Small Signal Product

5% 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 ±5%
- Matte Tin(Sn) lead finish

SOD-123F

Pb-Free

RoHS COMPLIANT

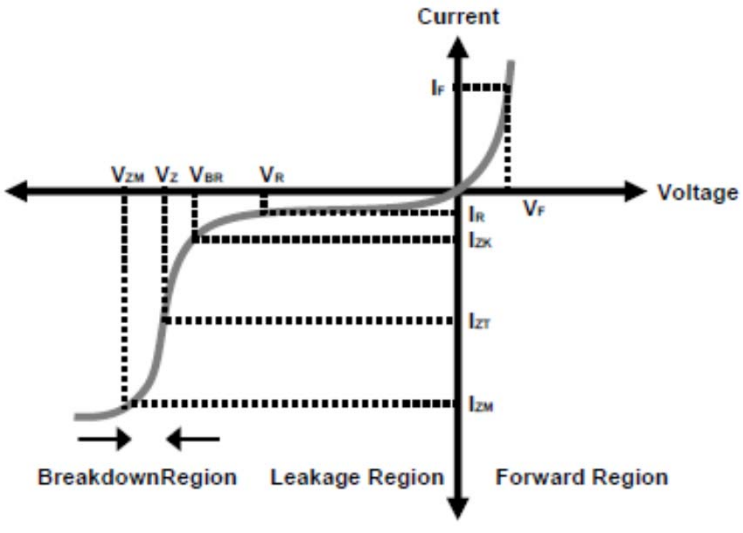
MECHANICAL DATA

- Case: Flat lead SOD-123F 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 : 8.85 ± 0.5mg

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Forward Voltage @ I_F = 10mA	V_F	1	V
Power Dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient (Note 1)	$R_{\theta JA}$	350	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Note 1: 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_{ZT}
Z_{ZT} : Dynamic impedance at I_{ZT}
I_{ZM} : Maximum steady state current
V_{ZM} : Voltage at I_{ZM}

ELECTRICAL CHARACTERISTICS (T_A= 25°C unless otherwise noted)

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(μA) Max	V_R (V)
		Min	Nom	Max						
BZT52C2V4	2V4Z	2.28	2.40	2.52	5	100	1	564	45	1.0
BZT52C2V7	2V7Z	2.57	2.70	2.84	5	100	1	564	18	1.0
BZT52C3V0	3V0Z	2.85	3.00	3.15	5	100	1	564	9	1.0
BZT52C3V3	3V3Z	3.14	3.30	3.47	5	95	1	564	4.5	1.0
BZT52C3V6	3V6Z	3.42	3.60	3.78	5	90	1	564	4.5	1.0
BZT52C3V9	3V9Z	3.71	3.90	4.10	5	90	1	564	2.7	1.0
BZT52C4V3	4V3Z	4.09	4.30	4.52	5	90	1	564	2.7	1.0
BZT52C4V7	4V7Z	4.47	4.70	4.94	5	80	1	470	2.7	2.0
BZT52C5V1	5V1Z	4.85	5.10	5.36	5	60	1	451	1.8	2.0
BZT52C5V6	5V6Z	5.32	5.60	5.88	5	40	1	376	0.9	2.0
BZT52C6V2	6V2Z	5.89	6.20	6.51	5	10	1	141	2.7	4.0
BZT52C6V8	6V8Z	6.46	6.80	7.14	5	15	1	75	1.8	4.0
BZT52C7V5	7V5Z	7.11	7.50	7.86	5	15	1	75	0.9	5.0
BZT52C8V2	8V2Z	7.79	8.20	8.61	5	15	1	75	0.63	5.0
BZT52C9V1	9V1Z	8.65	9.10	9.56	5	15	1	94	0.45	6.0
BZT52C10	10VZ	9.50	10.00	10.50	5	20	1	141	0.18	7.0
BZT52C11	11VZ	10.45	11.00	11.55	5	20	1	141	0.09	8.0
BZT52C12	12VZ	11.40	12.00	12.60	5	25	1	141	0.09	8.0
BZT52C13	13VZ	12.35	13.00	13.65	5	30	1	160	0.09	8.0
BZT52C15	15VZ	14.25	15.00	15.75	5	30	1	188	0.045	10.5
BZT52C16	16VZ	15.20	16.00	16.80	5	40	1	188	0.045	11.2
BZT52C18	18VZ	17.10	18.00	18.90	5	45	1	212	0.045	12.6
BZT52C20	20VZ	19.00	20.00	21.00	5	55	1	212	0.045	14.0
BZT52C22	22VZ	20.90	22.00	23.10	5	55	1	235	0.045	15.4
BZT52C24	24VZ	22.80	24.00	25.20	5	70	1	235	0.045	16.8
BZT52C27	27VZ	25.65	27.00	28.35	2	80	0.5	282	0.045	18.9
BZT52C30	30VZ	28.50	30.00	31.50	2	80	0.5	282	0.045	21.0
BZT52C33	33VZ	31.35	33.00	34.65	2	80	0.5	306	0.045	23.0
BZT52C36	36VZ	34.20	36.00	37.80	2	90	0.5	329	0.045	25.2
BZT52C39	39VZ	37.05	39.00	40.95	2	130	0.5	329	0.045	27.3
BZT52C43	43VZ	40.85	43.00	45.15	2	150	0.5	353	0.045	30.1
BZT52C47	47VZ	44.65	47.00	49.35	2	170	0.5	353	0.045	33.0
BZT52C51	51VZ	48.45	51.00	53.55	2	180	0.5	376	0.045	35.7
BZT52C56	56VZ	53.20	56.00	58.80	2	200	0.5	400	0.045	39.2
BZT52C62	62VZ	58.90	62.00	65.10	2	215	0.5	423	0.045	43.4
BZT52C68	68VZ	64.60	68.00	71.40	2	240	0.5	447	0.045	47.6
BZT52C75	75VZ	71.25	75.00	78.75	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 ±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 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

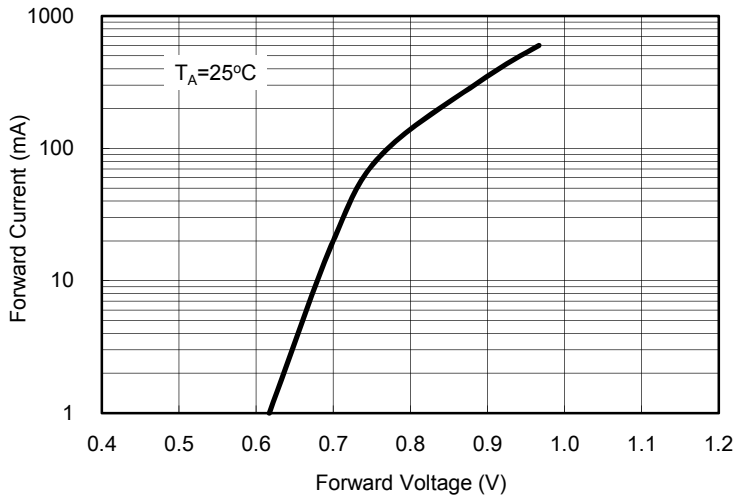


Fig. 2 Zener Breakdown Characteristics

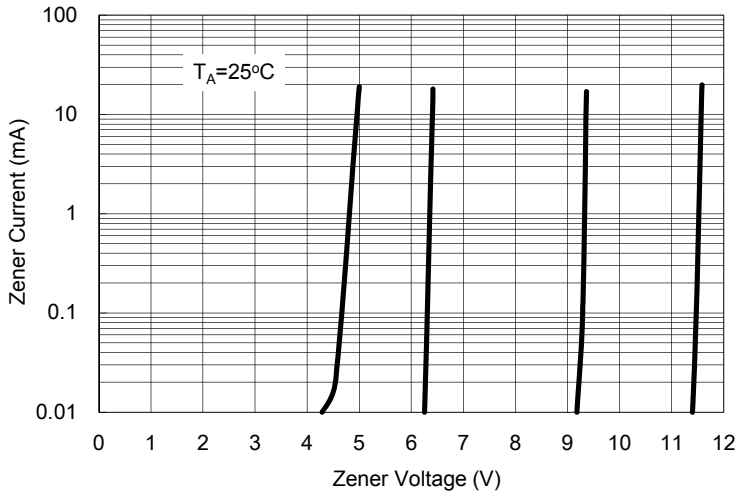


Fig. 3 Zener Breakdown Characteristics

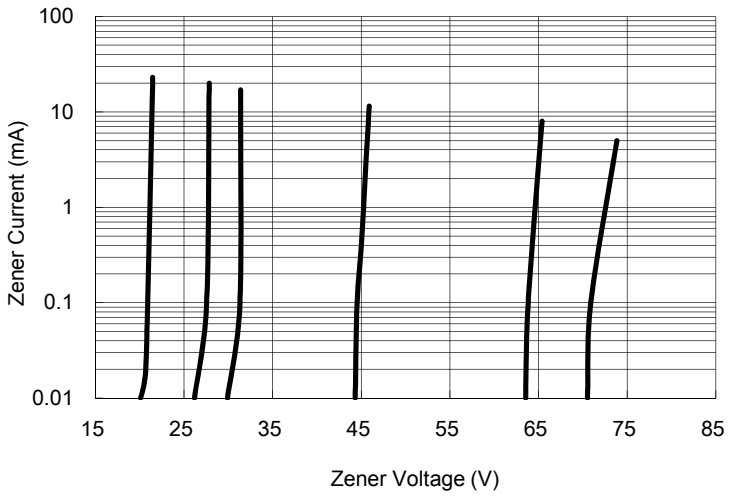


Fig. 4 Power Dissipation Curve

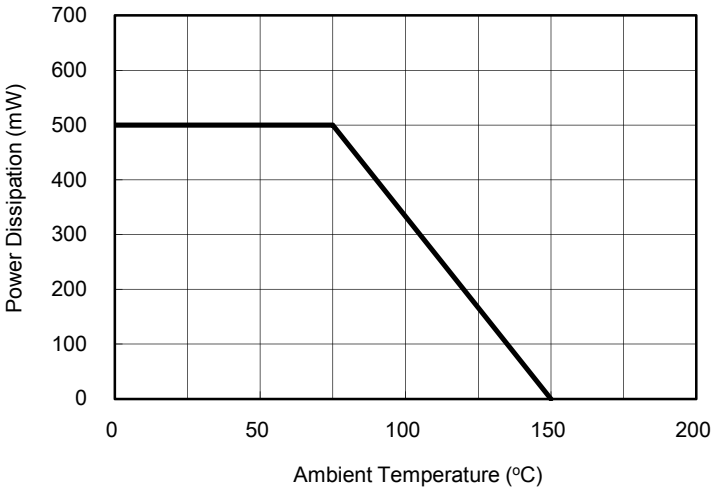


Fig. 5 Typical Capacitance

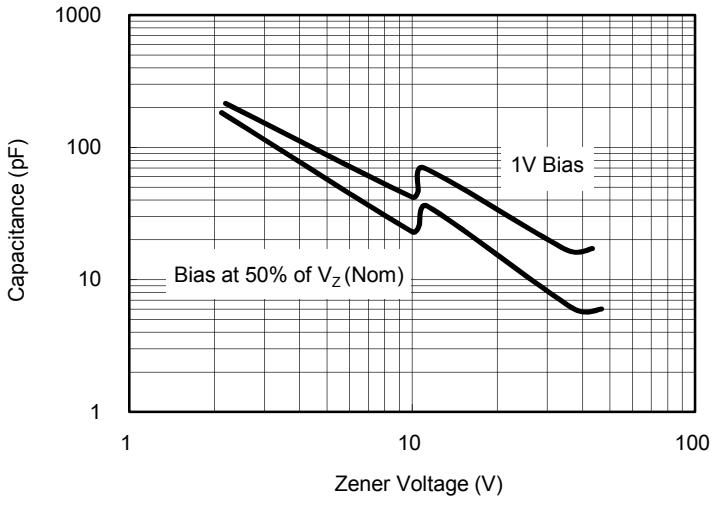
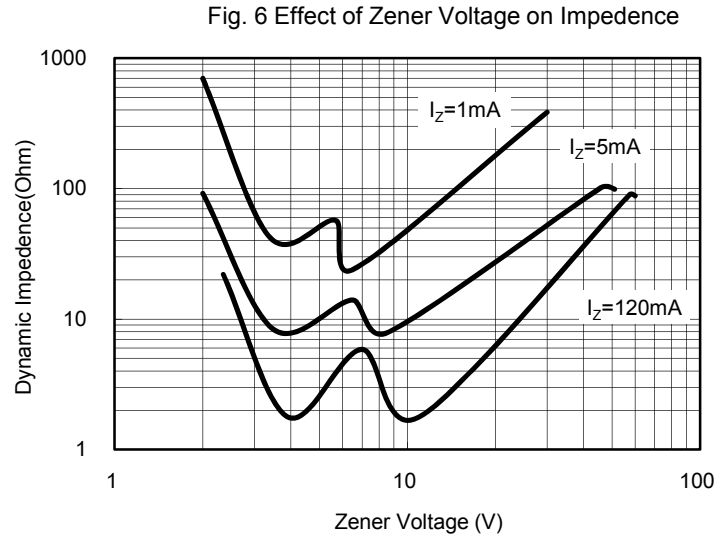


Fig. 6 Effect of Zener Voltage on Impedence



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ORDERING INFORMATION					
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
BZT52Cxxx (Note 1)	(Note 2)	RH	G	SOD-123F	3K / 7" Reel

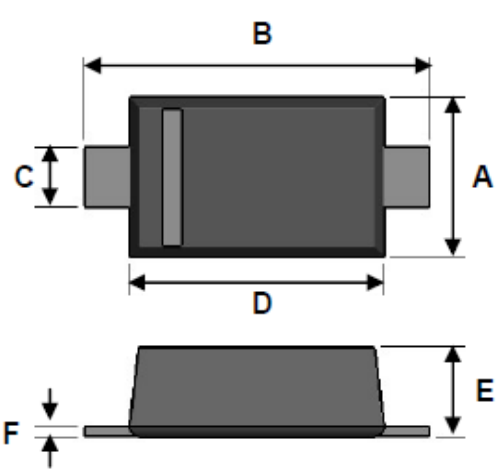
Note 1: "xxx" defines voltage from 2.4V (BZT52C2V4) to 75V (BZT52C75)

Note 2: Manufacture special control, if empty means no special control requirement.

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BZT52C75 RHG	BZT52C75		RH	G	Green compound
BZT52C75-L0 RHG	BZT52C75	L0	RH	G	Green compound
BZT52C75-B0 RHG	BZT52C75	B0	RH	G	Green compound

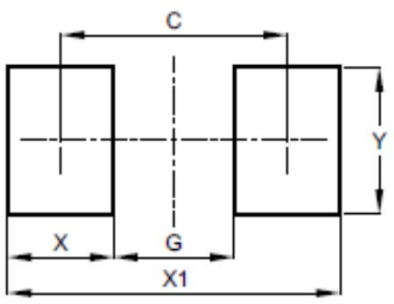
PACKAGE OUTLINE DIMENSIONS

SOD-123F



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.059	0.067
B	3.30	3.90	0.130	0.154
C	0.50	0.70	0.020	0.028
D	2.50	2.70	0.098	0.106
E	0.80	1.15	0.031	0.045
F	0.05	0.20	0.002	0.008

SUGGEST PAD LAYOUT



DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
C	2.86	0.113
G	1.52	0.060
X	1.34	0.053
X1	4.20	0.165
Y	1.80	0.071

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