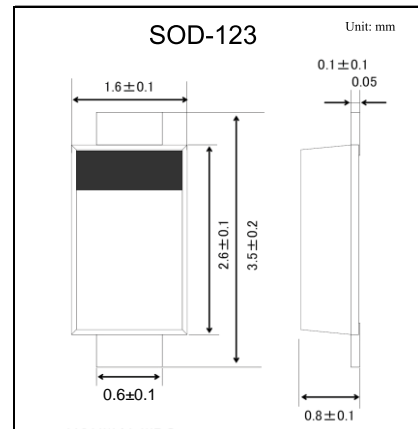


## Zener Diode 500mW SOD-123 Surface Mount

### ■ Features

- Wide Zener Voltage Range Selection, 2.4V to 75V
- Surface Device Type Mounting
- VZ Tolerance Selection of  $\pm 5\%$



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Power Dissipation	$P_d$	500	mW
Junction Temperature	$T_J$	150	°C
Operating Temperature Range	$T_{OPR}$	-65 to 150	
Storage Temperature range	$T_{stg}$	-65 to 150	

### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Device Type	Device Marking	$V_Z @ I_{ZT}$ (Volts)			$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_{ZK}$ (mA)	$Z_{ZK} @ I_{ZK}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
		Min	Nom	Max						
BZT52C2V4	2V4Z	2.28	2.4	2.52	5	100	1	564	45	1
BZT52C2V7	2V7Z	2.57	2.7	2.84	5	100	1	564	18	1
BZT52C3V0	3V0Z	2.85	3.0	3.15	5	100	1	564	9	1
BZT52C3V3	3V3Z	3.14	3.3	3.47	5	95	1	564	4.5	1
BZT52C3V6	3V6Z	3.42	3.6	3.78	5	90	1	564	4.5	1
BZT52C3V9	3V9Z	3.71	3.9	4.10	5	90	1	564	2.7	1
BZT52C4V3	4V3Z	4.09	4.3	4.52	5	90	1	564	2.7	1
BZT52C4V7	4V7Z	4.47	4.7	4.94	5	80	1	470	2.7	2
BZT52C5V1	5V1Z	4.85	5.1	5.36	5	60	1	451	1.8	2
BZT52C5V6	5V6Z	5.32	5.6	5.88	5	40	1	376	0.9	2
BZT52C6V2	6V2Z	5.89	6.2	6.51	5	10	1	141	2.7	4
BZT52C6V8	6V8Z	6.46	6.8	7.14	5	15	1	75	1.8	4
BZT52C7V5	7V5Z	7.11	7.5	7.86	5	15	1	75	0.9	5
BZT52C8V2	8V2Z	7.79	8.2	8.61	5	15	1	75	0.63	5
BZT52C9V1	9V1Z	8.65	9.1	9.56	5	15	1	94	0.45	6
BZT52C10	10VZ	9.50	10	10.50	5	20	1	141	0.18	7
BZT52C11	11VZ	10.45	11	11.55	5	20	1	141	0.09	8
BZT52C12	12VZ	11.40	12	12.60	5	25	1	141	0.09	8
BZT52C13	13VZ	12.35	13	13.65	5	30	1	160	0.09	8
BZT52C15	15VZ	14.25	15	15.75	5	30	1	188	0.045	10.5
BZT52C16	16VZ	15.20	16	16.80	5	40	1	188	0.045	11.2

## Electrical Characteristics $T_a = 25^\circ\text{C}$

Device Type	Device Marking	$V_z @ I_{zT}$ (Volts)			$I_{zT}$ (mA)	$Z_{zT} @ I_{zT}$ ( $\Omega$ ) Max	$I_{zK}$ (mA)	$Z_{zK} @ I_{zK}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
		Min	Nom	Max						
BZT52C18	18VZ	17.10	18	18.90	5	45	1	212	0.045	12.6
BZT52C20	20VZ	19.00	20	21.00	5	55	1	212	0.045	14.0
BZT52C22	22VZ	20.90	22	23.10	5	55	1	235	0.045	15.4
BZT52C24	24VZ	22.80	24	25.20	5	70	1	235	0.045	16.8
BZT52C27	27VZ	25.65	27	28.35	2	80	0.5	282	0.045	18.9
BZT52C30	30VZ	28.50	30	31.50	2	80	0.5	282	0.045	21.0
BZT52C33	33VZ	31.35	33	34.65	2	80	0.5	306	0.045	23.0
BZT52C36	36VZ	34.20	36	37.80	2	90	0.5	329	0.045	25.2
BZT52C39	39VZ	37.05	39	40.95	2	130	0.5	329	0.045	27.3
BZT52C43	43VZ	40.85	43	45.15	2	150	0.5	353	0.045	30.1
BZT52C47	47VZ	44.65	47	49.35	2	170	0.5	353	0.045	33.0
BZT52C51	51VZ	48.45	51	53.55	2	180	0.5	376	0.045	35.7
BZT52C56	56VZ	53.20	56	58.80	2	200	0.5	400	0.045	39.2
BZT52C62	62VZ	58.90	62	65.10	2	215	0.5	423	0.045	43.4
BZT52C68	68VZ	64.60	68	71.40	2	240	0.5	447	0.045	47.6
BZT52C75	75VZ	71.25	75	78.75	2	255	0.5	470	0.045	52.5

$V_F$  Forward Voltage = 900mV Maximum @  $I_F = 10$  mA for all types

### Notes:

1. The Zener Voltage ( $V_z$ ) is tested under pulse condition of 10mS.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
4. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current ( $I_{zT}$  or  $I_{zK}$ ) is superimposed to  $I_{zT}$  or  $I_{zK}$ .

## Typical Characteristics

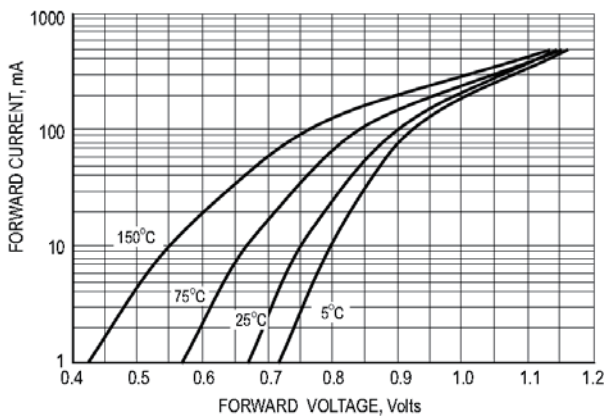


Fig.1 TYPICAL FORWARD VOLTAGE

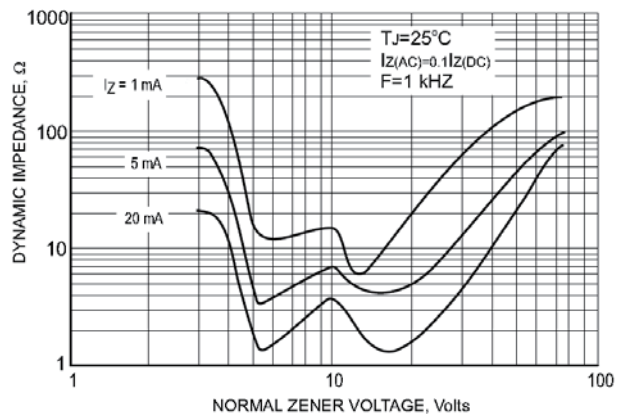


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

## Typical Characteristics

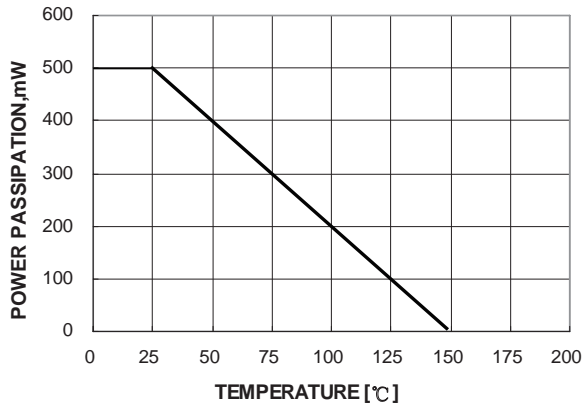


Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

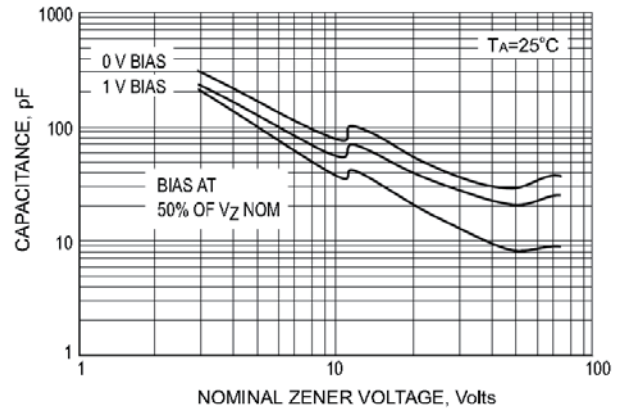


Fig.4 TYPICAL CAPACITANCE

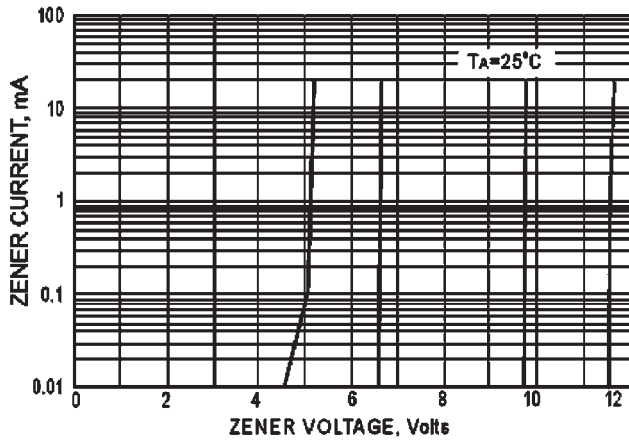


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

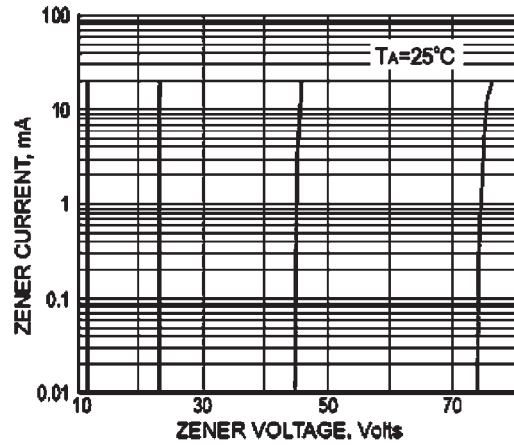


Fig.6 ZENER BREAKDOWN CHARACTERISTICS

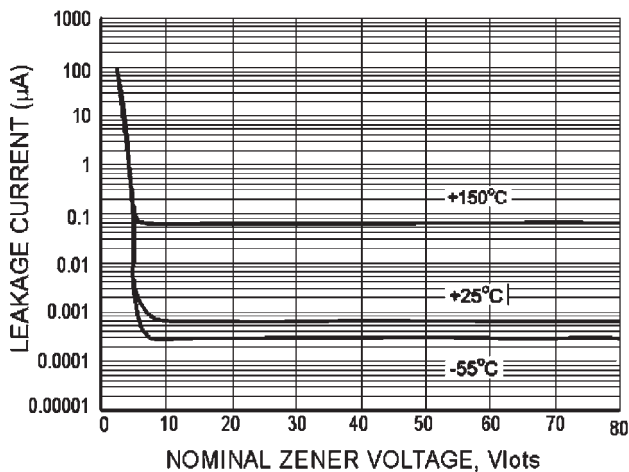


Fig.7 TYPICAL LEAKGE CURRENT