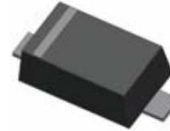


Small Signal Product

**200mW, 2% Tolerance SMD Zener Diode**

**FEATURES**

- Wide zener voltage range selection : 2.4V to 75V
- Surface Mount Device Type
- Moisture sensitivity level 1
- Pb free and RoHS compliant
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code
- VZ Tolerance Selection of  $\pm 2\%$
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate



**SOD-323F**



**MECHANICAL DATA**

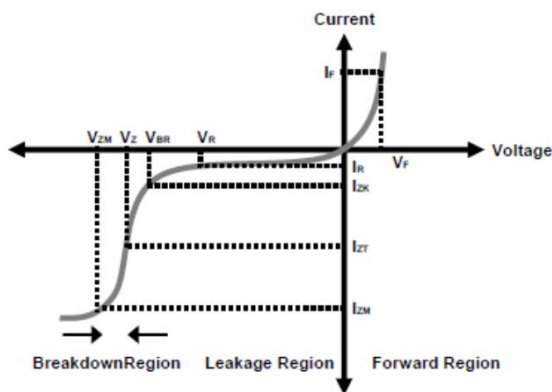
- Case: Flat lead SOD-323F small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Indicated by cathode band
- Weight : 4.02  $\pm$  0.5mg

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)**

PARAMETER	SYMBOL	VALUE	UNIT
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	1	V
Power Dissipation	P <sub>D</sub>	200	mW
Thermal Resistance from Junction to Ambient (Note 1)	R <sub>θJA</sub>	625	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

Notes: Valid provided that electrodes are kept at ambient temperature.

**Zener I vs. V Characteristics**



- V<sub>BR</sub> : Voltage at I<sub>ZK</sub>
- I<sub>ZK</sub> : Test current for voltage V<sub>BR</sub>
- Z<sub>ZK</sub> : Dynamic impedance at I<sub>ZK</sub>
- I<sub>ZT</sub> : Test current for voltage V<sub>Z</sub>
- V<sub>Z</sub> : Voltage at current I<sub>ZT</sub>
- Z<sub>ZT</sub> : Dynamic impedance at I<sub>ZT</sub>
- I<sub>ZM</sub> : Maximum steady state current
- V<sub>ZM</sub> : Voltage at I<sub>ZM</sub>

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**Electrical Characteristics**

(Ratings at TA=25°C ambient temperature unless otherwise specified)

 V<sub>F</sub> Forward Voltage = 1V Maximum @ I<sub>F</sub> = 10 mA for all part numbers

Part Number	Device Marking	V <sub>Z</sub> @ I <sub>ZT</sub> (Volt)			I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω) Max	I <sub>ZK</sub> (mA)	Z <sub>ZK</sub> @ I <sub>ZK</sub> (Ω) Max	I <sub>R</sub> @ V <sub>R</sub> (uA) Max	V <sub>R</sub> (V)
		Min	Nom	Max						
BZT52B2V4S	0Z	2.35	2.40	2.45	5	100	1	564	45	1
BZT52B2V7S	1Z	2.65	2.70	2.75	5	100	1	564	18	1
BZT52B3V0S	2Z	2.94	3.00	3.06	5	100	1	564	9	1
BZT52B3V3S	3Z	3.23	3.30	3.37	5	95	1	564	4.5	1
BZT52B3V6S	4Z	3.53	3.60	3.67	5	90	1	564	4.5	1
BZT52B3V9S	5Z	3.82	3.90	3.98	5	90	1	564	2.7	1
BZT52B4V3S	6Z	4.21	4.30	4.39	5	90	1	564	2.7	1
BZT52B4V7S	7Z	4.61	4.70	4.79	5	80	1	470	2.7	2.0
BZT52B5V1S	8Z	5.00	5.10	5.20	5	60	1	451	1.8	2.0
BZT52B5V6S	9Z	5.49	5.60	5.71	5	40	1	376	0.9	2.0
BZT52B6V2S	AZ	6.08	6.20	6.32	5	10	1	141	2.7	4.0
BZT52B6V8S	BZ	6.66	6.80	6.94	5	15	1	75	1.8	4.0
BZT52B7V5S	CZ	7.35	7.50	7.65	5	15	1	75	0.9	5.0
BZT52B8V2S	DZ	8.04	8.20	8.36	5	15	1	75	0.63	5.0
BZT52B9V1S	EZ	8.92	9.10	9.28	5	15	1	94	0.45	6.0
BZT52B10S	FZ	9.80	10.00	10.20	5	20	1	141	0.18	7.0
BZT52B11S	GZ	10.78	11.00	11.22	5	20	1	141	0.09	8.0
BZT52B12S	HZ	11.76	12.00	12.24	5	25	1	141	0.09	8.0
BZT52B13S	JZ	12.74	13.00	13.26	5	30	1	160	0.09	8.0
BZT52B15S	KZ	14.70	15.00	15.30	5	30	1	188	0.045	10.5
BZT52B16S	LZ	15.68	16.00	16.32	5	40	1	188	0.045	11.2
BZT52B18S	MZ	17.64	18.00	18.36	5	45	1	212	0.045	12.6
BZT52B20S	NZ	19.60	20.00	20.40	5	55	1	212	0.045	14.0
BZT52B22S	PZ	21.56	22.00	22.44	5	55	1	235	0.045	15.4
BZT52B24S	RZ	23.52	24.00	24.48	5	70	1	235	0.045	16.8
BZT52B27S	SZ	26.46	27.00	27.54	2	80	0.5	282	0.045	18.9
BZT52B30S	TZ	29.40	30.00	30.60	2	80	0.5	282	0.045	21.0
BZT52B33S	UZ	32.34	33.00	33.66	2	80	0.5	306	0.045	23.0
BZT52B36S	VZ	35.28	36.00	36.72	2	90	0.5	329	0.045	25.2
BZT52B39S	WZ	38.22	39.00	39.78	2	130	0.5	329	0.045	27.3
BZT52B43S	XZ	42.14	43.00	43.86	2	150	0.5	353	0.045	30.1
BZT52B47S	YZ	46.06	47.00	47.94	2	170	0.5	353	0.045	33.0
BZT52B51S	-Z	49.98	51.00	52.02	2	180	0.5	376	0.045	35.7
BZT52B56S	=Z	54.88	56.00	57.12	2	200	0.5	400	0.045	39.2
BZT52B62S	≡Z	60.76	62.00	63.24	2	215	0.5	423	0.045	43.4
BZT52B68S	>Z	66.64	68.00	69.36	2	240	0.5	447	0.045	47.6
BZT52B75S	<Z	73.50	75.00	76.50	2	255	0.5	470	0.045	52.5

 Notes: 1. The Zener Voltage (V<sub>Z</sub>) is tested under pulse condition of 10ms.

2. The device numbers listed have a standard tolerance on the nominal zener voltage of ±2%.

 3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest **Taiwan Semiconductor** 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<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.

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**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

Fig. 1 Typical Forward Characteristics

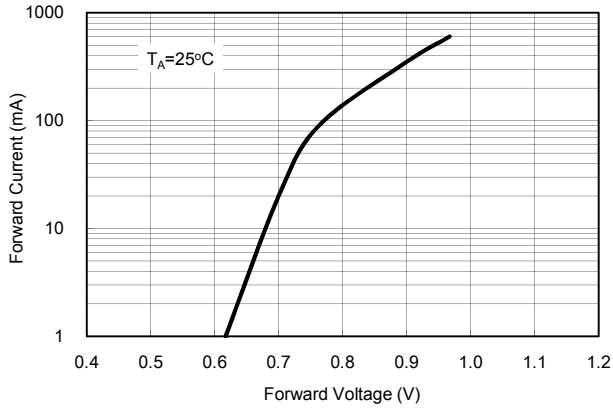


Fig. 2 Zener Breakdown Characteristics

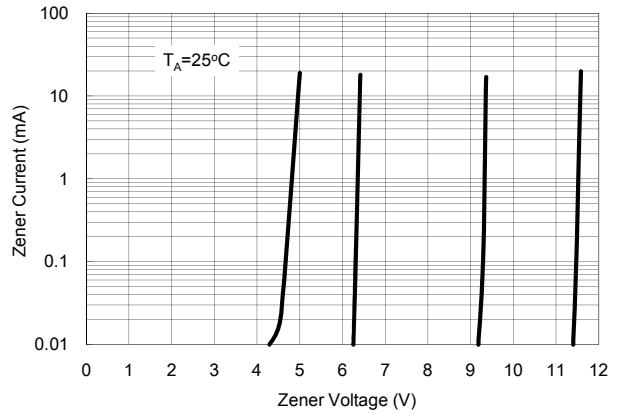


Fig. 3 Zener Breakdown Characteristics

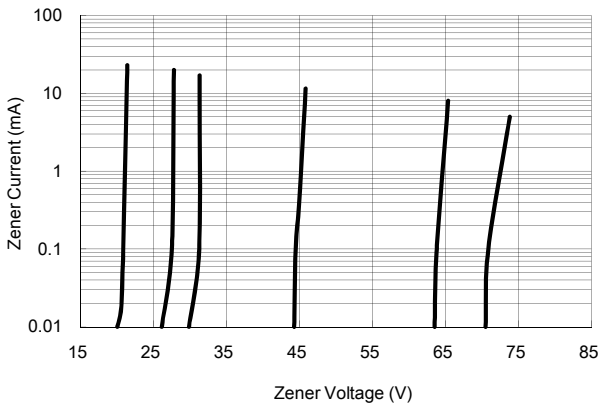


Fig. 4 Admissible Power Dissipation Curve

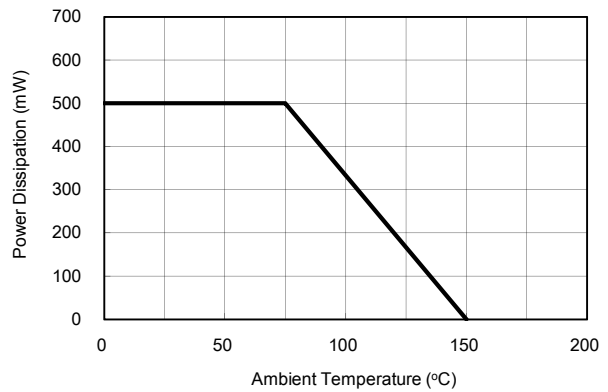


Fig. 5 Typical Capacitance

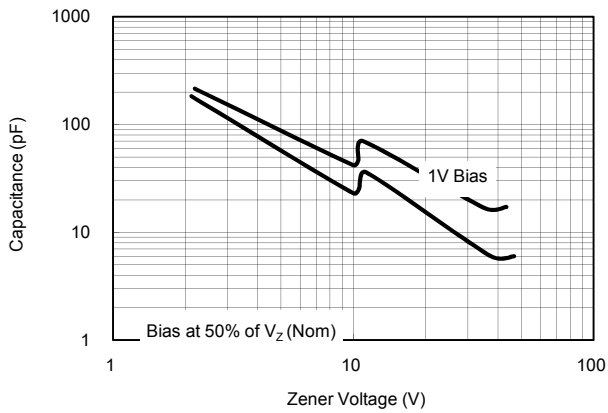
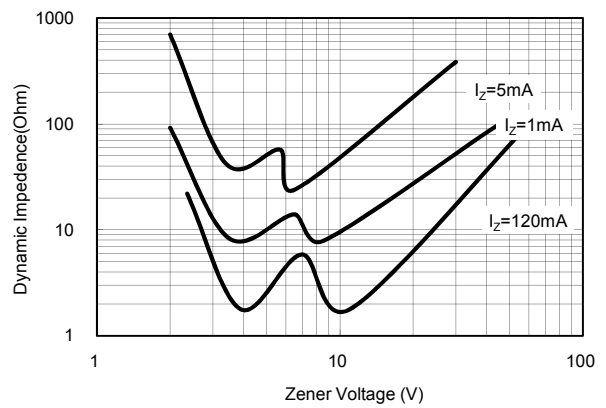


Fig. 6 Effect of Zener Voltage on Impedance



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<b>ORDERING INFORMATION</b>					
<b>PART NO.</b>	<b>MANUFACTURE CODE (Note1)</b>	<b>PACKING CODE</b>	<b>GREEN COMPOUND CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
BZT52BxxxS (Note2)		RR	G	SOD-323F	3K / 7" Reel

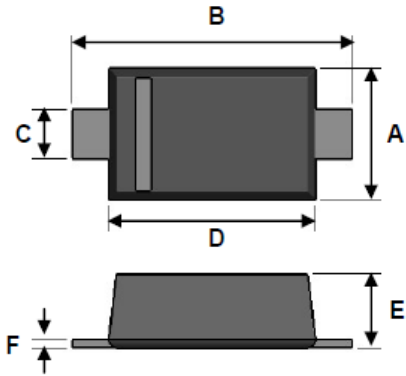
Note1: Manufacture special control, if empty means no special control requirement.

Note2: "xxx" is Device Code from "2V4" thru "75", detail could follow the previous page

<b>EXAMPLE</b>					
<b>PREFERRED P/N</b>	<b>PART NO.</b>	<b>MANUFACTURE CODE</b>	<b>PACKING CODE</b>	<b>GREEN COMPOUND CODE</b>	<b>DESCRIPTION</b>
BZT52B2V4S RRG	BZT52B2V4S		RR	G	Green compound
BZT52B2V4S-L0 RRG	BZT52B2V4S	L0	RR	G	Green compound

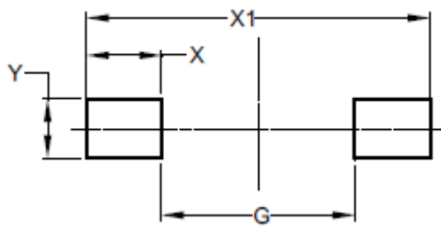
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**DIMENSIONS**  
**SOD-323F**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.15	1.35	0.045	0.053
B	2.30	2.80	0.091	0.110
C	0.25	0.40	0.010	0.016
D	1.60	1.80	0.063	0.071
E	0.80	1.10	0.031	0.043
F	0.05	0.25	0.002	0.010

**SUGGESTED PAD LAYOUT**



DIM.	Unit(mm)	Unit(inch)
	Typ.	Typ.
G	1.280	0.050
X	0.710	0.028
X1	2.700	0.106
Y	0.403	0.016

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