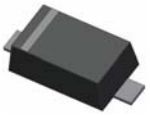
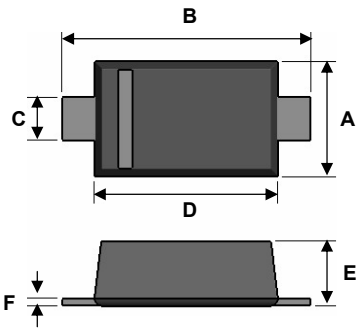
TAIWAN SEMICONDUCTOR

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

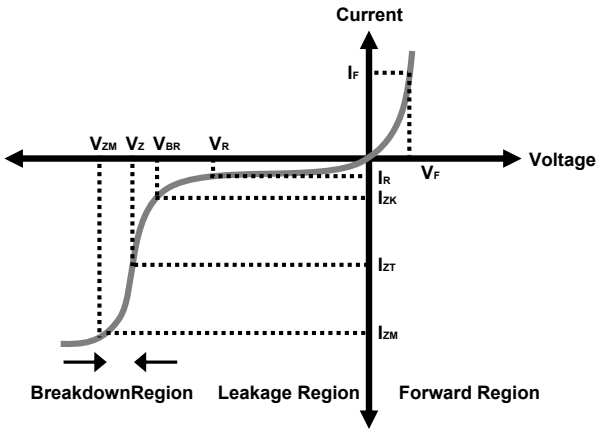
Rating at 25°C ambient temperature unless otherwise specified.

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}

TAIWAN SEMICONDUCTOR

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

Small Signal Diode

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

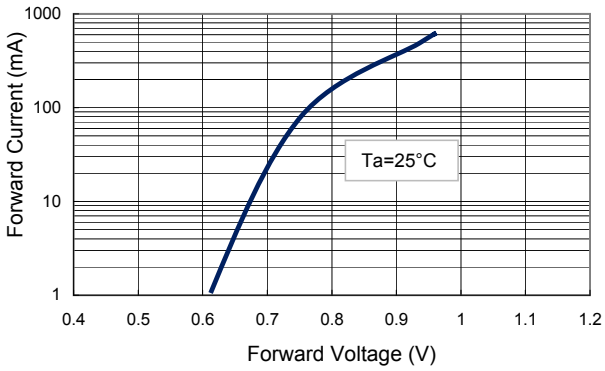


FIG 2 Zener Breakdown Characteristics

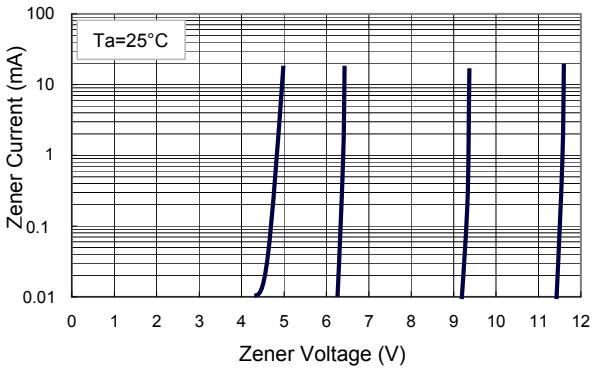


FIG 3 Zener Breakdown Characteristics

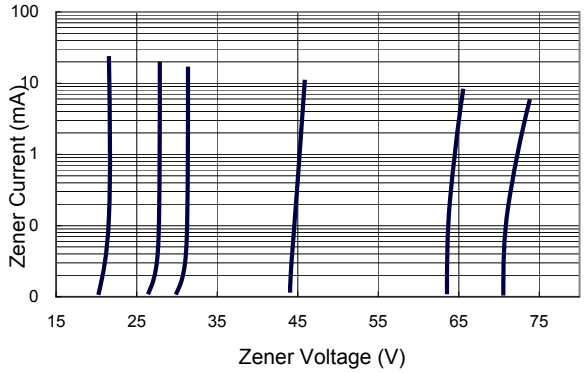


FIG 4 Admissible Power Disspation Curve

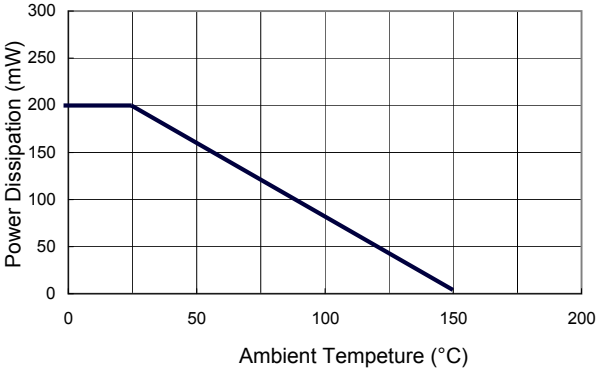


FIG 5 Typical Capacitance

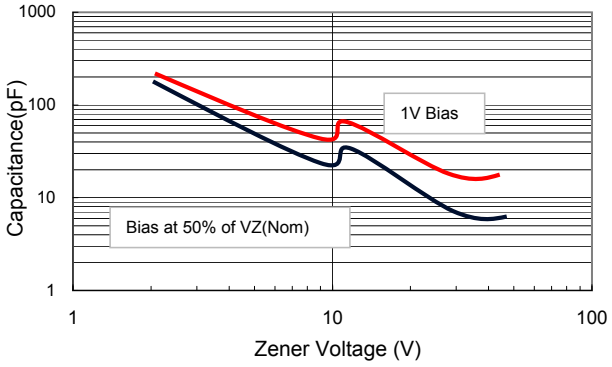
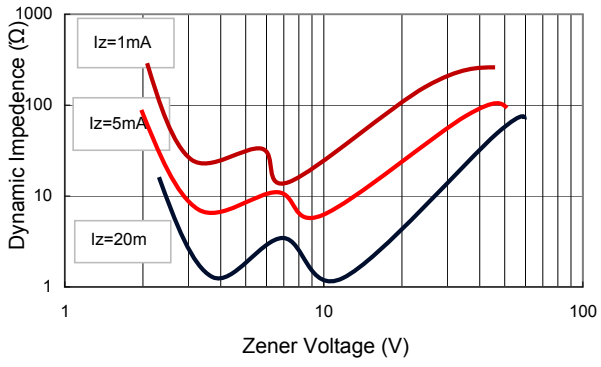


FIG 6 Effect of Zener Voltage on Impedence



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BZT52C62S BZT52C68S BZT52C75S BZT52C10S BZT52C11S BZT52C12S BZT52C13S BZT52C15S BZT52C16S BZT52C18S BZT52C20S BZT52C22S BZT52C24S BZT52C27S BZT52C2V4S BZT52C2V7S BZT52C30S BZT52C33S BZT52C36S BZT52C39S BZT52C3V0S BZT52C3V3S BZT52C3V6S BZT52C3V9S BZT52C43S BZT52C47S BZT52C4V3S BZT52C4V7S BZT52C51S BZT52C56S BZT52C5V1S BZT52C5V6S BZT52C6V2S BZT52C6V8S BZT52C7V5S BZT52C8V2S BZT52C9V1S