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 ±2%
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate

SOD-323F

Pb-Free

RoHS COMPLIANT

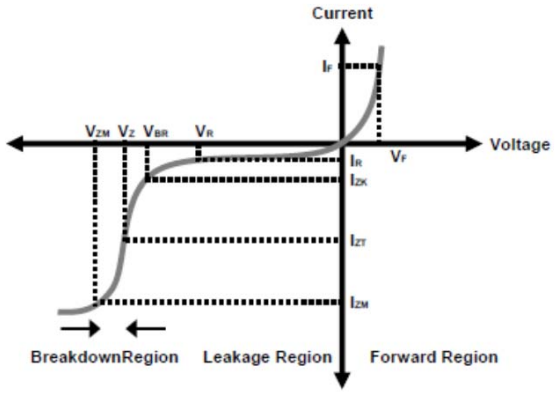
MECHANICAL DATA

- 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 ± 0.5mg

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Forward Voltage @ I_F = 10mA	V_F	1	V
Power Dissipation	P_D	200	mW
Thermal Resistance from Junction to Ambient (Note 1)	$R_{\theta JA}$	625	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

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

Zener I vs. V Characteristics



V_{BR} : Voltage at I_{ZK}
I_{ZK} : Test current for voltage V_{BR}
Z_{ZK} : Dynamic impedance at I_{ZK}
I_{ZT} : Test current for voltage V_Z
V_Z : Voltage at current I_{Z}
Z_{ZT} : Dynamic impedance at I_{ZT}
I_{ZM} : Maximum steady state current
V_{ZM} : Voltage at I_{ZM}

Electrical Characteristics

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

V_F Forward Voltage = 1V Maximum @ I_F = 10 mA for all part numbers

Part Number	Device Marking	V_Z @ I_{ZT} (Volt)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_{ZK} (mA)	Z_{ZK} @ I_{ZK} (Ω) Max	I_R @ V_R(uA) Max	V_R (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_Z) is tested under pulse condition of 10ms.

2. The device numbers listed have a standard tolerance on the nomial 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_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

RATINGS AND CHARACTERISTICS CURVES

(TA=25℃ unless otherwise noted)

Fig. 1 Typical Forward Characteristics

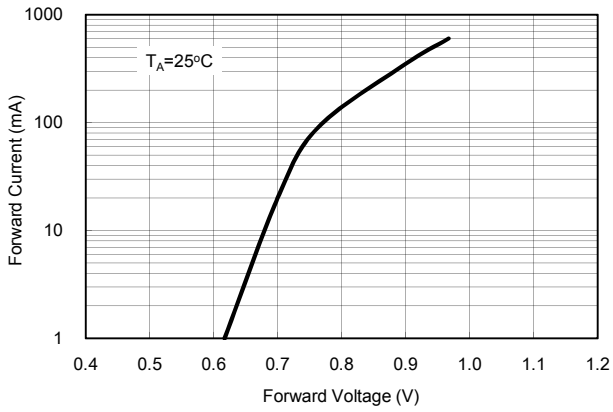


Fig. 2 Zener Breakdown Characteristics

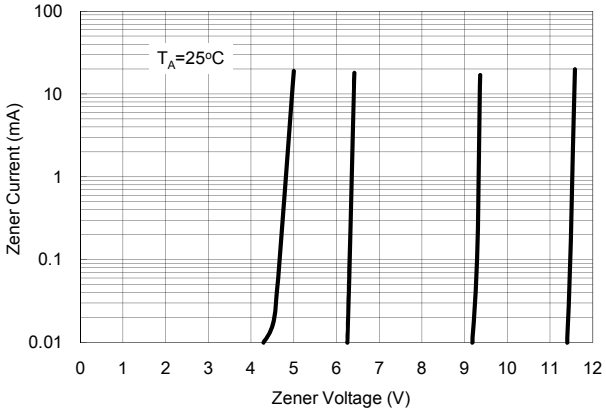


Fig. 3 Zener Breakdown Characteristics

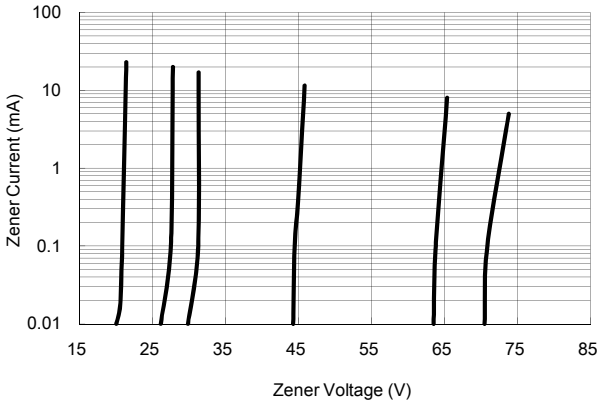


Fig. 4 Admissible Power Dissipation Curve

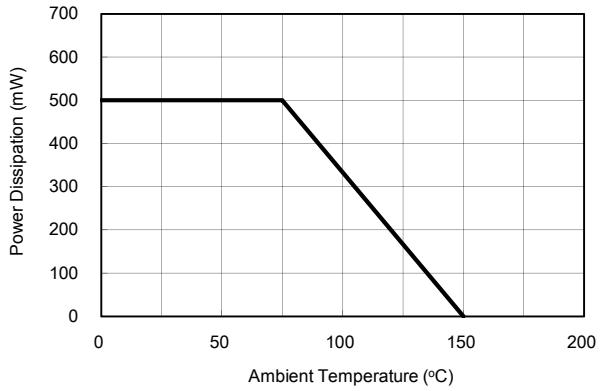


Fig. 5 Typical Capacitance

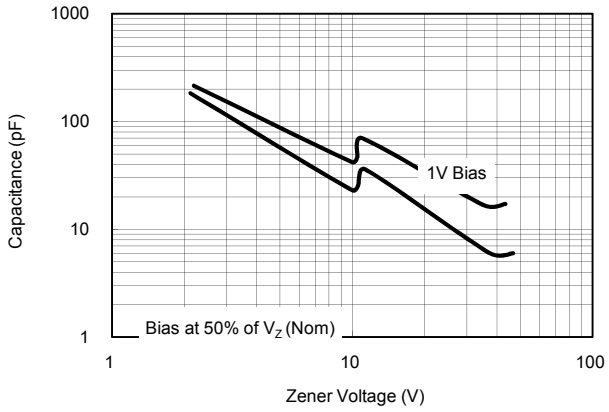
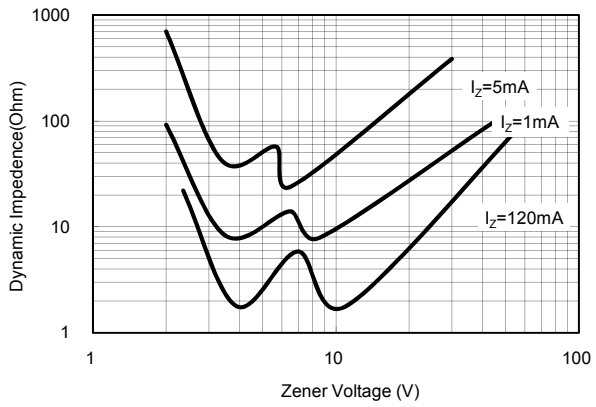


Fig. 6 Effect of Zener Voltage on Impedence



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

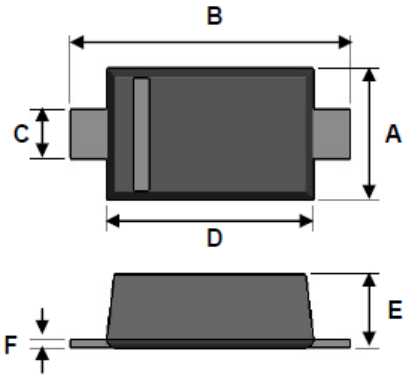
Note1: Manufacture special control, if empty means no special control requirement.

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

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

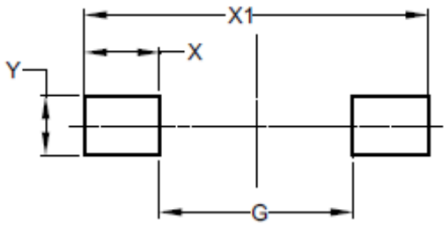
DIMENSIONS

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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