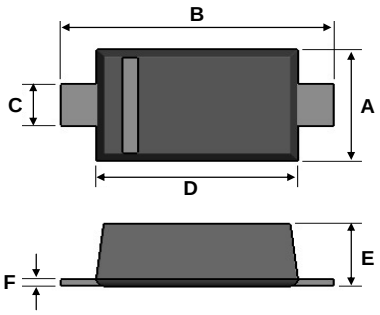
TAIWAN SEMICONDUCTOR

BZT52C2V4-BZT52C75
500mW,5% 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	3.85	0.130	0.152
C	0.5	0.7	0.020	0.028
D	2.5	2.7	0.098	0.106
E	0.8	1.15	0.031	0.045
F	0.05	0.2	0.002	0.008

Features

- ✧Wide zener voltage range selection : 2.4V to 75V
- ✧V_Z Tolerance Selection of ±5%
- ✧Moisture sensitivity level 1
- ✧Matte Tin(Sn) lead finish
- ✧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

Package	Part No.	Packing
SOD-123F	BZT52Cxx RH	3Kpcs / 7" Reel
SOD-123F	BZT52Cxx RHG	3Kpcs / 7" Reel

Maximum Ratings and Electrical Characteristics

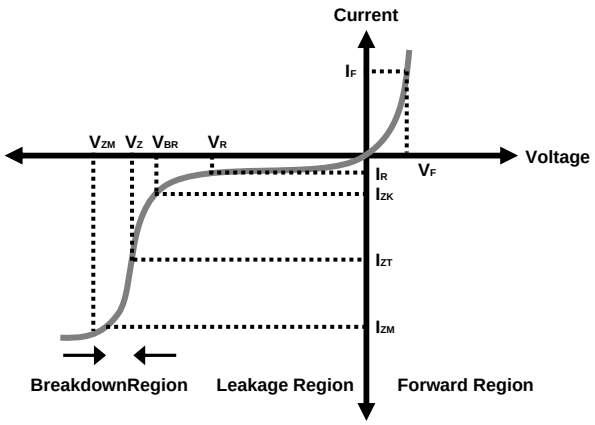
Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Power Dissipation @ T_L=75°C (Lead Temperature)	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}

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Electrical Characteristics

Ta = 25°C unless otherwise noted

VF Forward Volatge = 1 V Maximum @ IF = 10mA for all part numbers

Part Number	Device Marking	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)
		Min	Nom	Max						
BZT52C2V4	2V4Z	2.28	2.40	2.52	5	100	1	564	45	1
BZT52C2V7	2V7Z	2.57	2.70	2.84	5	100	1	564	18	1
BZT52C3V0	3V0Z	2.85	3.00	3.15	5	100	1	564	9	1
BZT52C3V3	3V3Z	3.14	3.30	3.47	5	95	1	564	4.5	1
BZT52C3V6	3V6Z	3.42	3.60	3.78	5	90	1	564	4.5	1
BZT52C3V9	3V9Z	3.71	3.90	4.10	5	90	1	564	2.7	1
BZT52C4V3	4V3Z	4.09	4.30	4.52	5	90	1	564	2.7	1
BZT52C4V7	4V7Z	4.47	4.70	4.94	5	80	1	470	2.7	2.0
BZT52C5V1	5V1Z	4.85	5.10	5.36	5	60	1	451	1.8	2.0
BZT52C5V6	5V6Z	5.32	5.60	5.88	5	40	1	376	0.9	2.0
BZT52C6V2	6V2Z	5.89	6.20	6.51	5	10	1	141	2.7	4.0
BZT52C6V8	6V8Z	6.46	6.80	7.14	5	15	1	75	1.8	4.0
BZT52C7V5	7V5Z	7.11	7.50	7.86	5	15	1	75	0.9	5.0
BZT52C8V2	8V2Z	7.79	8.20	8.61	5	15	1	75	0.63	5.0
BZT52C9V1	9V1Z	8.65	9.10	9.56	5	15	1	94	0.45	6.0
BZT52C10	10VZ	9.50	10.00	10.50	5	20	1	141	0.18	7.0
BZT52C11	11VZ	10.45	11.00	11.55	5	20	1	141	0.09	8.0
BZT52C12	12VZ	11.40	12.00	12.60	5	25	1	141	0.09	8.0
BZT52C13	13VZ	12.35	13.00	13.65	5	30	1	160	0.09	8.0
BZT52C15	15VZ	14.25	15.00	15.75	5	30	1	188	0.045	10.5
BZT52C16	16VZ	15.20	16.00	16.80	5	40	1	188	0.045	11.2
BZT52C18	18VZ	17.10	18.00	18.90	5	45	1	212	0.045	12.6
BZT52C20	20VZ	19.00	20.00	21.00	5	55	1	212	0.045	14.0
BZT52C22	22VZ	20.90	22.00	23.10	5	55	1	235	0.045	15.4
BZT52C24	24VZ	22.80	24.00	25.20	5	70	1	235	0.045	16.8
BZT52C27	27VZ	25.65	27.00	28.35	2	80	0.5	282	0.045	18.9
BZT52C30	30VZ	28.50	30.00	31.50	2	80	0.5	282	0.045	21.0
BZT52C33	33VZ	31.35	33.00	34.65	2	80	0.5	306	0.045	23.0
BZT52C36	36VZ	34.20	36.00	37.80	2	90	0.5	329	0.045	25.2
BZT52C39	39VZ	37.05	39.00	40.95	2	130	0.5	329	0.045	27.3
BZT52C43	43VZ	40.85	43.00	45.15	2	150	0.5	353	0.045	30.1
BZT52C47	47VZ	44.65	47.00	49.35	2	170	0.5	353	0.045	33.0
BZT52C51	51VZ	48.45	51.00	53.55	2	180	0.5	376	0.045	35.7
BZT52C56	56VZ	53.20	56.00	58.80	2	200	0.5	400	0.045	39.2
BZT52C62	62VZ	58.90	62.00	65.10	2	215	0.5	423	0.045	43.4
BZT52C68	68VZ	64.60	68.00	71.40	2	240	0.5	447	0.045	47.6
BZT52C75	75VZ	71.25	75.00	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 volatge, which results when an ac current having an rms value equal to

Small Signal Diode

Rating and Characteristic Curves

FIG 1 Typical Forward Characteristics

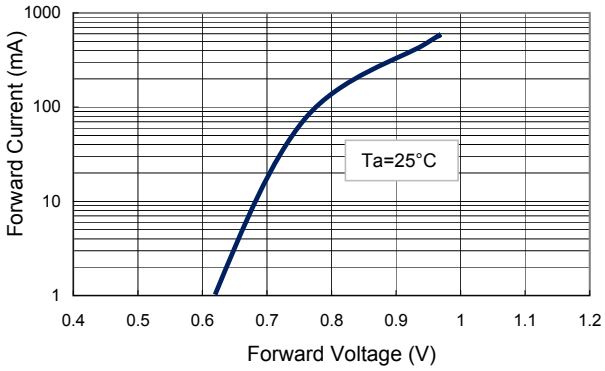

FIG 2 Zener Breakdown Characteristics

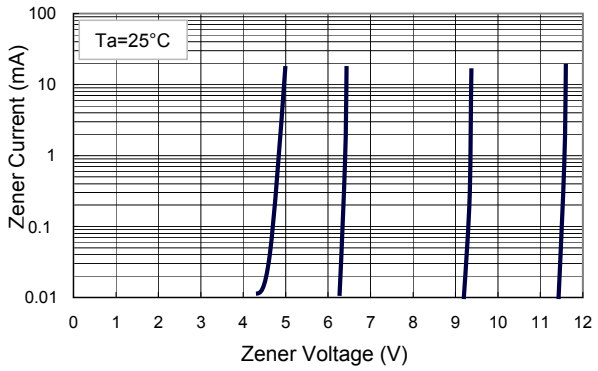

FIG 3 Zener Breakdown Characteristics

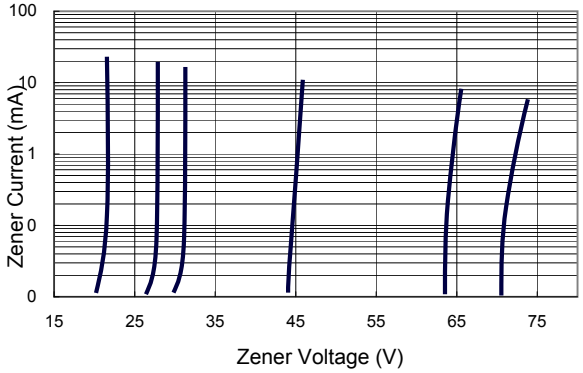

FIG 4 Power Disspation Curve

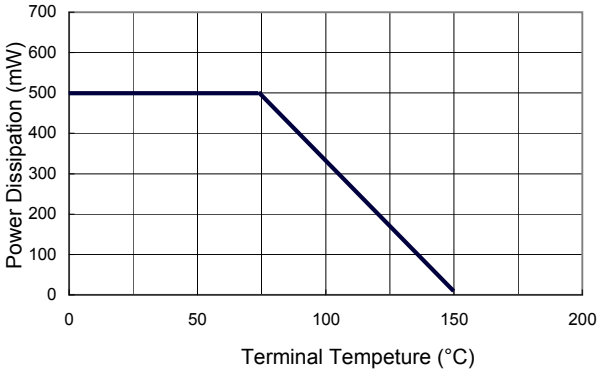

FIG 5 Typical Capacitance

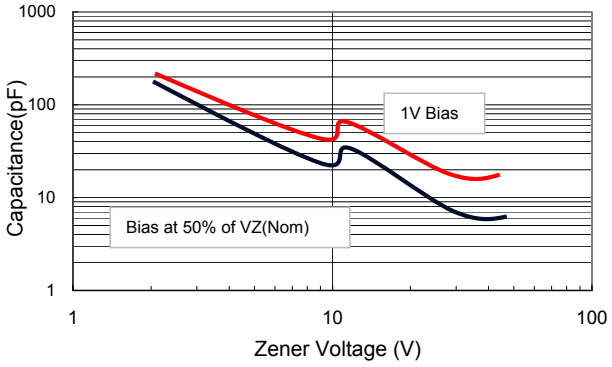

FIG 6 Effect of Zener Voltage on Impedence