

## FEATURES

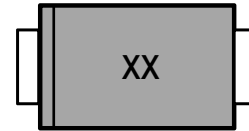
- \* Ideal for surface mount applications
- \* Easy pick and place
- \* High temperature soldering guaranteed:  
260°C / 10 seconds at terminals

## VOLTAGE RANGE

2.0 to 75 Volts  
500 mW

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Metallurgically bonded construction
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

### Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

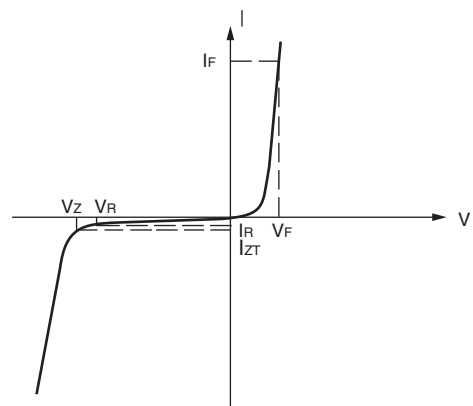
Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>tot</sub>	500	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	- 65 to + 150	°C

### Characteristics at T<sub>a</sub> = 25°C

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air	R <sub>thA</sub>	340	°C/W
Forward Voltage at I <sub>F</sub> = 10 mA	V <sub>F</sub>	0.9	V

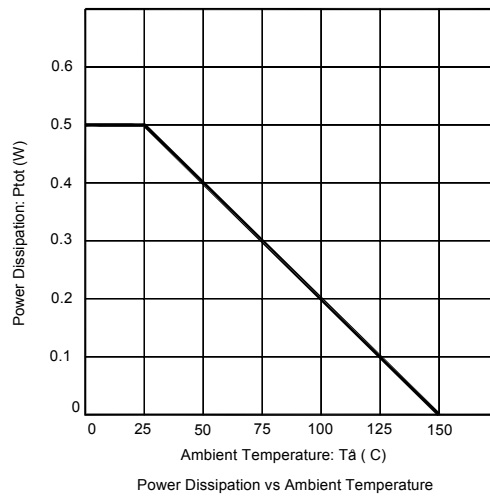
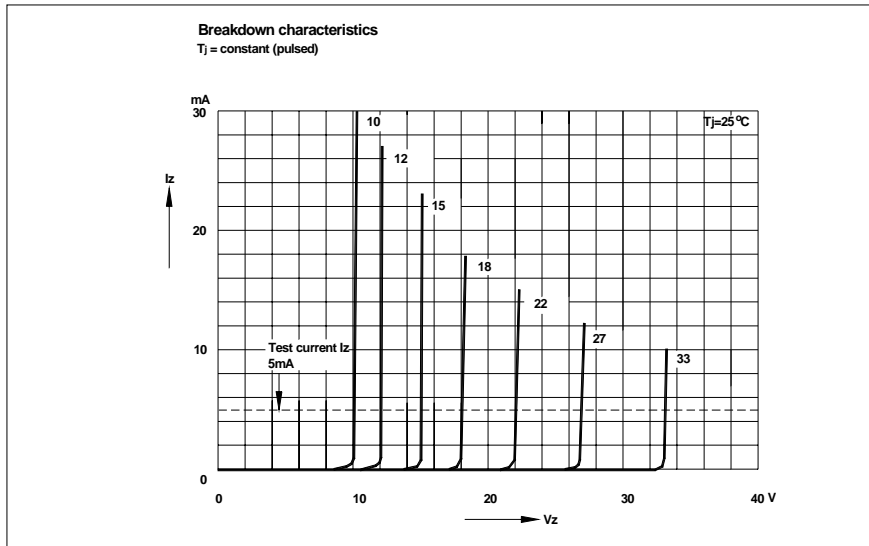
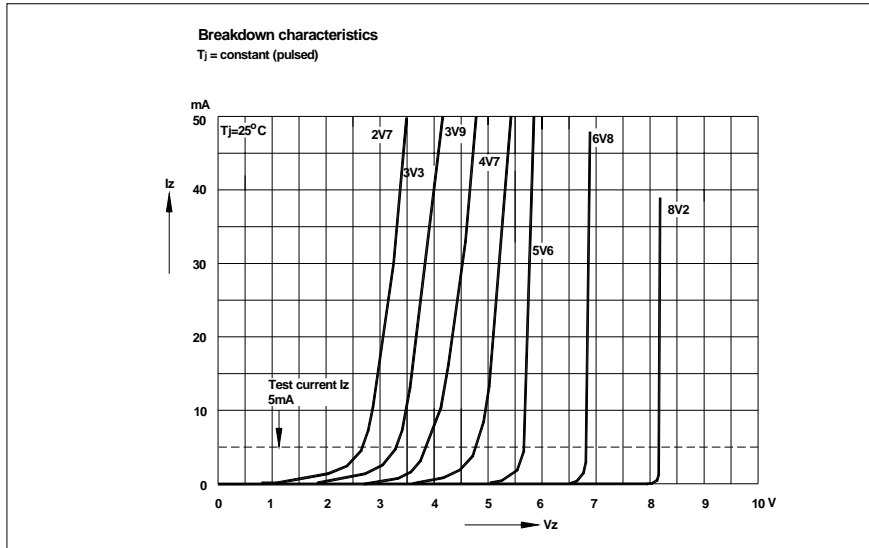
### ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER
V <sub>Z</sub>	Reverse Zener voltage at I <sub>ZT</sub>
I <sub>ZT</sub>	Reverse current
Z <sub>ZT</sub>	Maximum Zener impedance at I <sub>ZT</sub>
I <sub>ZK</sub>	Reverse current
Z <sub>ZK</sub>	Maximum Zener impedance at I <sub>ZK</sub>
I <sub>R</sub>	Reverse leakage current at V <sub>R</sub>
V <sub>R</sub>	Reverse voltage
I <sub>F</sub>	Forward current
V <sub>F</sub>	Forward voltage at I <sub>F</sub>
I <sub>ZM</sub>	Maximum DC Zener current



Zener Voltage Regulator

RATING AND CHARACTERISTIC CURVES



Characteristics at Ta = 25°C

Type	Marking	Zener Voltage Range <sup>(2)</sup>				Maximum Zener <sup>(3)</sup> Impedance				Reverse Current <sup>(2)</sup>	
		V <sub>ZT</sub> (at I <sub>ZT</sub> )			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <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 (V)	Nom (V)	Max (V)	(mA)	(Ω)	(mA)	(Ω)	(mA)	μA	V
BZT52C2V0	WY	1.91	2.0	2.09	5	100	5	600	1	150	1.0
BZT52C2V4	WX	2.2	2.4	2.6	5	100	5	600	1	50	1.0
BZT52C2V7	W1	2.5	2.7	2.9	5	100	5	600	1	20	1.0
BZT52C3V0	W2	2.8	3.0	3.2	5	95	5	600	1	10	1.0
BZT52C3V3	W3	3.1	3.3	3.5	5	95	5	600	1	5.0	1.0
BZT52C3V6	W4	3.4	3.6	3.8	5	90	5	600	1	5.0	1.0
BZT52C3V9	W5	3.7	3.9	4.1	5	90	5	600	1	3.0	1.0
BZT52C4V3	W6	4	4.3	4.6	5	90	5	600	1	3.0	1.0
BZT52C4V7	W7	4.4	4.7	5	5	80	5	500	1	3.0	2.0
BZT52C5V1	W8	4.8	5.1	5.4	5	60	5	480	1	2.0	2.0
BZT52C5V6	W9	5.2	5.6	6	5	40	5	400	1	1.0	2.0
BZT52C6V2	WA	5.8	6.2	6.6	5	10	5	150	1	3.0	4.0
BZT52C6V8	WB	6.4	6.8	7.2	5	15	5	80	1	2.0	4.0
BZT52C7V5	WC	7	7.5	7.9	5	15	5	80	1	1.0	5.0
BZT52C8V2	WD	7.7	8.2	8.7	5	15	5	80	1	0.7	5.0
BZT52C9V1	WE	8.5	9.1	9.6	5	15	5	100	1	0.5	6.0
BZT52C10	WF	9.4	10	10.6	5	20	5	150	1	0.2	7.0
BZT52C11	WG	10.4	11	11.6	5	20	5	150	1	0.1	8.0
BZT52C12	WH	11.4	12	12.7	5	25	5	150	1	0.1	8.0
BZT52C13	WI	12.4	13	14.1	5	30	5	170	1	0.1	8.0
BZT52C15	WJ	13.8	15	15.6	5	30	5	200	1	0.1	10.5
BZT52C16	WK	15.3	16	17.1	5	40	5	200	1	0.1	11.2
BZT52C18	WL	16.8	18	19.1	5	45	5	225	1	0.1	12.6
BZT52C20	WM	18.8	20	21.2	5	55	5	225	1	0.1	14.0
BZT52C22	WN	20.8	22	23.3	5	55	5	250	1	0.1	15.4
BZT52C24	WO	22.8	24	25.6	5	70	5	250	1	0.1	16.8
BZT52C27	WP	25.1	27	28.9	2	80	2	300	0.5	0.1	18.9
BZT52C30	WQ	28	30	32	2	80	2	300	0.5	0.1	21.0
BZT52C33	WR	31	33	35	2	80	2	325	0.5	0.1	23.1
BZT52C36	WS	34	36	38	2	90	2	350	0.5	0.1	25.2
BZT52C39	WT	37	39	41	2	130	2	350	0.5	0.1	27.3
BZT52C43	6A	40	43	46	2.5	130	2	500	1	2	33
BZT52C47	6B	44	47	50	2.5	150	2	500	1	2	36
BZT52C51	6C	48	51	54	2.5	180	2	500	1	1	37
BZT52C56	6D	52	56	60	2.5	180	2	500	1	1	43
BZT52C62	6E	58	62	66	2.5	200	2	500	1	0.2	47
BZT52C68	6F	64	68	72	2.5	250	2	500	1	0.2	52
BZT52C75	6H	70	75	79	2.5	300	2	500	1	0.2	57

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

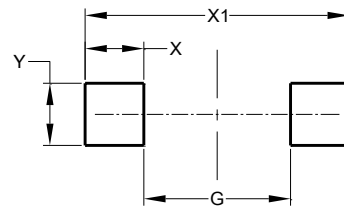
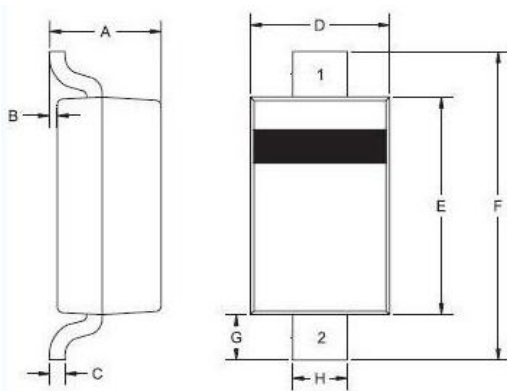
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOD123



SOD123		
Dim	Min	Max
A	0.95	1.35
B	0.00	0.12
C	-	0.20
D	1.40	1.80
E	2.50	2.80
F	3.60	3.90
G	0.40	-
H	0.50	0.70
All Dimensions in mm		

Dimensions	Value (in mm)
G	2.20
X	1.20
X1	4.60
Y	1.20

Tape & reel specification

Tape		Symbol	Dimension (mm)		
		P0	4.00±0.20		
		P1	4.00±0.20		
		P2	2.00±0.20		
		D0	1.55±0.10		
		D1	1.00±0.20		
		E	1.75±0.20		
		F	3.60±0.20		
		W	8.00±0.40		
		A0	2.30±0.40		
		B0	4.00±0.40		
		K0	1.50±0.40		
		T	0.23±0.10		
		7" Reel		D2	177.0±5.0
				D3	55Min.
				D4	R24.0±3.0
G	R82.0±3.0				
I	13.0±2.0				
W1	11.0±3.0				
Quantity: 3000PCS					