

BZX84B2V4A THRU BZX84B75A**List**

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BZX84B2V4A THRU BZX84B75A

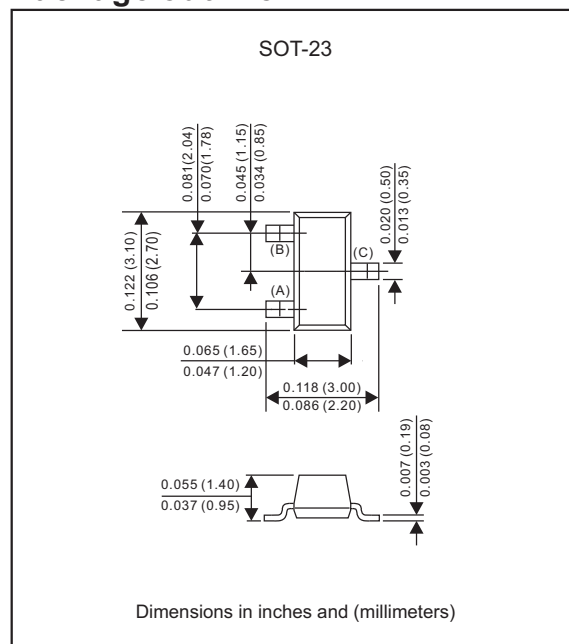
**300mW Surface Mount Zener
Diodes : 2.4V-75V**

Features

- Non-wire bonding structure improves.
- High demand voltage range (2.4V-75V).
- This is a Pb-Free device.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free part, ex.BZX84B2V0A-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.008 gram

Package outline**Maximum ratings** (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Power Dissipation at $T_A=25^\circ\text{C}$	Mounted on FR-4 board.	P_D			300	mW
Operating junction temperature range		T_J	-55		+150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-65		+150	$^\circ\text{C}$

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Electrical characteristics (at $T_A = 25^\circ\text{C}$ unless otherwise noted)

Part No.	Marking code	Zener voltage			Test current	Zener impedance			Leakage current	
		V _Z @ I _{ZT}			I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R	V _R
		Min.(V)	Nom.(V)	Max.(V)	mA	Max(Ω)	Max(Ω)	mA	Max(uA)	Volts
BZX84B2V4A	CR	2.35	2.4	2.45	5	100	600	1.0	50.0	1.0
BZX84B2V7A	CX	2.65	2.7	2.75	5	100	600	1.0	20.0	1.0
BZX84B3V0A	CY	2.94	3.0	3.06	5	95	600	1.0	10.0	1.0
BZX84B3V3A	CZ	3.23	3.3	3.37	5	95	600	1.0	5.0	1.0
BZX84B3V6A	DA	3.53	3.6	3.67	5	90	600	1.0	5.0	1.0
BZX84B3V9A	DB	3.82	3.9	3.98	5	90	600	1.0	3.0	1.0
BZX84B4V3A	DC	4.21	4.3	4.39	5	90	600	1.0	3.0	1.0
BZX84B4V7A	DD	4.61	4.7	4.79	5	80	500	1.0	3.0	2.0
BZX84B5V1A	DE	5.00	5.1	5.20	5	60	480	1.0	2.0	2.0
BZX84B5V6A	DF	5.49	5.6	5.71	5	40	400	1.0	1.0	2.0
BZX84B6V2A	DH	6.08	6.2	6.32	5	10	150	1.0	3.0	4.0
BZX84B6V8A	DJ	6.66	6.8	6.94	5	15	80	1.0	2.0	4.0
BZX84B7V5A	DK	7.35	7.5	7.65	5	15	80	1.0	1.0	5.0
BZX84B8V2A	DM	8.04	8.2	8.36	5	15	80	1.0	0.7	5.0
BZX84B9V1A	DN	8.92	9.1	9.28	5	15	100	1.0	0.5	6.0
BZX84B10A	DP	9.80	10	10.20	5	20	150	1.0	0.2	7.0
BZX84B11A	DR	10.80	11	11.20	5	20	150	1.0	0.1	8.0
BZX84B12A	DX	11.80	12	12.20	5	25	150	1.0	0.1	8.0
BZX84B13A	DY	12.70	13	13.30	5	30	170	1.0	0.1	8.0
BZX84B15A	DZ	14.70	15	15.30	5	30	200	1.0	0.05	10.5
BZX84B16A	EA	15.70	16	16.30	5	40	200	1.0	0.05	11.2
BZX84B18A	EB	17.60	18	18.40	5	45	225	1.0	0.05	12.6
BZX84B20A	EC	19.60	20	20.40	5	55	225	1.0	0.05	14.0
BZX84B22A	ED	21.60	22	22.40	5	55	250	1.0	0.05	15.4
BZX84B24A	EE	23.50	24	24.50	5	70	250	1.0	0.05	16.8
BZX84B27A	EF	26.50	27	27.50	2	80	300	0.5	0.05	18.9
BZX84B30A	EH	29.40	30	30.60	2	80	300	0.5	0.05	21.0
BZX84B33A	EJ	32.30	33	33.70	2	80	325	0.5	0.05	23.1
BZX84B36A	EK	35.30	36	36.70	2	90	350	0.5	0.05	25.2
BZX84B39A	EM	38.20	39	39.80	2	130	350	0.5	0.05	27.3
BZX84B43A	EN	42.10	43	43.90	2	150	375	0.5	0.05	30.1
BZX84B47A	EP	46.10	47	47.90	2	170	375	0.5	0.05	32.9
BZX84B51A	ER	50.00	51	52.00	2	180	400	0.5	0.05	35.7
BZX84B56A	EX	54.90	56	57.10	2	200	425	0.5	0.05	39.2
BZX84B62A	EY	60.80	62	63.20	2	215	450	0.5	0.05	43.4
BZX84B68A	EZ	66.60	68	69.40	2	240	475	0.5	0.05	47.6
BZX84B75A	FA	73.50	75	76.50	2	255	500	0.5	0.05	52.5

Note 1. The Zener voltage(V_Z) is measured 40ms after power is supplied.2. The operating resistances(Z_Z , Z_{ZK}) are measured by superimposing a minute alternating current on the regulated current(I_Z).

Rating and characteristic curves (BZX84B2V4A THRU BZX84B75A)

Fig.1 FORWARD CHARACTERISTICS

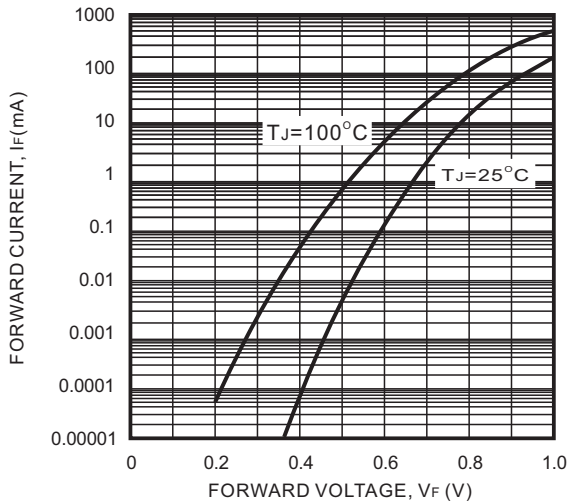


Fig.2 DERATING CURVE

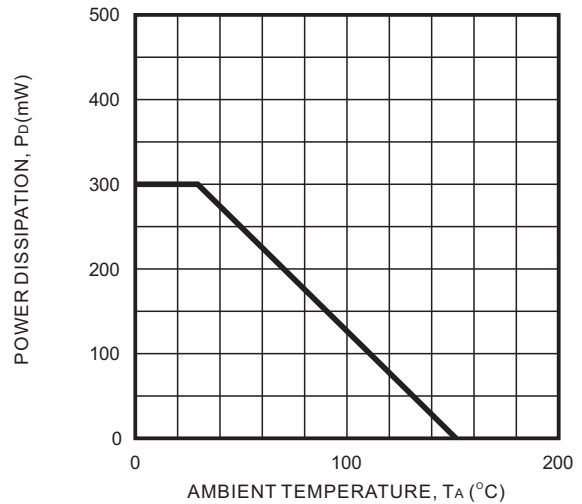


Fig.3 ZENER VOLTAGE CHARACTERISTICS

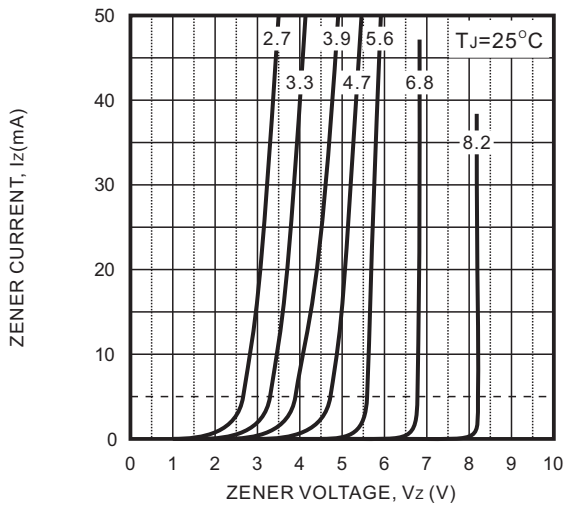


Fig.4 ZENER VOLTAGE CHARACTERISTICS

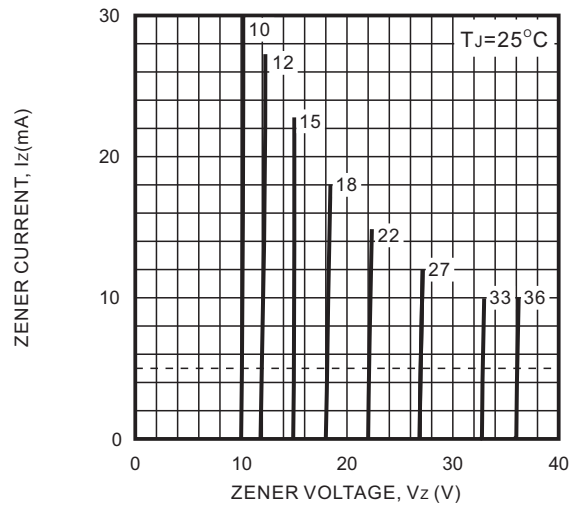
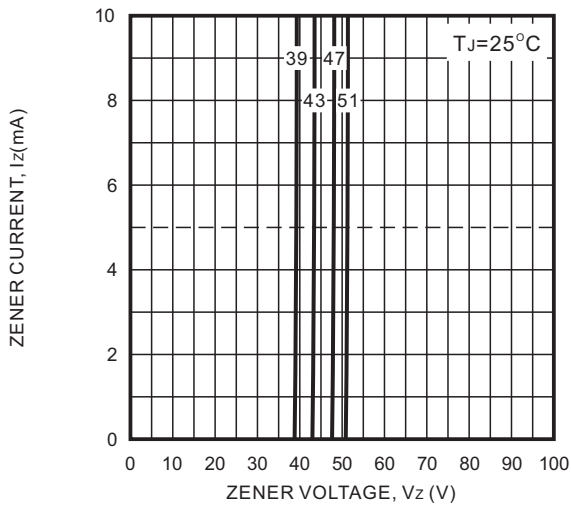
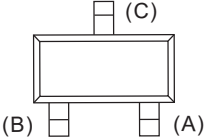
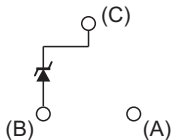
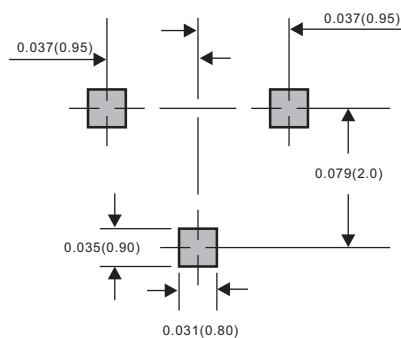


Fig.5 ZENER VOLTAGE CHARACTERISTICS

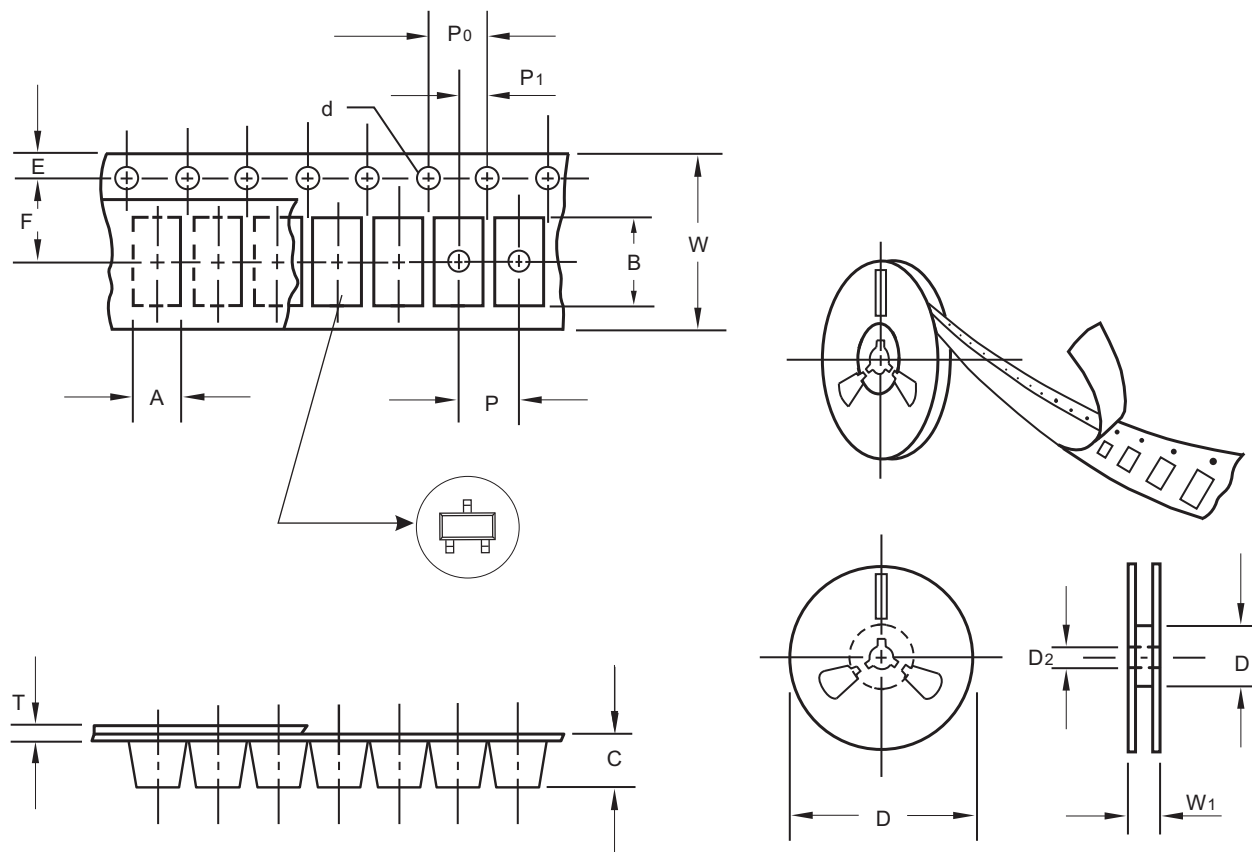


BZX84B2V4A THRU BZX84B75A**Pinning information**

Pin	Simplified outline	Symbol
PinA no connection PinB anode PinC cathode		

Suggested solder pad layout**SOT-23**

Dimensions in inches and (millimeters)

BZX84B2V4A THRU BZX84B75A**Packing information**

unit:mm

Item	Symbol	Tolerance	SOT-23
Carrier width	A	0.1	3.15
Carrier length	B	0.1	2.77
Carrier depth	C	0.1	1.22
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	62.00
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	0.23
Tape width	W	0.3	8.00
Reel width	W1	1.0	11.40

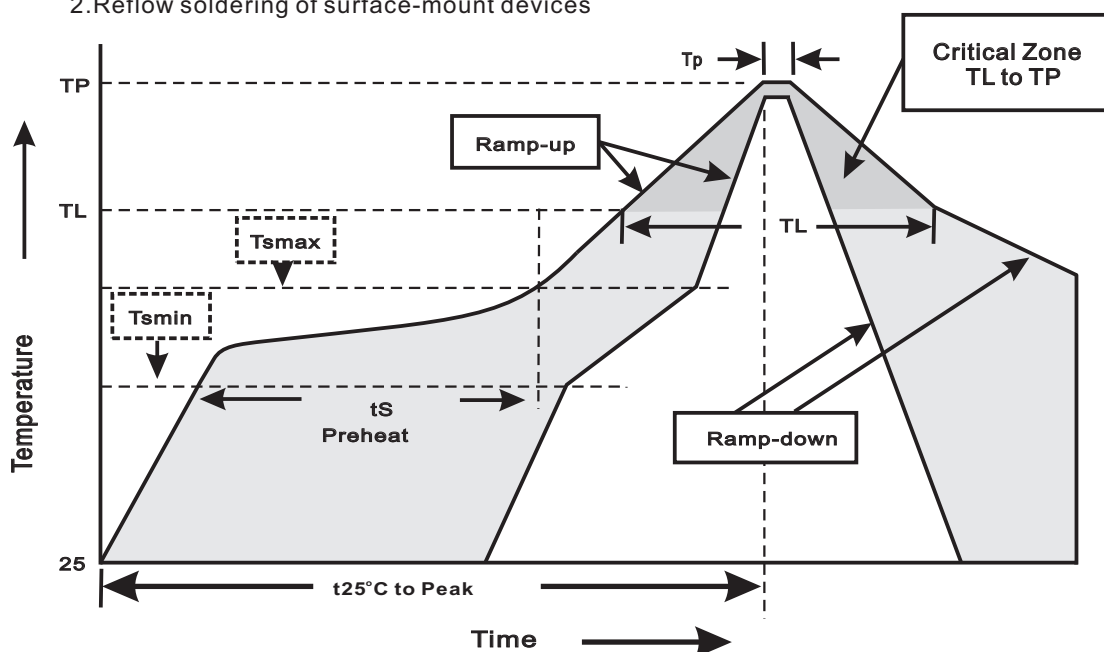
Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

BZX84B2V4A THRU BZX84B75A**Reel packing**

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-23	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000	11.6

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices

**3.Reflow soldering**

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

BZX84B2V4A THRU BZX84B75A**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm5^{\circ}\text{C}$ for $10\pm2\text{sec.}$ immerse body into solder $1/16''\pm1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Pressure Cooker	$15P_{SIG}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
5. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
6. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
7. Humidity	at $T_A=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
8. High Temperature Storage Life	at 150°C for 1000 hrs.	MIL-STD-750D METHOD-1031