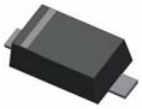
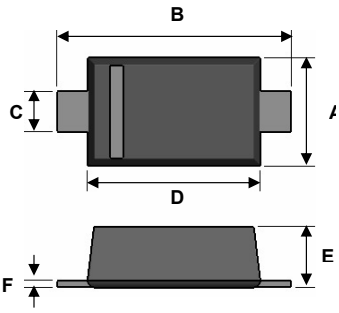
TAIWAN SEMICONDUCTOR

BZT52B2V4-BZT52B75
500mW, 2% Tolerance SMD Zener Diode

Small Signal Diode



SOD-123F



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

Features

- ✧Wide zener voltage range selection : 2.4V to 75V
- ✧V_Z 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

Ordering Information

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

Maximum Ratings and Electrical Characteristics

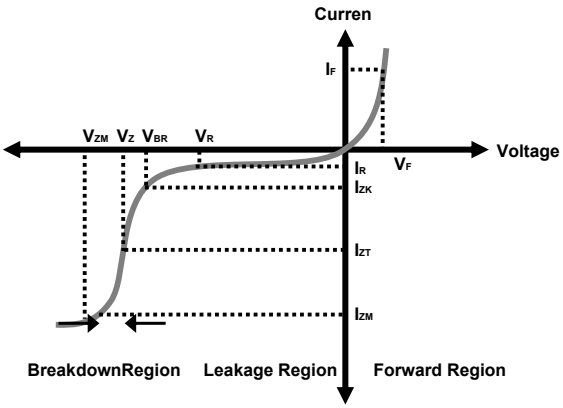
Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number		Symbol	Value	Units
Power Dissipation		P_D	500	mW
Forward Voltage	I_F=10mA	V_F	1	V
Thermal Resistance (Junction to Ambient)	(Note 1)	RθJA	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}

TAIWAN SEMICONDUCTOR

BZT52B2V4-BZT52B75
500mW, 2% Tolerance SMD Zener Diode

Small Signal Diode

Electrical Characteristics

Ta = 25°C unless otherwise noted

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

Part Number	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)
	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_Z**) is tested under pulse condition of 10ms.
2. The device numbers listed have a standard tolerance on the nominal zener voltage o**±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}**.

Small Signal Diode

Rating and Sharacteristic Curves

FIG 1 Typical Forward Characteristics

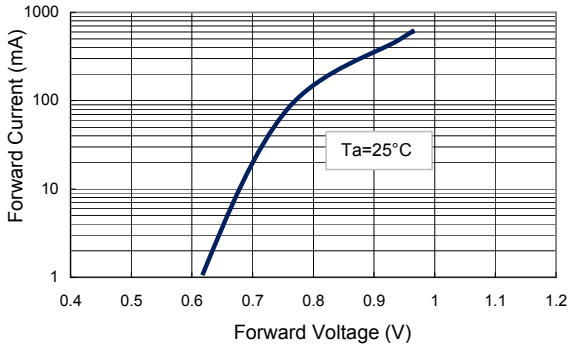


FIG 2 Zener Breakdown Characteristics

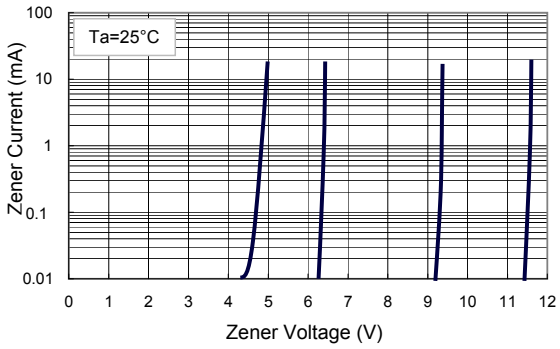


FIG 3 Zener Breakdown Characteristics

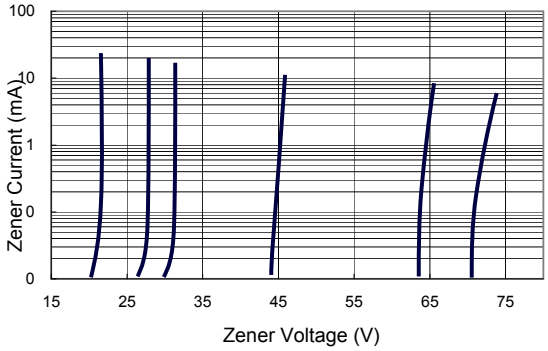


FIG 4 Admissible Power Disspation Curve

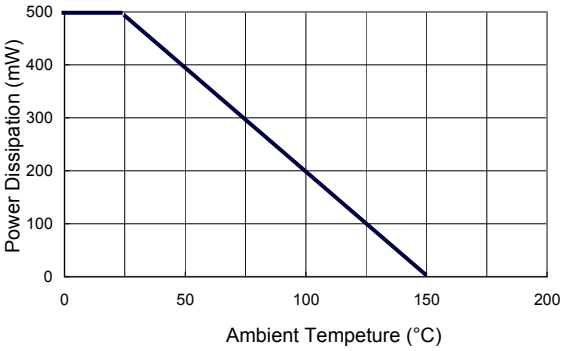


FIG 5 Typical Capacitance

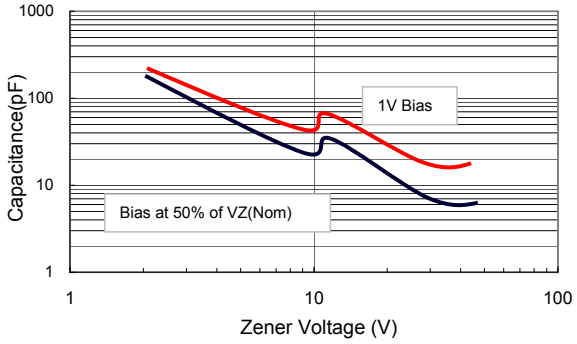


FIG 6 Effect of Zener Voltage on Impedence