

# DATA SHEET

**ZENER DIODES**  
**GENERAL VOLTAGE REGULATION**

BZT52CXXW SERIES

RoHS compliant & Halogen free

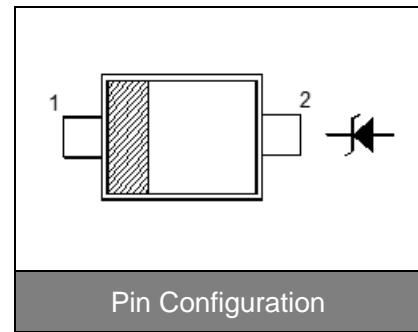
Product specification— July 26, 2023 V.0



## Zener Diodes

### Features

- Ideally suited for automated assembly processes
- Total power dissipation: max. 500mW
- Halogen and Antimony Free(HAF), RoHS compliant



### Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Value	Unit
Power Dissipation $T_L = 75^\circ\text{C}^1)$	$P_{\text{tot}}$	500	mW
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{\text{stg}}$	- 65 to + 150	°C

### Thermal Characteristics at Ta = 25°C

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient <sup>2)</sup>	$R_{\theta\text{JA}}$	340	°C/W
Thermal Resistance Junction to Lead <sup>1)</sup>	$R_{\theta\text{JL}}$	150	°C/W

<sup>1)</sup> FR-4 PCB = 89 \* 38 mm.

<sup>2)</sup> Mounted on an FR-4 PCB 38\*38\*1.6 mm with single-sided Cu pad areas 25mm<sup>2</sup>(>70 μm thick).

### Electrical Characteristics at Ta = 25°C (VF = 0.9 V Max. at IF = 10 mA)

Type	Marking Code	Zener Voltage Range <sup>1)</sup>				Dynamic Impedance				Reverse Leakage Current	
		$V_{ZT}$ at $I_{ZT}$			$I_{ZT}$	$Z_{ZT}$ at $I_{ZT}$	$I_{ZT}$	$Z_{Zk}$ at $I_{Zk}$	$I_{Zk}$	$I_R$ at $V_R$	$V_R$
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Max.(Ω)	(mA)	Max.(Ω)	(mA)	Max.(uA)	(V)
BZT52C2V4W	MH	2.2	2.4	2.6	5	100	5	600	1	50	1
BZT52C2V7W	MJ	2.5	2.7	2.9	5	100	5	600	1	20	1
BZT52C3V0W	MK	2.8	3.0	3.2	5	95	5	600	1	10	1
BZT52C3V3W	MM	3.1	3.3	3.5	5	95	5	600	1	5	1
BZT52C3V6W	MN	3.4	3.6	3.8	5	90	5	600	1	5	1
BZT52C3V9W	MP	3.7	3.9	4.1	5	90	5	600	1	3	1
BZT52C4V3W	MR	4.0	4.3	4.6	5	90	5	600	1	3	1
BZT52C4V7W	MX	4.4	4.7	5.0	5	80	5	500	1	3	2
BZT52C5V1W	MY	4.8	5.1	5.4	5	60	5	480	1	2	2
BZT52C5V6W	MZ	5.2	5.6	6.0	5	40	5	400	1	1	2
BZT52C6V2W	NA	5.8	6.2	6.6	5	10	5	150	1	3	4
BZT52C6V8W	NB	6.4	6.8	7.2	5	15	5	80	1	2	4
BZT52C7V5W	NC	7.0	7.5	7.9	5	15	5	80	1	1	5

**Zener Diodes**

## BZT52CXXW SERIES

Type	Marking Code	Zener Voltage Range <sup>1)</sup>				Dynamic Impedance				Reverse Leakage Current	
		V <sub>ZT</sub> at I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> at I <sub>ZT</sub>	I <sub>ZT</sub>	Z <sub>ZK</sub> at I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub> at V <sub>R</sub>	V <sub>R</sub>
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Max.(Ω)	(mA)	Max.(Ω)	(mA)	Max.(uA)	(V)
BZT52C8V2W	ND	7.7	8.2	8.7	5	15	5	80	1	0.7	5
BZT52C9V1W	NE	8.5	9.1	9.6	5	15	5	100	1	0.5	6
BZT52C10W	NF	9.4	10	10.6	5	20	5	150	1	0.2	7
BZT52C11W	NH	10.4	11	11.6	5	20	5	150	1	0.1	8
BZT52C12W	NJ	11.4	12	12.7	5	25	5	150	1	0.1	8
BZT52C13W	NK	12.4	13	14.1	5	30	5	170	1	0.1	8
BZT52C15W	NM	13.8	15	15.6	5	30	5	200	1	0.1	10.5
BZT52C16W	NN	15.3	16	17.1	5	40	5	200	1	0.1	11.2
BZT52C18W	NP	16.8	18	19.1	5	45	5	225	1	0.1	12.6
BZT52C20W	NR	18.8	20	21.2	5	55	5	225	1	0.1	14
BZT52C22W	NX	20.8	22	23.3	5	55	5	250	1	0.1	15.4
BZT52C24W	NY	22.8	24	25.6	5	70	5	250	1	0.1	16.8
BZT52C27W	NZ	25.1	27	28.9	2	80	2	300	0.5	0.1	18.9
BZT52C30W	PA	28	30	32	2	80	2	300	0.5	0.1	21
BZT52C33W	PB	31	33	35	2	80	2	325	0.5	0.1	23.1
BZT52C36W	PC	34	36	38	2	90	2	350	0.5	0.1	25.2
BZT52C39W	PD	37	39	41	2	130	2	350	0.5	0.1	27.3
BZT52C43W	6A	40	43	46	2.5	130	2	500	1	2	33
BZT52C47W	6B	44	47	50	2.5	150	2	500	1	2	36
BZT52C51W	6C	48	51	54	2.5	180	2	500	1	1	39
BZT52C56W	6D	52	56	60	2.5	180	2	500	1	1	43
BZT52C62W	6E	58	62	66	2.5	200	2	500	1	0.2	47
BZT52C68W	6F	64	68	72	2.5	250	2	500	1	0.2	52
BZT52C75W	6H	70	75	79	2.5	300	2	500	1	0.2	57

<sup>1)</sup> V<sub>ZT</sub> is tested with pulses (20ms).

### Electrical Characteristic Curves

Figure 1. Zener Characteristics Curve

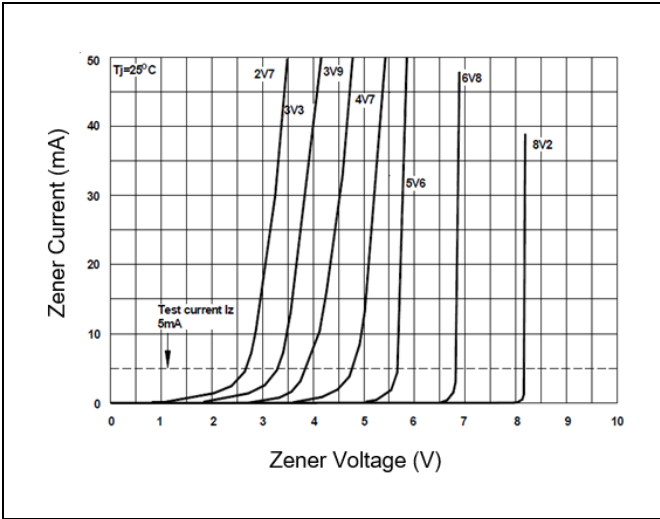


Figure 2. Zener Characteristics Curve

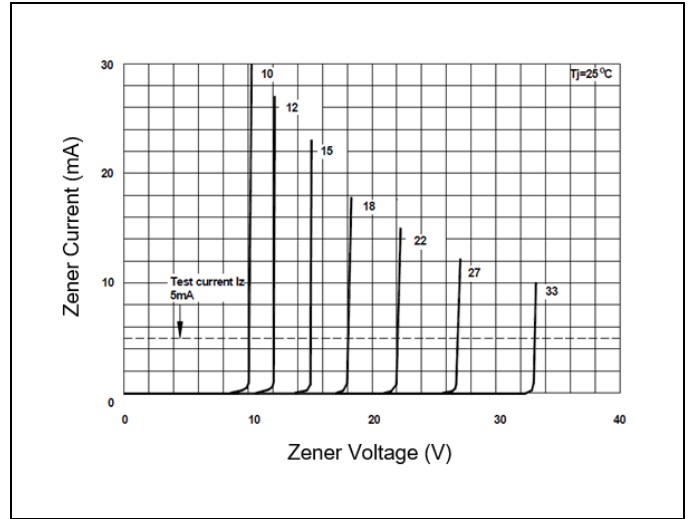
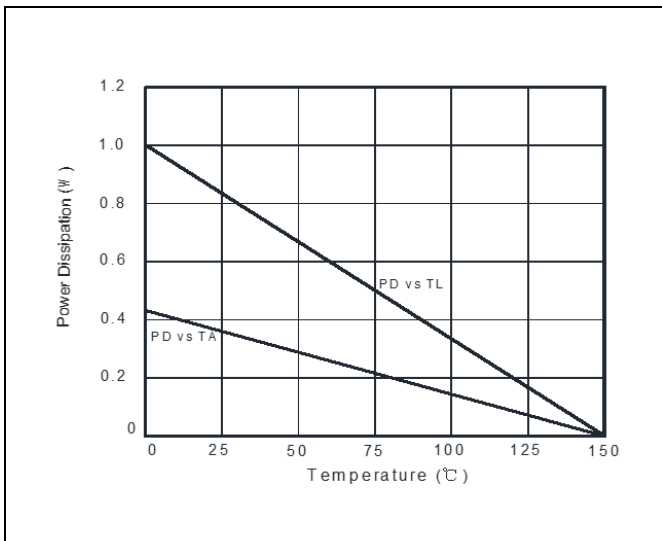
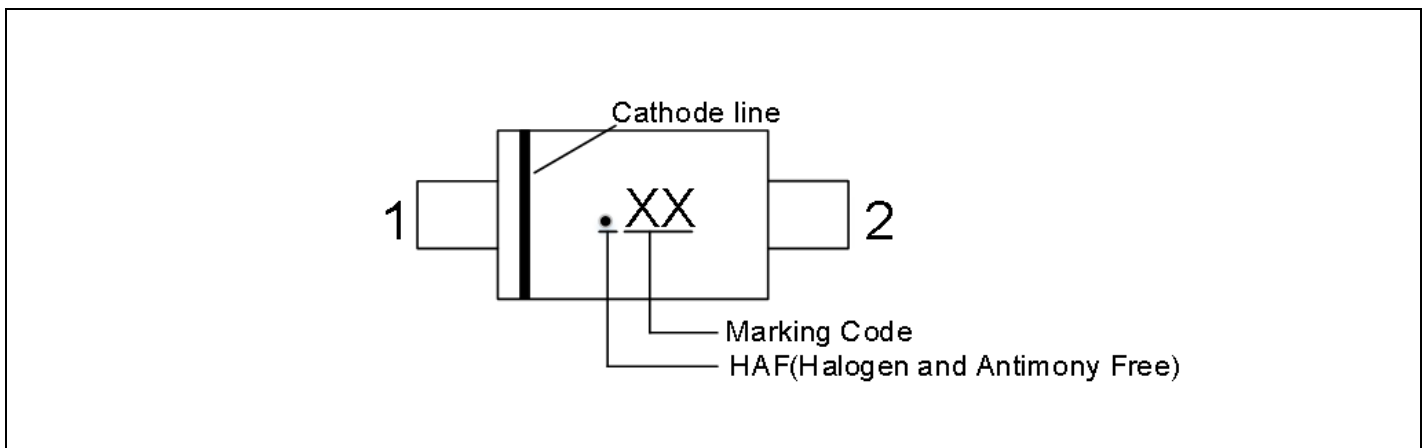


Figure 3. Power Derating Curve



### Marking Code



**Dimensions (SOD-123)**

Symbol	Dimension (mm)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.05	1.15	0.041	0.045
b <sub>p</sub>	0.50	0.60	0.020	0.024
c	0.100	0.135	0.004	0.005
D	2.60	2.70	0.102	0.106
E	1.55	1.65	0.061	0.065
H <sub>E</sub>	3.55	3.85	0.140	0.152

**Packing information**

Tape	Symbol	Dimension(mm)
		W
	P0	4.00±0.10
	P1	4.00±0.10
	P2	2.00±0.10
	D0	Φ1.55±0.05
	D1	Φ1.10±0.10
	E	1.75±0.10
	F	3.50±0.05
	A	1.80±0.10
	B	4.00±0.10
	K	1.30±0.10
	t	0.20±0.02
Reel	D	Φ177.5±0.3
	D2	Φ13±0.3
	W1	9.0±0.3
	Quantity: 3000PCS	

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