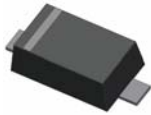


Small Signal Diode



Features

- ✧ Wide zener voltage range selection : 2.4V to 75V
- ✧ V_Z Tolerance Selection of $\pm 2\%$
- ✧ 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-323 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 $\pm$ 0.5 mg

Ordering Information

Part No.	Package	Packing
BZT52BxxS RR	SOD-323F	3Kpcs / 7" Reel

Maximum Ratings and Electrical Characteristics

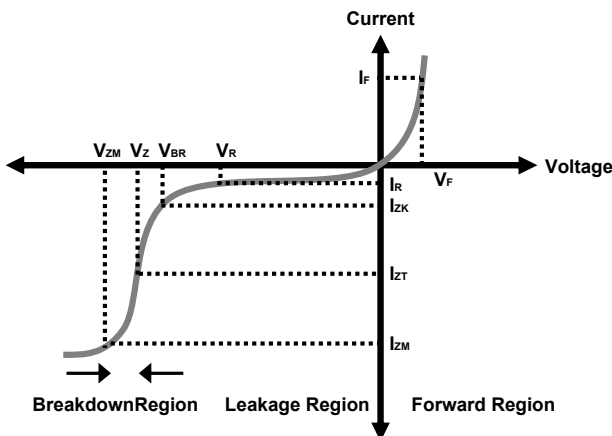
Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Power Dissipation	P_D	200	mW
Forward Voltage	$I_F = 10\text{mA}$ V_F	1	V
Thermal Resistance (Junction to Ambient)	(Note 1) $R_{\theta JA}$	625	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to + 150	°C

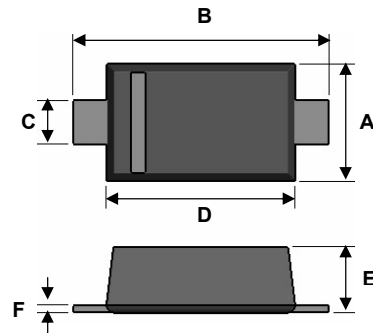
Notes:1. Valid provided that electrodes are kept at ambient temperature

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}

SOD-323F



Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.15	1.35	0.045	0.053
B	2.30	2.70	0.091	0.106
C	0.25	0.40	0.010	0.016
D	1.60	1.80	0.063	0.071
E	0.80	1.00	0.031	0.039
F	0.05	0.20	0.002	0.008

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						
BZT52B2V4S	2.35	2.4	2.45	5	100	1	564	45	1
BZT52B2V7S	2.65	2.7	2.75	5	100	1	564	18	1
BZT52B3V0S	2.94	3	3.06	5	100	1	564	9	1
BZT52B3V3S	3.23	3.3	3.37	5	95	1	564	4.5	1
BZT52B3V6S	3.53	3.6	3.67	5	90	1	564	4.5	1
BZT52B3V9S	3.82	3.9	3.98	5	90	1	564	2.7	1
BZT52B4V3S	4.21	4.3	4.39	5	90	1	564	2.7	1
BZT52B4V7S	4.61	4.7	4.79	5	80	1	470	2.7	2
BZT52B5V1S	5	5.1	5.2	5	60	1	451	1.8	2
BZT52B5V6S	5.49	5.6	5.71	5	40	1	376	0.9	2
BZT52B6V2S	6.08	6.2	6.32	5	10	1	141	2.7	4
BZT52B6V8S	6.66	6.8	6.94	5	15	1	75	1.8	4
BZT52B7V5S	7.35	7.5	7.65	5	15	1	75	0.9	5
BZT52B8V2S	8.04	8.2	8.36	5	15	1	75	0.63	5
BZT52B9V1S	8.92	9.1	9.28	5	15	1	94	0.45	6
BZT52B10S	9.8	10	10.2	5	20	1	141	0.18	7
BZT52B11S	10.78	11	11.22	5	20	1	141	0.09	8
BZT52B12S	11.76	12	12.24	5	25	1	141	0.09	8
BZT52B13S	12.74	13	13.26	5	30	1	160	0.09	8
BZT52B15S	14.7	15	15.3	5	30	1	188	0.045	10.5
BZT52B16S	15.68	16	16.32	5	40	1	188	0.045	11.2
BZT52B18S	17.64	18	18.36	5	45	1	212	0.045	12.6
BZT52B20S	19.60	20	20.40	5	55	1	212	0.045	14.0
BZT52B22S	21.56	22	22.44	5	55	1	235	0.045	15.4
BZT52B24S	23.52	24	24.48	5	70	1	235	0.045	16.8
BZT52B27S	26.46	27	27.54	2	80	0.5	282	0.045	18.9
BZT52B30S	29.40	30	30.60	2	80	0.5	282	0.045	21.0
BZT52B33S	32.34	33	33.66	2	80	0.5	306	0.045	23.0
BZT52B36S	35.28	36	36.72	2	90	0.5	329	0.045	25.2
BZT52B39S	38.22	39	39.78	2	130	0.5	329	0.045	27.3
BZT52B43S	42.14	43	43.86	2	150	0.5	353	0.045	30.1
BZT52B47S	46.06	47	47.94	2	170	0.5	353	0.045	33.0
BZT52B51S	49.98	51	52.02	2	180	0.5	376	0.045	35.7
BZT52B56S	54.88	56	57.12	2	200	0.5	400	0.045	39.2
BZT52B62S	60.76	62	63.24	2	215	0.5	423	0.045	43.4
BZT52B68S	66.64	68	69.36	2	240	0.5	447	0.045	47.6
BZT52B75S	73.50	75	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 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_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

Small Signal Diode

Rating and Sharacteristic Curves

FIG 1 Typical Forward Characteristics

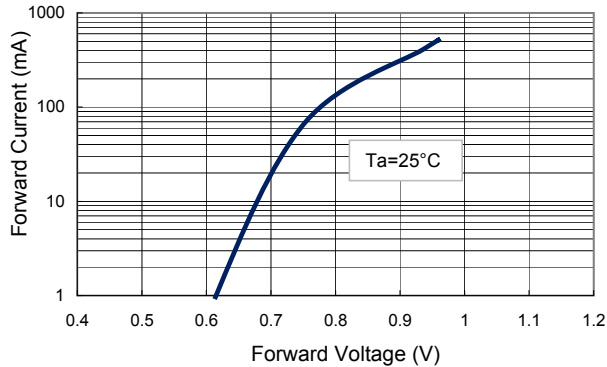


FIG 2 Zener Breakdown Characteristics

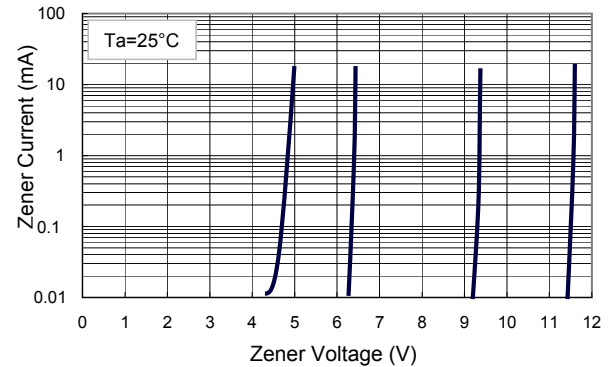


FIG 3 Zener Breakdown Characteristics

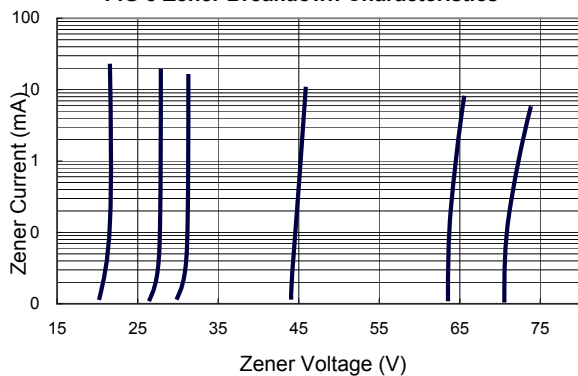


FIG 4 Admissible Power Dissipation Curve

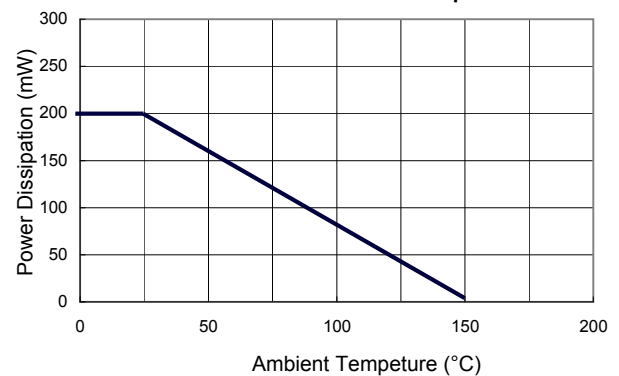


FIG 5 Typical Capacitance

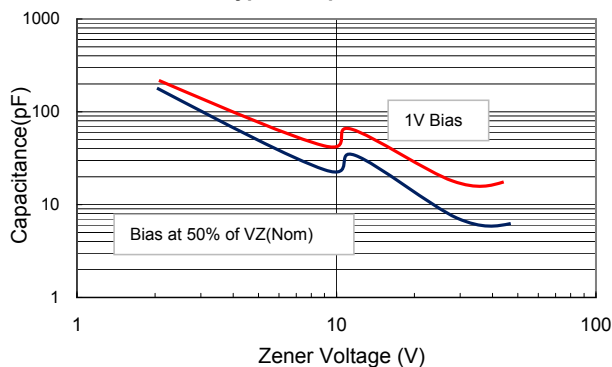


FIG 6 Effect of Zener Voltage on Impedance

