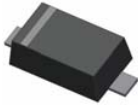


Small Signal Diode



Features

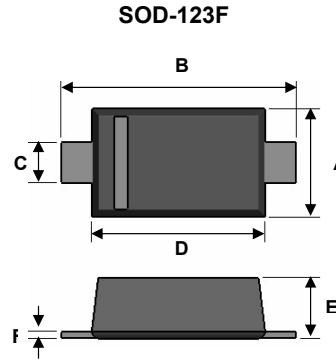
- ✧Wide zener voltage range selection : 2.4V to 75V
- ✧Vz Tolerance Selection of ±5%
- ✧Moisture sensitivity level 1
- ✧Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧Pb free version and RoHS compliant
- ✧Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

- ✧Case : Flat lead SOD-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



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

Maximum Ratings and Electrical Characteristics

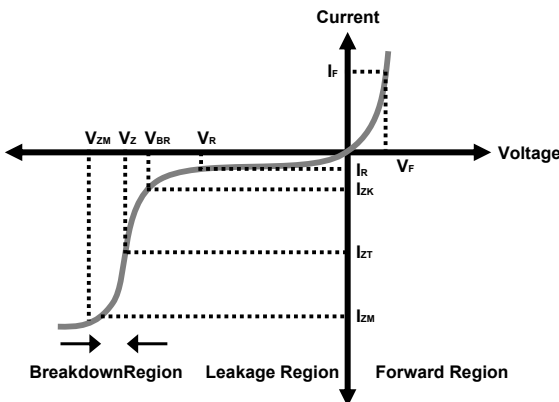
Rating at 25°C ambient temperature unless otherwise specified.

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_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						
BZT52C2V4	2.4	2.28	2.52	5	100	1	564	45	1
BZT52C2V7	2.7	2.57	2.84	5	100	1	564	18	1
BZT52C3V0	3	2.85	3.15	5	100	1	564	9	1
BZT52C3V3	3.3	3.14	3.47	5	95	1	564	4.5	1
BZT52C3V6	3.6	3.42	3.78	5	90	1	564	4.5	1
BZT52C3V9	3.9	3.71	4.1	5	90	1	564	2.7	1
BZT52C4V3	4.3	4.09	4.52	5	90	1	564	2.7	1
BZT52C4V7	4.7	4.47	4.94	5	80	1	470	2.7	2
BZT52C5V1	5.1	4.85	5.36	5	60	1	451	1.8	2
BZT52C5V6	5.6	5.32	5.88	5	40	1	376	0.9	2
BZT52C6V2	6.2	5.89	6.51	5	10	1	141	2.7	4
BZT52C6V8	6.8	6.46	7.14	5	15	1	75	1.8	4
BZT52C7V5	7.5	7.11	7.86	5	15	1	75	0.9	5
BZT52C8V2	8.2	7.48	8.61	5	15	1	75	0.63	5
BZT52C9V1	9.1	8.65	9.56	5	15	1	94	0.45	6
BZT52C10	10	9.5	10.5	5	20	1	141	0.18	7
BZT52C11	11	10.45	11.55	5	20	1	141	0.09	8
BZT52C12	12	11.4	12.6	5	25	1	141	0.09	8
BZT52C13	13	12.35	13.65	5	30	1	160	0.09	8
BZT52C15	15	14.25	15.75	5	30	1	188	0.045	10.5
BZT52C16	16	15.2	16.8	5	40	1	188	0.045	11.2
BZT52C18	18	17.1	18.9	5	45	1	212	0.045	12.6
BZT52C20	20	19	21	5	55	1	212	0.045	14
BZT52C22	22	20.9	23.1	5	55	1	235	0.045	15.4
BZT52C24	24	22.8	25.2	5	70	1	235	0.045	16.8
BZT52C27	27	25.65	28.35	2	80	0.5	282	0.045	18.9
BZT52C30	30	28.5	31.5	2	80	0.5	282	0.045	21
BZT52C33	33	31.35	34.65	2	80	0.5	306	0.045	23
BZT52C36	36	34.2	37.8	2	90	0.5	329	0.045	25.2
BZT52C39	39	37.05	40.95	2	130	0.5	329	0.045	27.3
BZT52C43	43	40.85	45.15	2	150	0.5	353	0.045	30.1
BZT52C47	47	44.65	49.35	2	170	0.5	353	0.045	33
BZT52C51	51	48.45	53.55	2	180	0.5	376	0.045	35.7
BZT52C56	56	53.2	58.8	2	200	0.5	400	0.045	39.2
BZT52C62	62	58.9	65.1	2	215	0.5	423	0.045	43.4
BZT52C68	68	64.6	71.4	2	240	0.5	447	0.045	47.6
BZT52C75	75	71.25	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

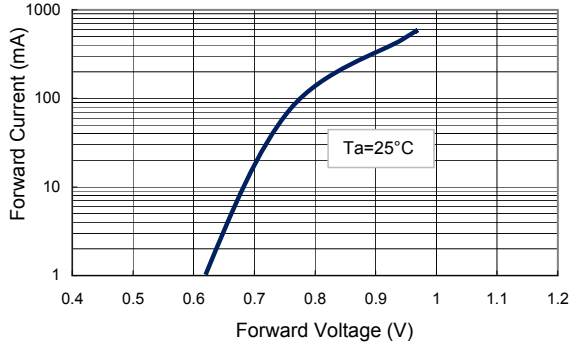


FIG 2 Zener Breakdown Characteristics

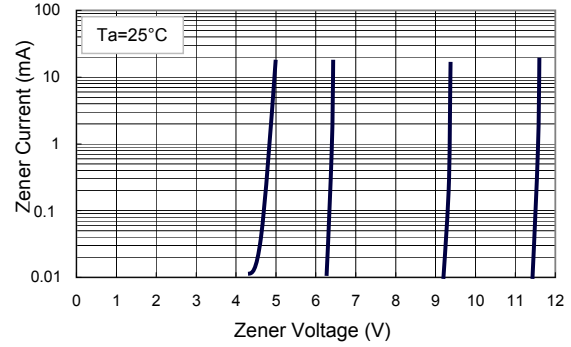


FIG 3 Zener Breakdown Characteristics

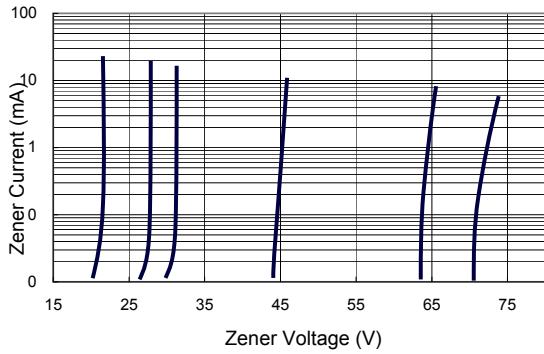


FIG 4 Admissible Power Dissipation Curve

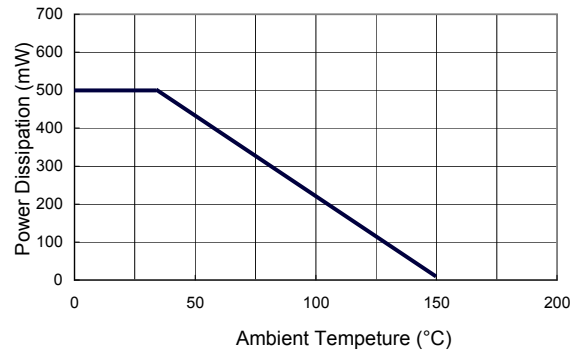


FIG 5 Typical Capacitance

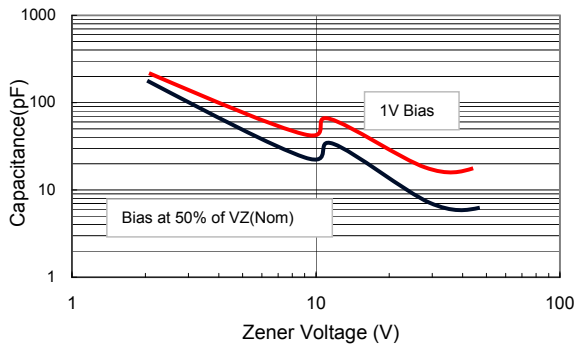


FIG 6 Effect of Zener Voltage on Impedance

