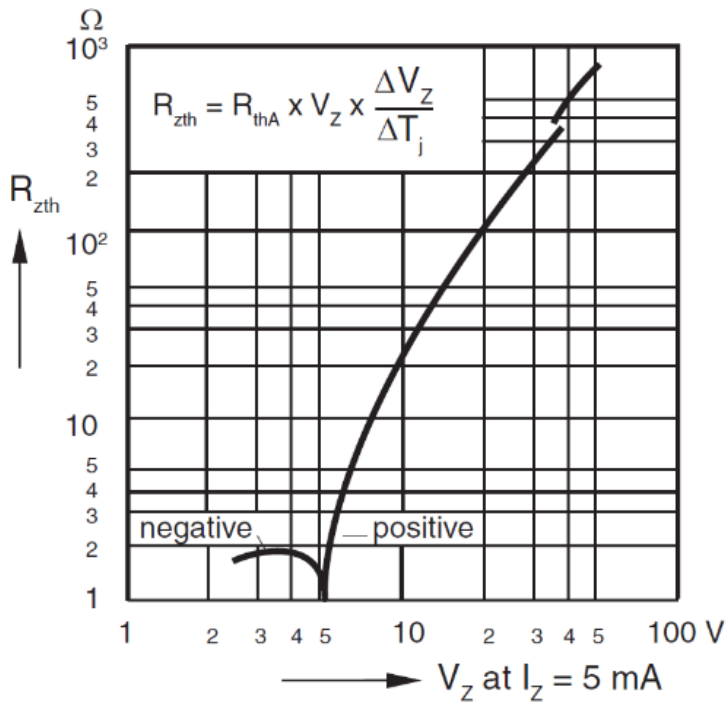


Figure 6. Thermal Differential Resistance vs. Zener Voltage Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25℃ Unless Otherwise Specified

Figure 7. Dynamic Resistance vs. Zener Voltage Curve

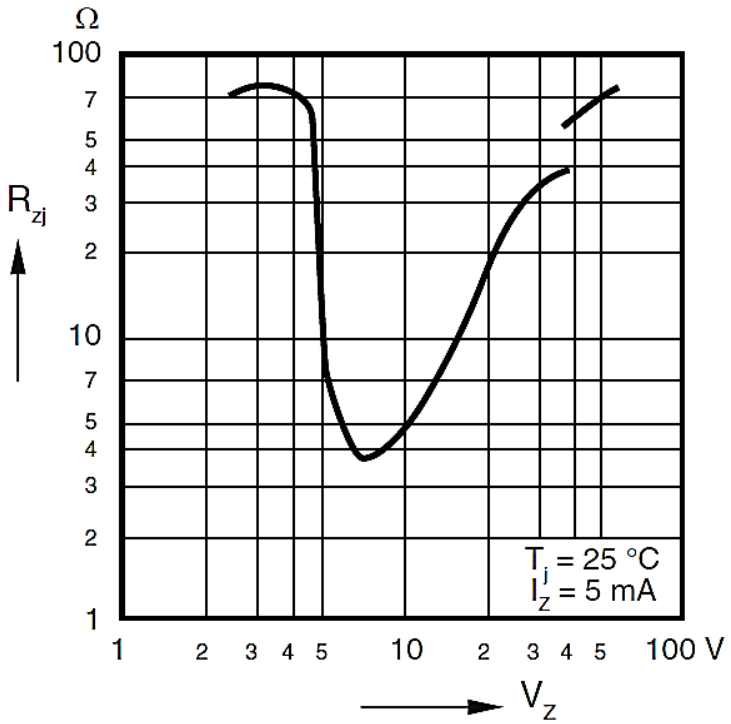
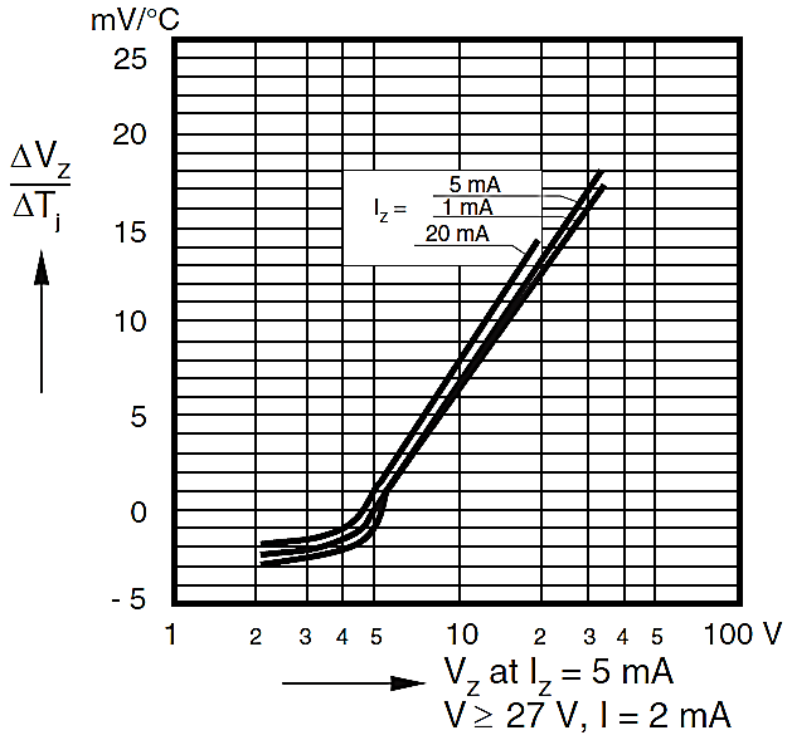


Figure 8. Temperature Dependence vs. Zener Voltage Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25℃ Unless Otherwise Specified

Figure 9. Change of Zener Voltage vs. Junction Temp. Curve

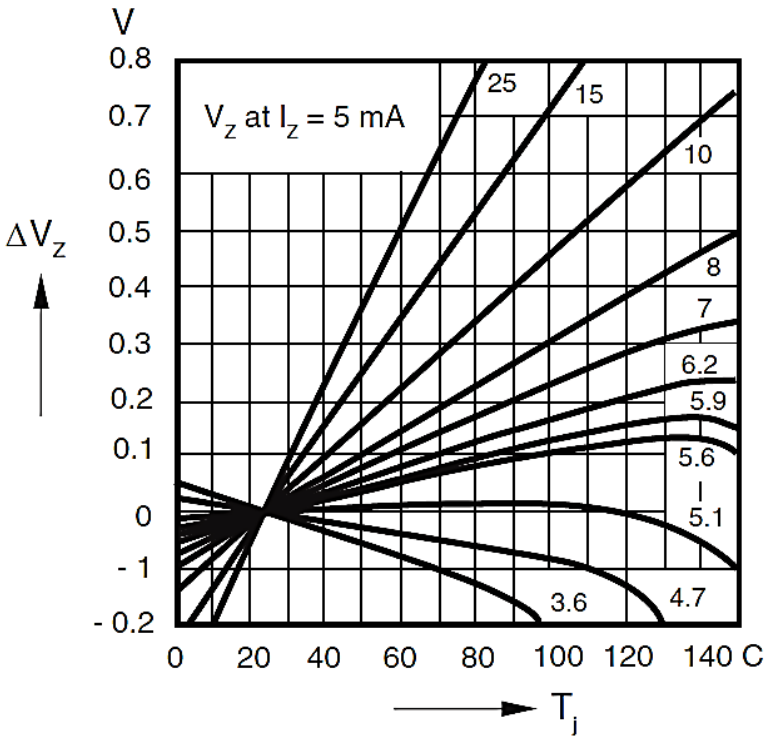
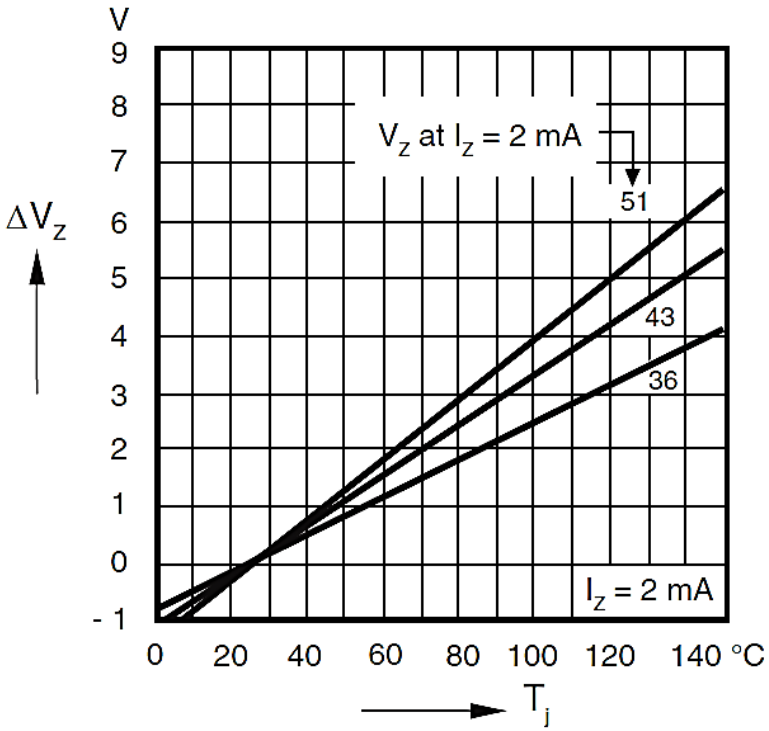


Figure 10. Change of Zener Voltage vs. Junction Temperature Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25°C Unless Otherwise Specified

Figure 11. Temperature Dependence vs. Zener Voltage. Curve

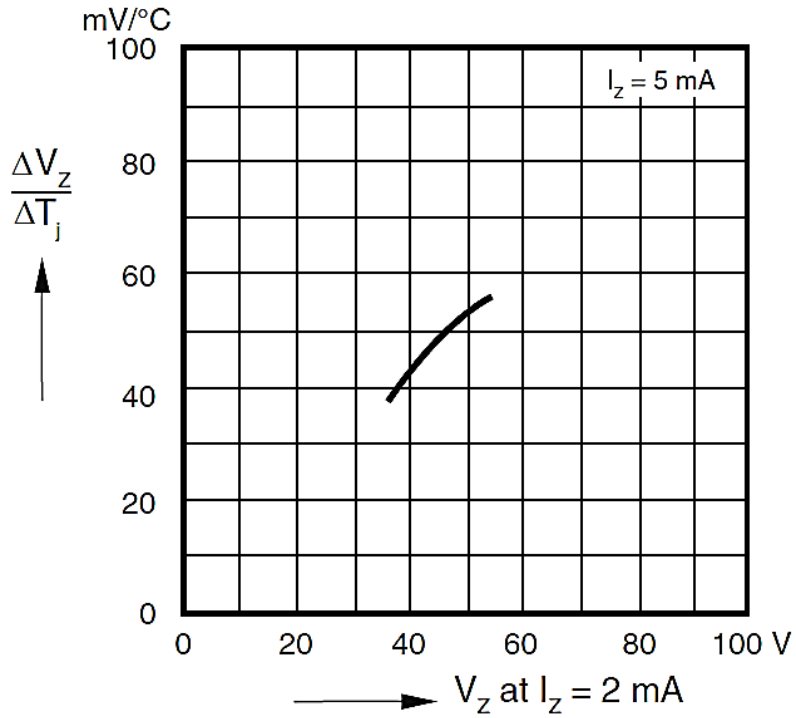
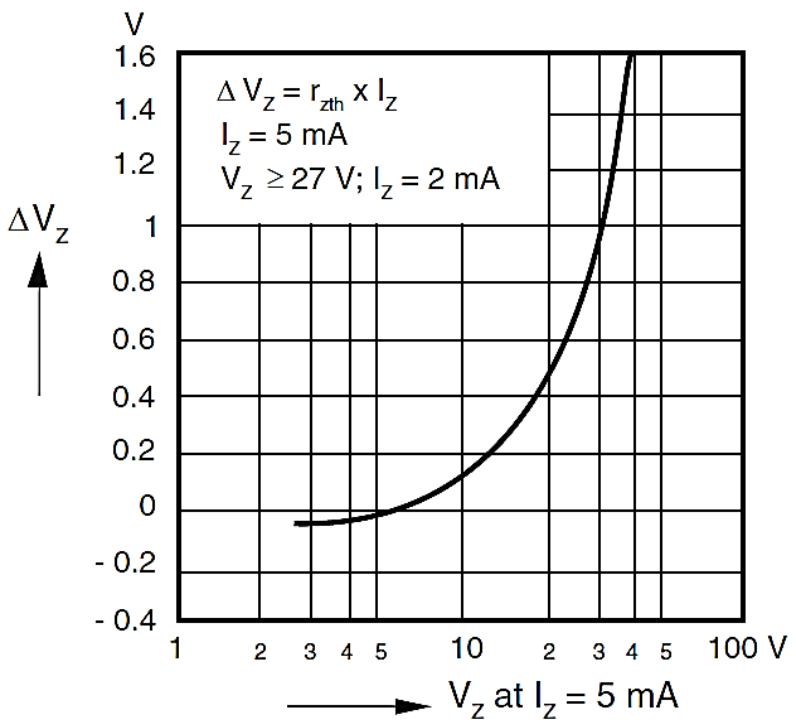


Figure 12. Change of Zener Voltage from Turn-on up to the Point of Thermal Equilibrium vs. Zener Voltage Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25°C Unless Otherwise Specified

Figure 13. Change of Zener Voltage from Turn-on up to the Point of Thermal Equilibrium vs. Zener Voltage. Curve

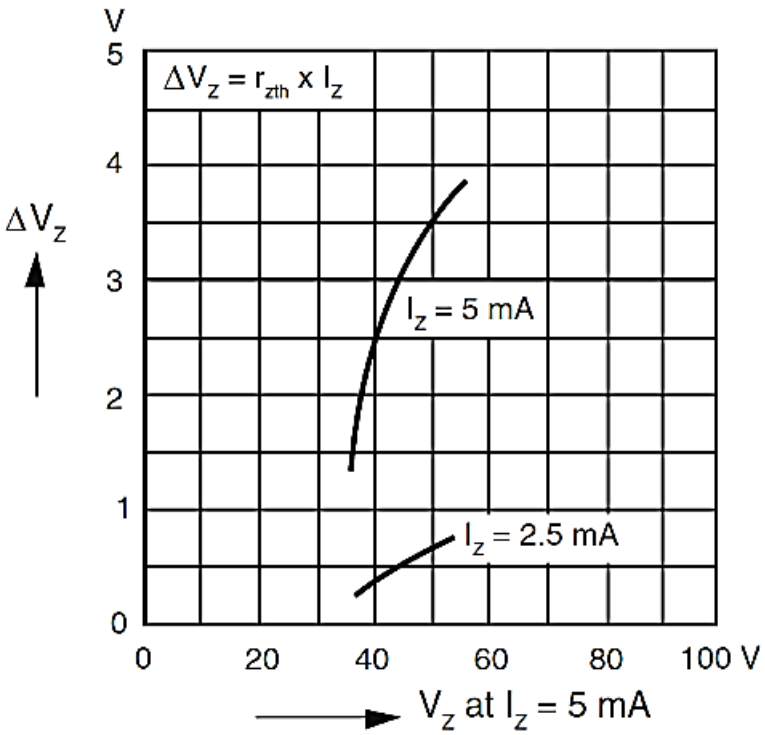
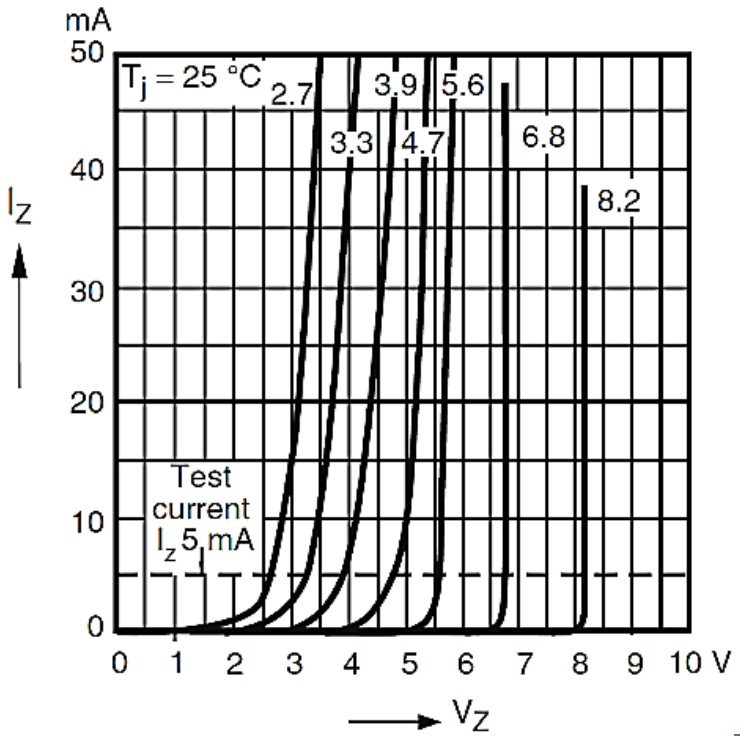


Figure 14. Breakdown Characteristics Curve



RATINGS AND CHARACTERISTIC CURVES (For Reference Only) - Ta= 25℃ Unless Otherwise Specified

Figure 15. Breakdown Characteristics Curve

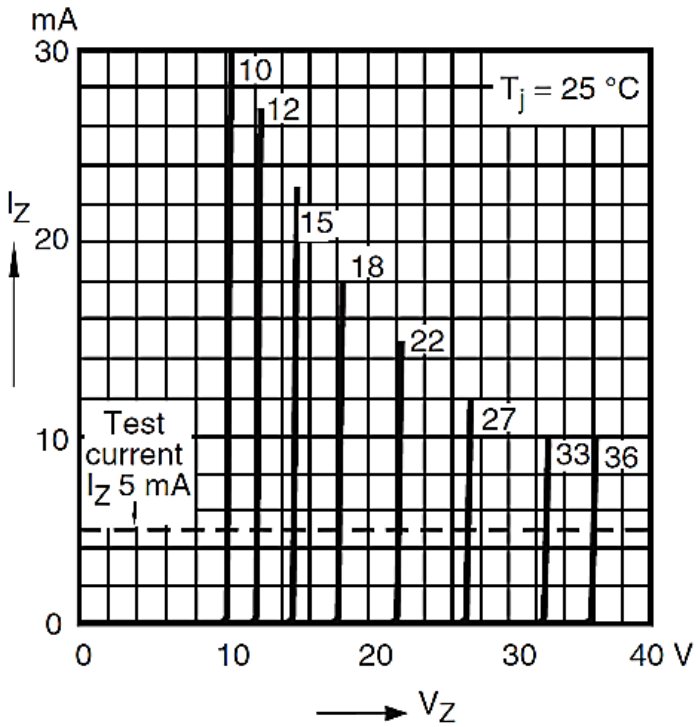
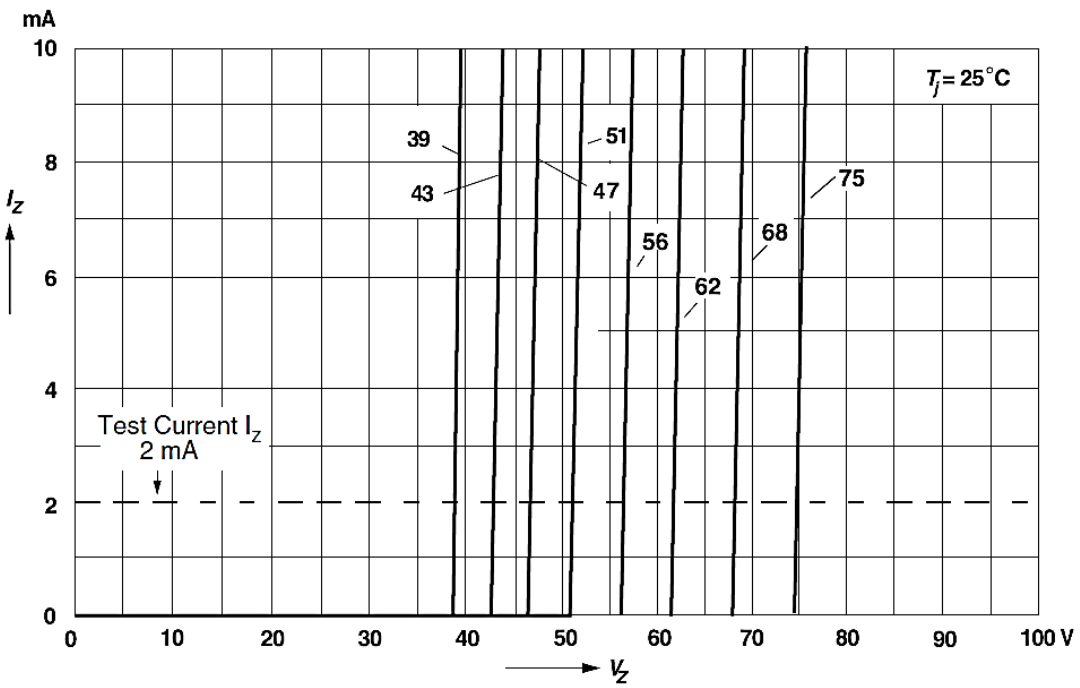


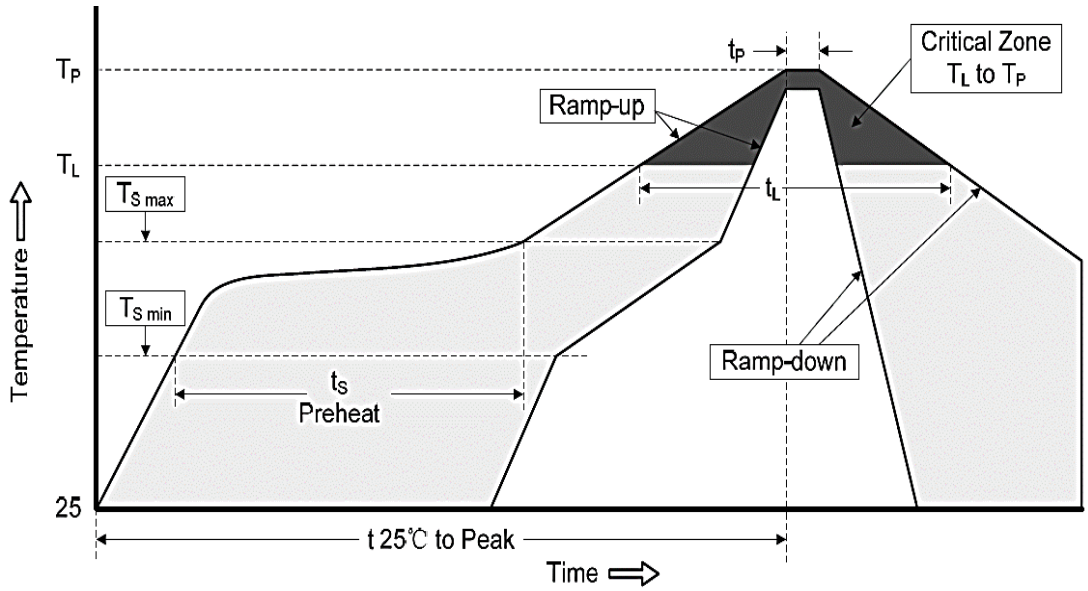
Figure 16. Breakdown Characteristics Curve



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	T_A=100°C for 1000 Hours at V_R=80% Rated V_R	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, T_A=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	T_A=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

SUGGESTED REFLOW PROFILE - For Reference Only

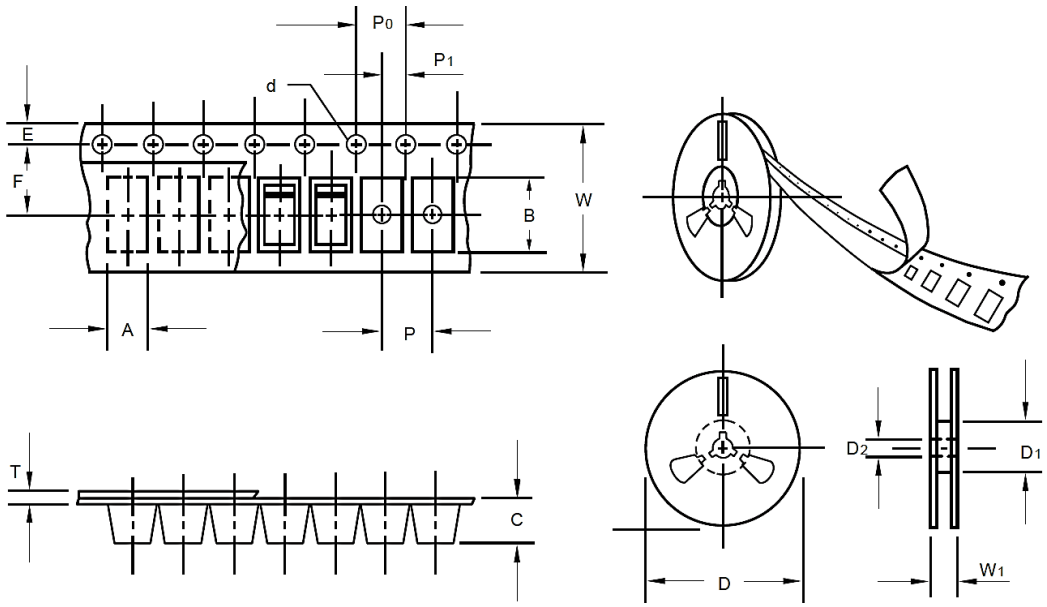


Profile Feature		Pb-Free Assembly
Average Ramp-up Rate (Ts Max to Tp)		3℃/second Max
Preheat	Temperature Min (Ts Min.)	150℃
	Temperature Max (Ts Max.)	200℃
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217℃
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature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

SMD ZENER DIODES BZT52C SERIES CASE SOD-323

TAPE/REEL, 3000pcs/Reel (Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-A and Tape wide 8mm, Component Spacing 4.0mm



Item	Symbol	Tolerance	Case SOD-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	178.00
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

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 can be obtained at Download Center.

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 can be obtained at Download Center.

IMPORTANT NOTES AND DISCLAIMER

1) 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.
2) NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
3) *NextGen* makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does NextGen assume any liability for application assistance or customer product design.
4) *NextGen* does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application. No license is granted by implication or otherwise under any intellectual property rights of NextGen.
5) *NextGen* products are not authorized for use as critical components in life support devices or systems without express written approval by *NextGen.*
6) *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

NextGen Components:

BZT52B47 P4SMA15CA P4SMA68CA SMDJ30CA 1SMA4745A MDD3401 P4SMA39CA P6SMB27A SDR319M508S012 YP32K76800S601 BZT52B13 BZT52C24 FK10M70000S0AJ P4SMA30A SDR303M825S012 SIR315M000S042 SMDJ43CA MM1W16 P6SMB200A 1SMA4751A BZT52B7V5 MMSZ5252B P4SMA12A SAR303M825S032 SMDJ6.5A BZT52C8V2S P6SMB150CA P6SMB24CA P6SMB150A YP32K76800S103