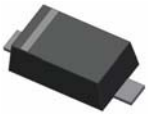
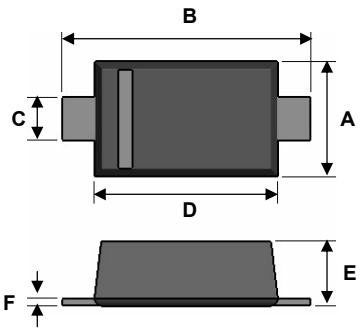
TAIWAN SEMICONDUCTOR

BZT52C2V4S-BZT52C75S
200mW, 5% Tolerance SMD Zener Diode

Small Signal Diode



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

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 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±0.5 mg

Ordering Information

Part No.	Package	Packing
BZT52CxxS RR	SOD-323F	3Kpcs/7" Reel

Maximum Ratings and Electrical Characteristics

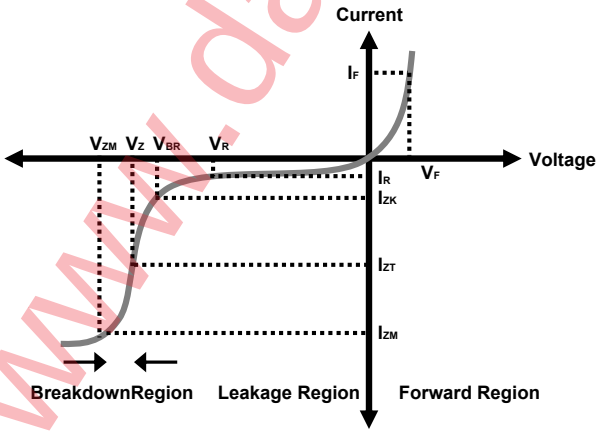
Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Power Dissipation	P_D	200	mW
Forward Voltage I_F=10mA	V_F	1	V
Thermal Resistance (Junction to Ambient) (Note 1)	RθJA	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}

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200mW, 5% Tolerance SMD Zener Diode

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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						
BZT52C2V4S	Z0	2.28	2.40	2.52	5	100	1	564	45	1
BZT52C2V7S	Z1	2.57	2.70	2.84	5	100	1	564	18	1
BZT52C3V0S	Z2	2.85	3.00	3.15	5	100	1	564	9	1
BZT52C3V3S	Z3	3.14	3.30	3.47	5	95	1	564	4.5	1
BZT52C3V6S	Z4	3.42	3.60	3.78	5	90	1	564	4.5	1
BZT52C3V9S	Z5	3.71	3.90	4.10	5	90	1	564	2.7	1
BZT52C4V3S	Z6	4.09	4.30	4.52	5	90	1	564	2.7	1
BZT52C4V7S	Z7	4.47	4.70	4.94	5	80	1	470	2.7	2.0
BZT52C5V1S	Z8	4.85	5.10	5.36	5	60	1	451	1.8	2.0
BZT52C5V6S	Z9	5.32	5.60	5.88	5	40	1	376	0.9	2.0
BZT52C6V2S	ZA	5.89	6.20	6.51	5	10	1	141	2.7	4.0
BZT52C6V8S	ZB	6.46	6.80	7.14	5	15	1	75	1.8	4.0
BZT52C7V5S	ZC	7.11	7.50	7.86	5	15	1	75	0.9	5.0
BZT52C8V2S	ZD	7.79	8.20	8.61	5	15	1	75	0.63	5.0
BZT52C9V1S	ZE	8.65	9.10	9.56	5	15	1	94	0.45	6.0
BZT52C10S	ZF	9.50	10.00	10.50	5	20	1	141	0.18	7.0
BZT52C11S	ZG	10.45	11.00	11.55	5	20	1	141	0.09	8.0
BZT52C12S	ZH	11.40	12.00	12.60	5	25	1	141	0.09	8.0
BZT52C13S	ZJ	12.35	13.00	13.65	5	30	1	160	0.09	8.0
BZT52C15S	ZK	14.25	15.00	15.75	5	30	1	188	0.045	10.5
BZT52C16S	ZL	15.20	16.00	16.80	5	40	1	188	0.045	11.2
BZT52C18S	ZM	17.10	18.00	18.90	5	45	1	212	0.045	12.6
BZT52C20S	ZN	19.00	20.00	21.00	5	55	1	212	0.045	14.0
BZT52C22S	ZP	20.90	22.00	23.10	5	55	1	235	0.045	15.4
BZT52C24S	ZR	22.80	24.00	25.20	5	70	1	235	0.045	16.8
BZT52C27S	ZS	25.65	27.00	28.35	2	80	0.5	282	0.045	18.9
BZT52C30S	ZT	28.50	30.00	31.50	2	80	0.5	282	0.045	21.0
BZT52C33S	ZU	31.35	33.00	34.65	2	80	0.5	306	0.045	23.0
BZT52C36S	ZV	34.20	36.00	37.80	2	90	0.5	329	0.045	25.2
BZT52C39S	ZW	37.05	39.00	40.95	2	130	0.5	329	0.045	27.3
BZT52C43S	ZX	40.85	43.00	45.15	2	150	0.5	353	0.045	30.1
BZT52C47S	ZY	44.65	47.00	49.35	2	170	0.5	353	0.045	33.0
BZT52C51S	Z-	48.45	51.00	53.55	2	180	0.5	376	0.045	35.7
BZT52C56S	Z=	53.20	56.00	58.80	2	200	0.5	400	0.045	39.2
BZT52C62S	Z≡	58.90	62.00	65.10	2	215	0.5	423	0.045	43.4
BZT52C68S	Z>	64.60	68.00	71.40	2	240	0.5	447	0.045	47.6
BZT52C75S	Z<	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 Sharacteristic Curves

FIG 1 Typical Forward Characteristics

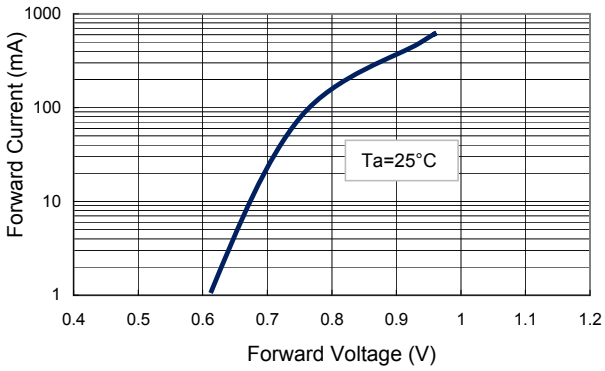


FIG 2 Zener Breakdown Characteristics

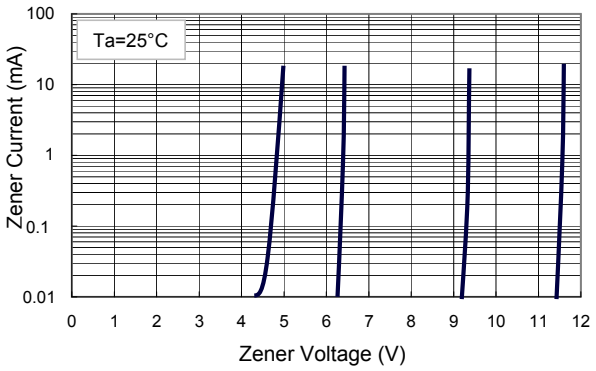


FIG 3 Zener Breakdown Characteristics

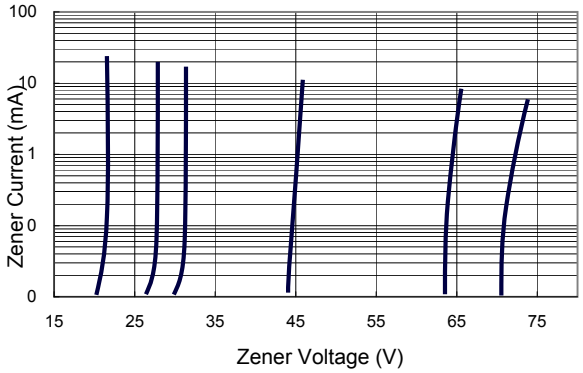


FIG 4 Admissible Power Disspation Curve

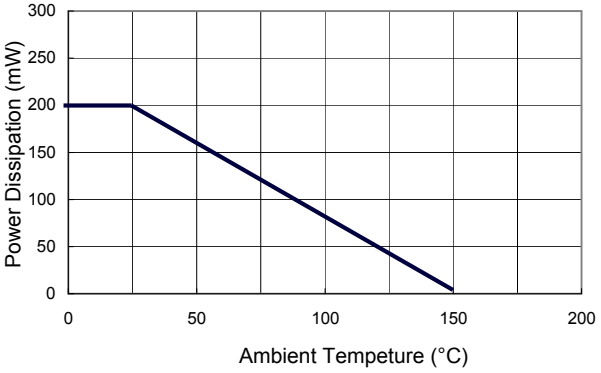


FIG 5 Typical Capacitance

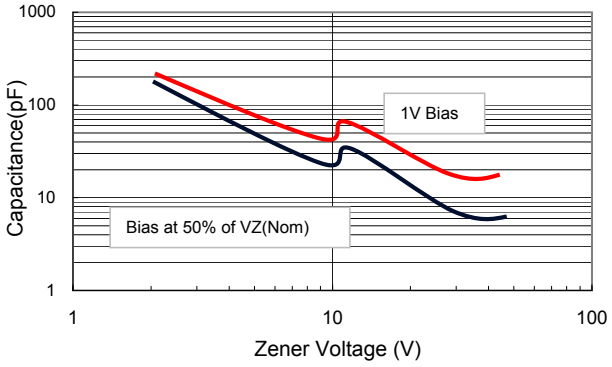
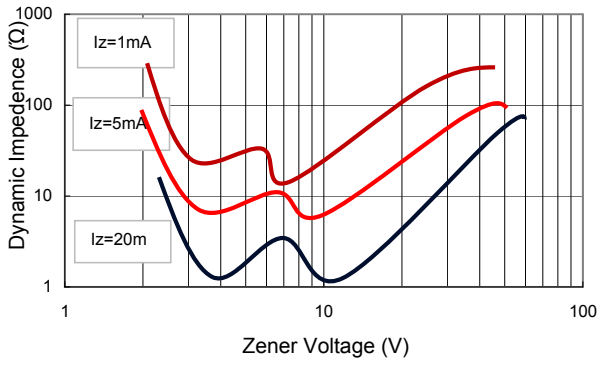


FIG 6 Effect of Zener Voltage on Impedence



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