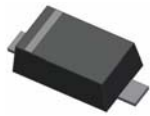


**Small Signal Diode**

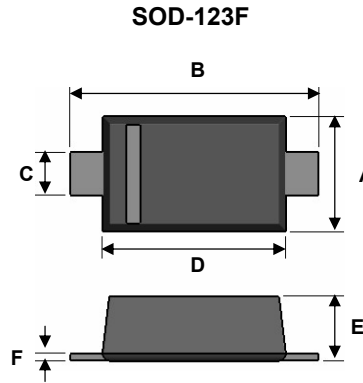


**Features**

- ✧ Wide zener voltage range selection : 2.4V to 75V
- ✧ Vz Tolerance Selection of ±2%
- ✧ Moisture sensitivity level 1
- ✧ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧ Pb free version and RoHS compliant
- ✧ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

**Mechanical Data**

- ✧ Case : Flat lead SOD-123 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±0.5 mg



Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.5	1.7	0.059	0.067
B	3.3	3.7	0.130	0.146
C	0.5	0.7	0.020	0.028
D	2.5	2.7	0.098	0.106
E	0.8	1.0	0.031	0.039
F	0.05	0.2	0.002	0.008

**Ordering Information**

Part No.	Package	Packing
BZT52Bxx RH	SOD-123F	3Kpcs / 7" Reel

**Maximum Ratings and Electrical Characteristics**

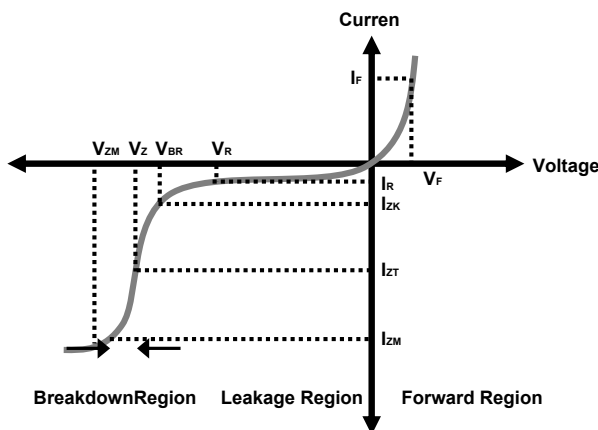
Rating at 25°C ambient temperature unless otherwise specified.

**Maximum Ratings**

Type Number	Symbol	Value	Units
Power Dissipation	$P_D$	500	mW
Forward Voltage	$V_F$ (at $I_F=10mA$ )	1	V
Thermal Resistance (Junction to Ambient)	$R_{\theta JA}$ (Note 1)	350	°C/W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 150	°C

Notes: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  $I_{ZM}$

**Small Signal Diode**

**Electrical Characteristics**

Ta = 25°C unless otherwise noted

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

Part Number	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> (μA) Max	V <sub>R</sub> (V)
	Nom	Min	Max						
BZT52B2V4	2.4	2.35	2.45	5	100	1	564	45	1
BZT52B2V7	2.7	2.65	2.75	5	100	1	564	18	1
BZT52B3V0	3	2.94	3.06	5	100	1	564	9	1
BZT52B3V3	3.3	3.23	3.37	5	95	1	564	4.5	1
BZT52B3V6	3.6	3.53	3.67	5	90	1	564	4.5	1
BZT52B3V9	3.9	3.82	3.98	5	90	1	564	2.7	1
BZT52B4V3	4.3	4.21	4.39	5	90	1	564	2.7	1
BZT52B4V7	4.7	4.61	4.79	5	80	1	470	2.7	2
BZT52B5V1	5.1	5	5.2	5	60	1	451	1.8	2
BZT52B5V6	5.6	5.49	5.71	5	40	1	376	0.9	2
BZT52B6V2	6.2	6.08	6.32	5	10	1	141	2.7	4
BZT52B6V8	6.8	6.66	6.94	5	15	1	75	1.8	4
BZT52B7V5	7.5	7.35	7.65	5	15	1	75	0.9	5
BZT52B8V2	8.2	8.04	8.36	5	15	1	75	0.63	5
BZT52B9V1	9.1	8.92	9.28	5	15	1	94	0.45	6
BZT52B10	10	9.8	10.2	5	20	1	141	0.18	7
BZT52B11	11	10.78	11.22	5	20	1	141	0.09	8
BZT52B12	12	11.76	12.24	5	25	1	141	0.09	8
BZT52B13	13	12.74	13.26	5	30	1	160	0.09	8
BZT52B15	15	14.7	15.3	5	30	1	188	0.045	10.5
BZT52B16	16	15.68	16.32	5	40	1	188	0.045	11.2
BZT52B18	18	17.64	18.36	5	45	1	212	0.045	12.6
BZT52B20	20	19.6	20.4	5	55	1	212	0.045	14
BZT52B22	22	21.56	22.44	5	55	1	235	0.045	15.4
BZT52B24	24	23.52	24.48	5	70	1	235	0.045	16.8
BZT52B27	27	26.46	27.54	2	80	0.5	282	0.045	18.9
BZT52B30	30	29.4	30.6	2	80	0.5	282	0.045	21
BZT52B33	33	32.34	33.66	2	80	0.5	306	0.045	23
BZT52B36	36	35.28	36.72	2	90	0.5	329	0.045	25.2
BZT52B39	39	38.22	39.78	2	130	0.5	329	0.045	27.3
BZT52B43	43	42.14	43.86	2	150	0.5	353	0.045	30.1
BZT52B47	47	46.06	47.94	2	170	0.5	353	0.045	33
BZT52B51	51	49.98	52.02	2	180	0.5	376	0.045	35.7
BZT52B56	56	54.88	57.12	2	200	0.5	400	0.045	39.2
BZT52B62	62	60.76	63.24	2	215	0.5	423	0.045	43.4
BZT52B68	68	66.64	69.36	2	240	0.5	447	0.045	47.6
BZT52B75	75	73.5	76.5	2	255	0.5	470	0.045	52.5

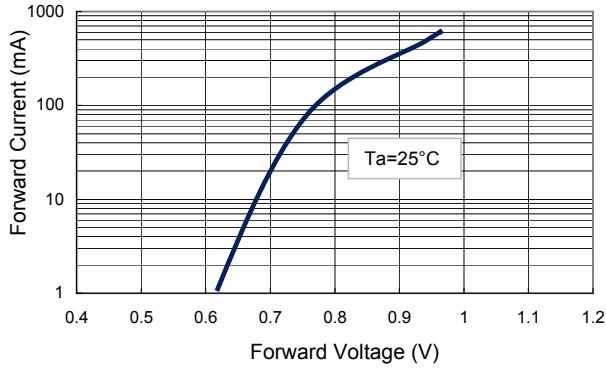
**Notes:**

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>.

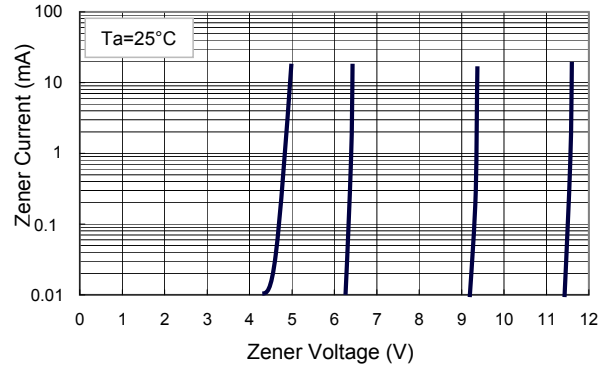
**Small Signal Diode**

**Rating and Sharacteristic Curves**

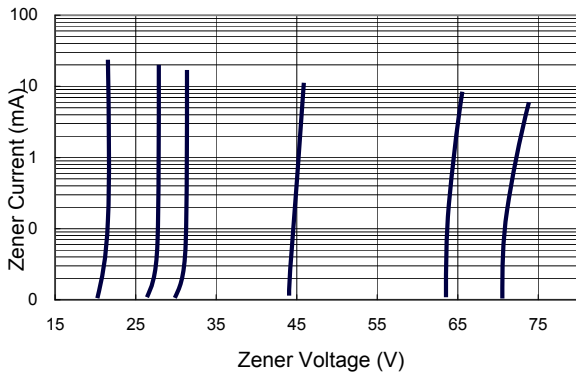
**FIG 1 Typical Forward Characteristics**



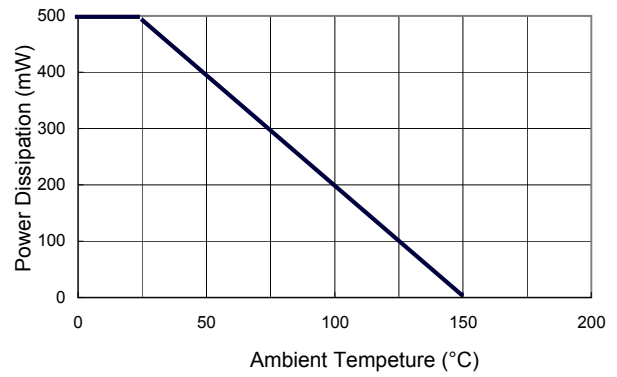
**FIG 2 Zener Breakdown Characteristics**



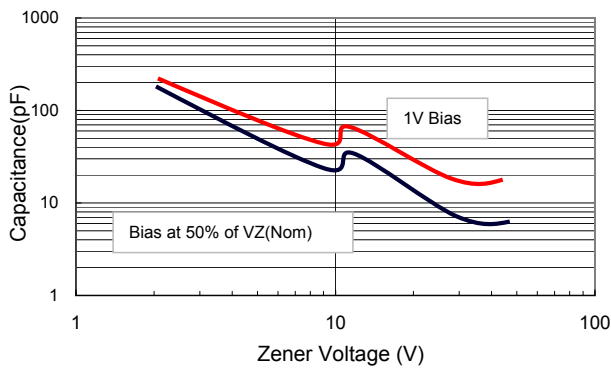
**FIG 3 Zener Breakdown Characteristics**



**FIG 4 Admissible Power Dissipation Curve**



**FIG 5 Typical Capacitance**



**FIG 6 Effect of Zener Voltage on Impedence**

