

## SOD-123 SURFACE MOUNT SILICON ZENER DIODES

### ● Features

- Low Zener Impedance
- Power Dissipation of 350mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

**Zener Diode**  
2.0 to 75 Volts  
**Power Dissipation**  
350 Milliwatts

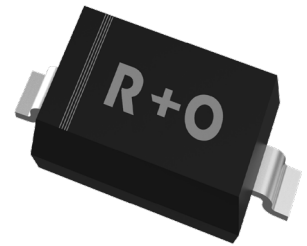
### ● Applications

Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

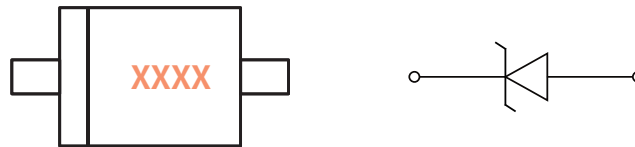
### ● Mechanical Data

- Case: SOD-123  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

SOD-123



### ● Function Diagram

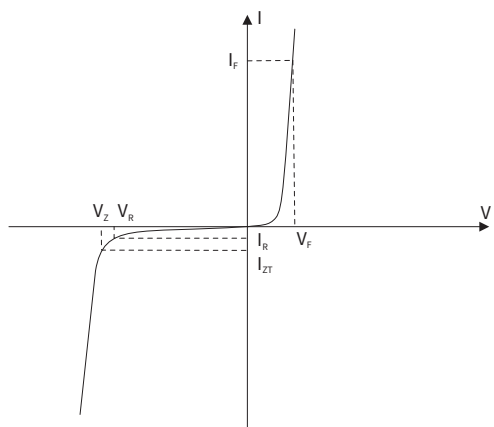


### ● Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation	$P_D$	mW	350
Forward Voltage @ $I_F=10\text{mA}$	$V_F$	V	0.9
Storage Temperature	$T_{stg}$	°C	-55 ~ +150
Junction Temperature	$T_J$	°C	-55 ~ +150
Typical Thermal Resistance	$R_{\theta JA}$	°C /W	357

### ● Electrical Parameter

SYMBOL	PARAMETER
$V_Z$	Reverse zener voltage @ $I_{ZT}$
$I_{ZT}$	Reverse current
$Z_{ZT}$	Maximum Zener Impedance @ $I_{ZT}$
$I_{ZK}$	Reverse Current
$Z_{ZK}$	Maximum Zener Impedance @ $I_{ZK}$
$I_R$	Reverse leakage current @ $V_R$
$V_R$	Reverse voltage
$I_F$	Forward current
$V_F$	Forward voltage @ $I_F$



# BZT52C2V0 THRU BZT52C75

SURFACE MOUNT ZENER DIODES

## ● Electrical Characteristics (Ta=25°C Unless otherwise noted)

Type Number	Marking	Nominal Zener Voltage				Zener Impedance			Leakage Current		Typical Temperature coefficient @ I <sub>ZTC</sub> (mV/°C)		Admissible Zener Current
		V <sub>Z</sub> (V)			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub> @V <sub>R</sub>		Min.	Max.	
		Min.	Nom.	Max.	(mA)	(Ω)	(mA)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	I <sub>ZM</sub> (mA)			
BZT52C2V0	WY	1.80	2.0	2.15	5	150	600	1.0	100	1.0	-3.5	0	5
BZT52C2V4	WX	2.28	2.4	2.52	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7	W1	2.57	2.7	2.84	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0	W2	2.85	3.0	3.15	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3	W3	3.14	3.3	3.47	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52C3V6	W4	3.42	3.6	3.78	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52C3V9	W5	3.71	3.9	4.10	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V3	W6	4.09	4.3	4.52	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V7	W7	4.47	4.7	4.94	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52C5V1	W8	4.85	5.1	5.36	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52C5V6	W9	5.32	5.6	5.88	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52C6V2	WA	5.89	6.2	6.51	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52C6V8	WB	6.46	6.8	7.14	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52C7V5	WC	7.13	7.5	7.88	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52C8V2	WD	7.79	8.2	8.61	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1	WE	8.65	9.1	9.56	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10	WF	9.50	10	10.50	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11	WG	10.45	11	11.55	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12	WH	11.40	12	12.60	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13	WI	12.35	13	13.65	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15	WJ	14.25	15	15.75	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16	WK	15.20	16	16.80	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18	WL	17.10	18	18.90	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20	WM	19.00	20	21.00	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22	WN	20.90	22	23.10	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24	WO	22.80	24	25.20	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C27	WP	25.65	27	28.35	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C30	WQ	28.50	30	31.50	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C33	WR	31.35	33	34.65	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C36	WS	34.20	36	37.80	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C39	WT	37.05	39	40.95	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52C43	WU	40.85	43	45.15	5	100	700	1.0	0.1	32.0	10.0	12.0	5
BZT52C47	WV	44.65	47	49.35	5	100	750	1.0	0.1	35.0	10.0	12.0	5
BZT52C51	WW	48.45	51	53.55	5	100	750	1.0	0.1	38.0	10.0	12.0	5
BZT52C56	XW	52.0	56	60.0	5	135	700	1.0	0.1	39.0	10.0	12.0	5
BZT52C62	6E	58.0	62	66.0	5	200	1000	1.0	0.2	47.0	10.0	12.0	5
BZT52C68	6F	64.0	68	72.0	5	250	1000	1.0	0.2	52.0	10.0	12.0	5
BZT52C75	6H	70.0	75	79.0	5	300	1000	1.0	0.2	57	10.0	12.0	5

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## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

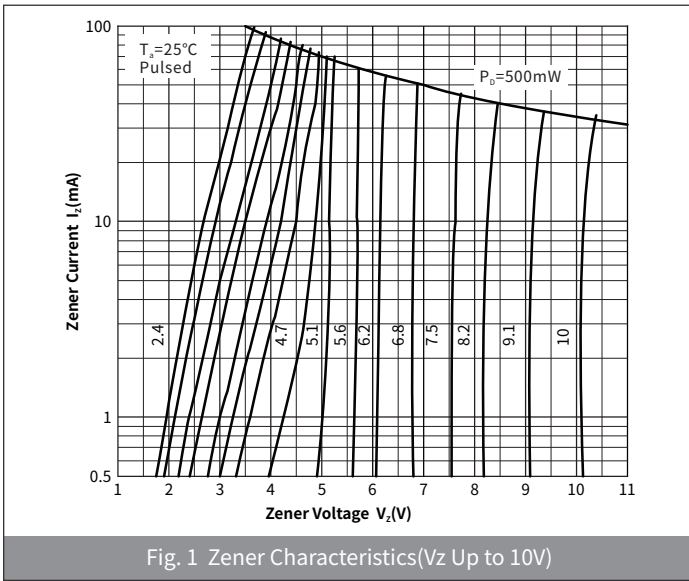


Fig. 1 Zener Characteristics( $V_z$  Up to 10V)

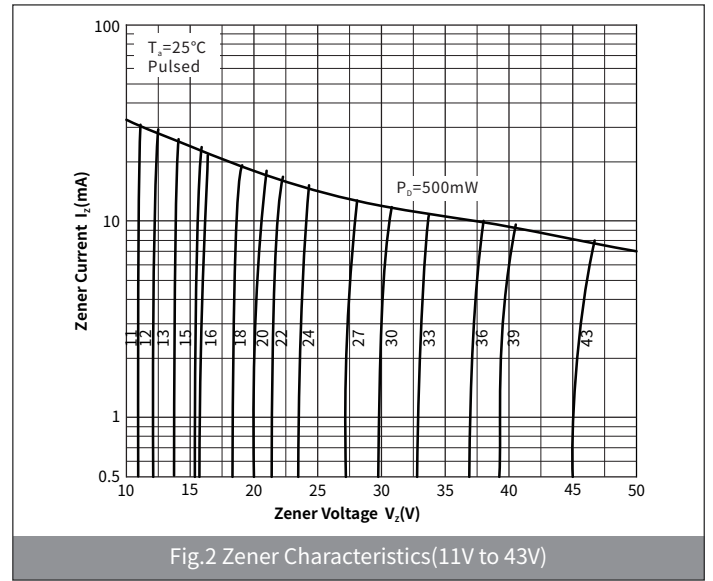


Fig. 2 Zener Characteristics(11V to 43V)

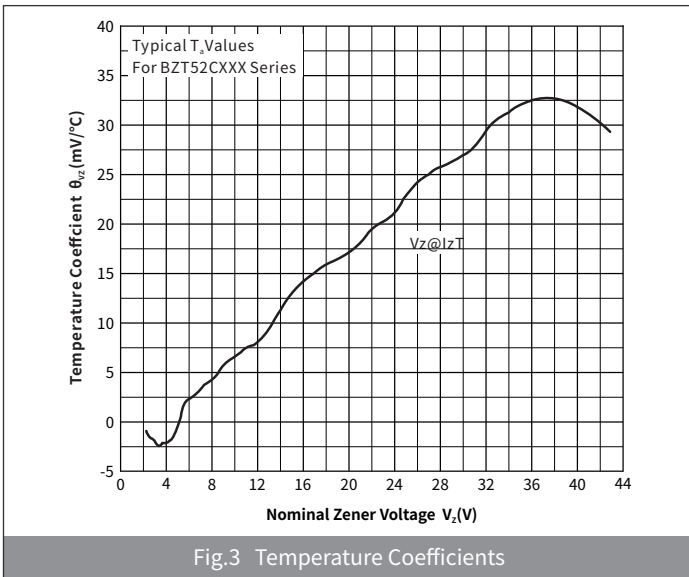


Fig. 3 Temperature Coefficients

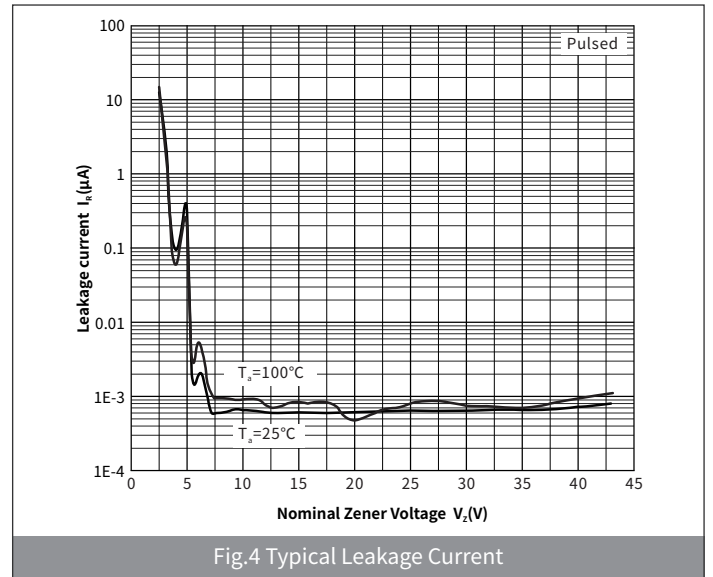


Fig. 4 Typical Leakage Current

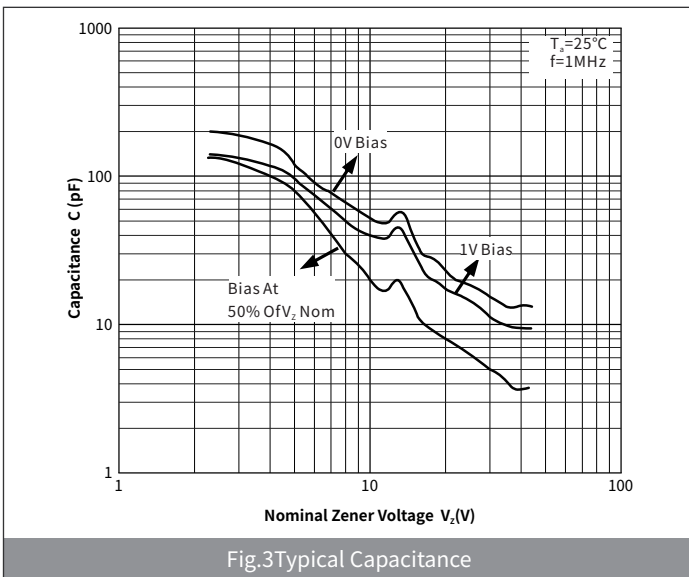


Fig. 3 Typical Capacitance

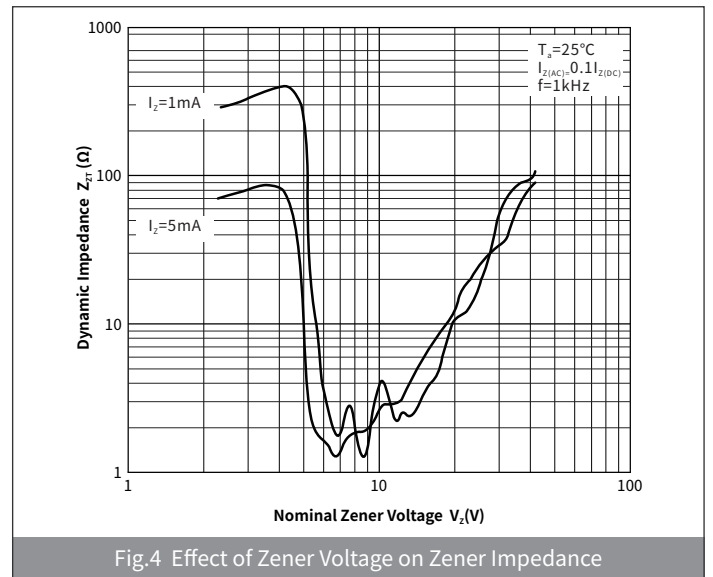


Fig. 4 Effect of Zener Voltage on Zener Impedance

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## ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123	R1	0.012	3000	45000	180000	7"

## ● Package Outline Dimensions (SOD-123)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.55	3.85	0.140	0.152
B	2.55	2.85	0.100	0.112
C	1.40	1.80	0.055	0.071
D	0.95	1.35	0.140	0.152
E	0.51	0.71	0.037	0.053
F	-	0.15	-	0.006
G	0.15	0.45	0.006	0.008
H	0.08	0.25	0.003	0.010
$\theta$	-	8°	-	8°

## ● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.91	-	0.036	-
K	-	2.36	-	0.092
M	1.22	-	0.048	-