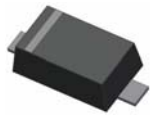


Small Signal Diode



Features

- ✧ Wide zener voltage range selection : 2.4V to 75V
- ✧ V_Z Tolerance Selection of $\pm 5\%$
- ✧ 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

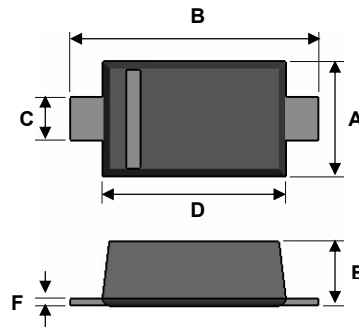
Mechanical Data

- ✧ 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
BZT52CxxS RR	SOD-323F	3Kpcs/7" Reel

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

Maximum Ratings and Electrical Characteristics

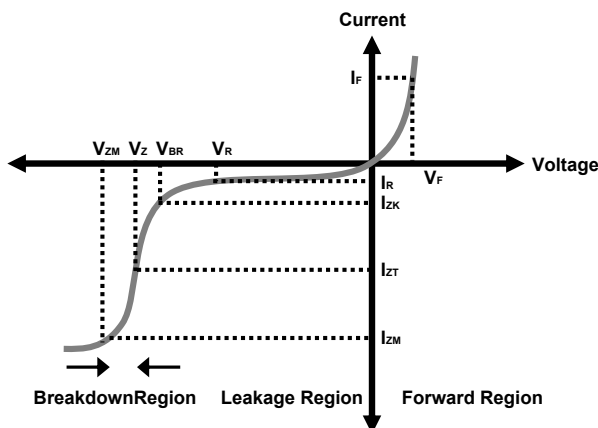
Rating at 25°C ambient temperature unless otherwise specified.

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}

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						
BZT52C2V4S	2.28	2.4	2.52	5	100	1	564	45	1
BZT52C2V7S	2.57	2.7	2.84	5	100	1	564	18	1
BZT52C3V0S	2.85	3.0	3.15	5	100	1	564	9	1
BZT52C3V3S	3.14	3.3	3.47	5	95	1	564	4.5	1
BZT52C3V6S	3.42	3.6	3.78	5	90	1	564	4.5	1
BZT52C3V9S	3.71	3.9	4.10	5	90	1	564	2.7	1
BZT52C4V3S	4.09	4.3	4.52	5	90	1	564	2.7	1
BZT52C4V7S	4.47	4.7	4.94	5	80	1	470	2.7	2
BZT52C5V1S	4.85	5.1	5.36	5	60	1	451	1.8	2
BZT52C5V6S	5.32	5.6	5.88	5	40	1	376	0.9	2
BZT52C6V2S	5.89	6.2	6.51	5	10	1	141	2.7	4
BZT52C6V8S	6.46	6.8	7.14	5	15	1	75	1.8	4
BZT52C7V5S	7.11	7.5	7.86	5	15	1	75	0.9	5
BZT52C8V2S	7.79	8.2	8.61	5	15	1	75	0.63	5
BZT52C9V1S	8.65	9.1	9.56	5	15	1	94	0.45	6
BZT52C10S	9.50	10	10.50	5	20	1	141	0.18	7
BZT52C11S	10.45	11	11.55	5	20	1	141	0.09	8
BZT52C12S	11.40	12	12.60	5	25	1	141	0.09	8
BZT52C13S	12.35	13	13.65	5	30	1	160	0.09	8
BZT52C15S	14.25	15	15.75	5	30	1	188	0.045	10.5
BZT52C16S	15.20	16	16.80	5	40	1	188	0.045	11.2
BZT52C18S	17.10	18	18.90	5	45	1	212	0.045	12.6
BZT52C20S	19.00	20	21.00	5	55	1	212	0.045	14.0
BZT52C22S	20.90	22	23.10	5	55	1	235	0.045	15.4
BZT52C24S	22.80	24	25.20	5	70	1	235	0.045	16.8
BZT52C27S	25.65	27	28.35	2	80	0.5	282	0.045	18.9
BZT52C30S	28.50	30	31.50	2	80	0.5	282	0.045	21.0
BZT52C33S	31.35	33	34.65	2	80	0.5	306	0.045	23.0
BZT52C36S	34.20	36	37.80	2	90	0.5	329	0.045	25.2
BZT52C39S	37.05	39	40.95	2	130	0.5	329	0.045	27.3
BZT52C43S	40.85	43	45.15	2	150	0.5	353	0.045	30.1
BZT52C47S	44.65	47	49.35	2	170	0.5	353	0.045	33.0
BZT52C51S	48.45	51	53.55	2	180	0.5	376	0.045	35.7
BZT52C56S	53.20	56	58.80	2	200	0.5	400	0.045	39.2
BZT52C62S	58.90	62	65.10	2	215	0.5	423	0.045	43.4
BZT52C68S	64.60	68	71.40	2	240	0.5	447	0.045	47.6
BZT52C75S	71.25	75	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 nominal 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}.

Small Signal Diode

Rating and Sharacteristic Curves

FIG 1 Typical Forward Characteristics

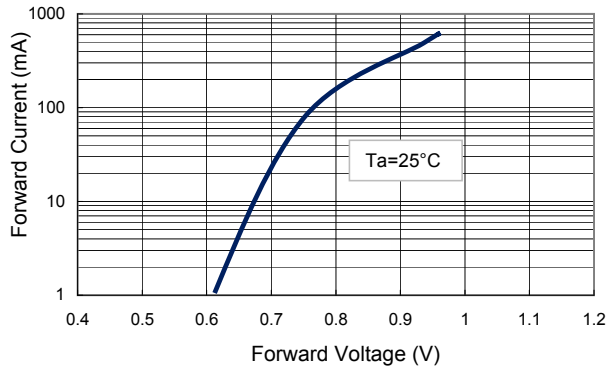


FIG 2 Zener Breakdown Characteristics

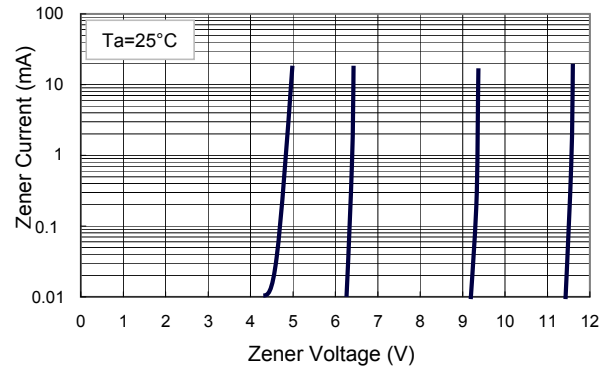


FIG 3 Zener Breakdown Characteristics

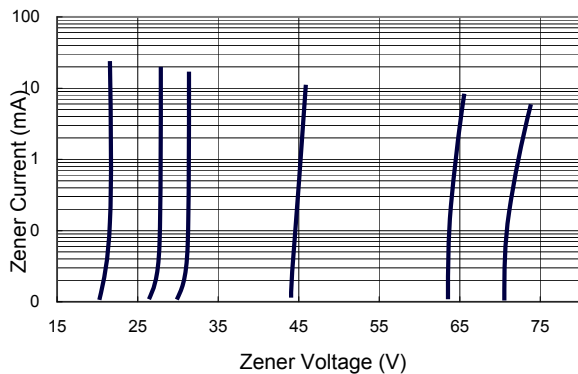


FIG 4 Admissible Power Dissipation Curve

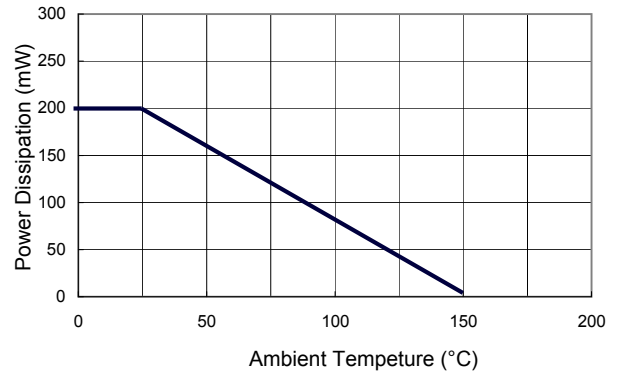


FIG 5 Typical Capacitance

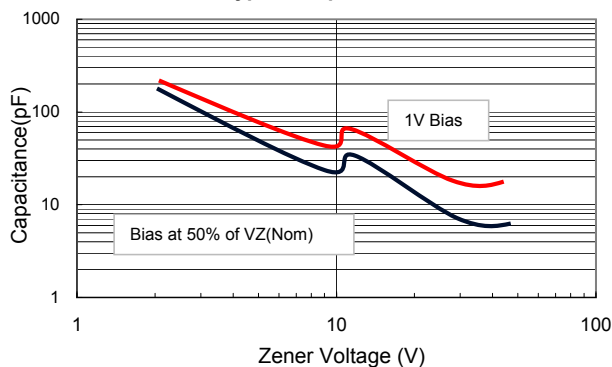


FIG 6 Effect of Zener Voltage on Impedance

