Small Signal Product

5% Tolerance SMD Zener Diode

FEATURES

- Wide zener voltage range selection: 2.4V to 36V
- Surface device type mounting
- Moisture sensitivity level 1
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- Pb free and RoHS compliant
- Halogen free



0805

Pb-Free

RoHS COMPLIANT

MECHANICAL DATA

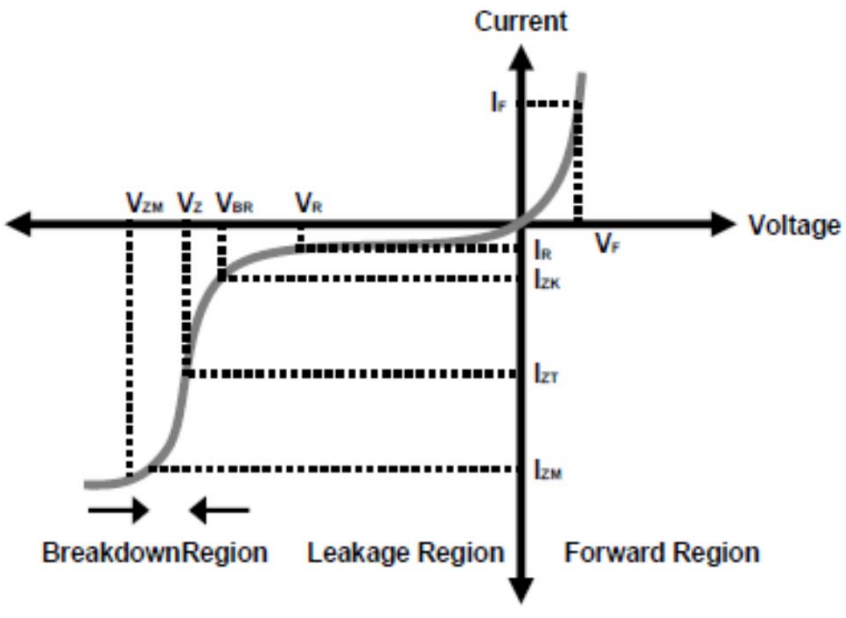
- Case: 0805
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Indicated by cathode band
- Weight : 0.006 grams (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)			
PARAMETER	SYMBO	VALUE	UNIT
Power Dissipation	P_D	500	mW
Forward Voltage I_F = 10 mA	V_F	1.5	V
Thermal Resistance (Junction to Ambient) (Note 1)	$R_{\theta JA}$	300	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	- 55 to +150	°C

Note 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}

ELECTRICAL CHARACTERISTICS (T_A= 25°C unless otherwise noted)

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)
		Nom	Min	Max						
BZY55C2V4	2V4	2.4	2.28	2.52	5	85	1	600	50	1.0
BZY55C2V7	2V7	2.7	2.57	2.84	5	85	1	600	10	1.0
BZY55C3V0	3	3.0	2.85	3.15	5	85	1	600	4	1.0
BZY55C3V3	3V3	3.3	3.14	3.47	5	85	1	600	2	1.0
BZY55C3V6	3V6	3.6	3.42	3.78	5	85	1	600	2	1.0
BZY55C3V9	3V9	3.9	3.71	4.10	5	85	1	600	2	1.0
BZY55C4V3	4V3	4.3	4.09	4.52	5	80	1	600	1	1.0
BZY55C4V7	4V7	4.7	4.47	4.94	5	70	1	600	0.5	1.0
BZY55C5V1	5V1	5.1	4.85	5.36	5	50	1	550	0.1	1.0
BZY55C5V6	5V6	5.6	5.32	5.88	5	30	1	450	0.1	1.0
BZY55C6V2	6V2	6.2	5.89	6.51	5	10	1	200	0.1	2.0
BZY55C6V8	6V8	6.8	6.46	7.14	5	8	1	150	0.1	3.0
BZY55C7V5	7V5	7.5	7.13	7.88	5	7	1	50	0.1	5.0
BZY55C8V2	8V2	8.2	7.79	8.61	5	7	1	50	0.1	6.2
BZY55C9V1	9V1	9.1	8.65	9.56	5	10	1	50	0.1	6.8
BZY55C10	10	10	9.50	10.50	5	15	1	70	0.1	7.5
BZY55C11	11	11	10.45	11.55	5	20	1	70	0.1	8.2
BZY55C12	12	12	11.40	12.60	5	20	1	90	0.1	9.1
BZY55C13	13	13	12.35	13.65	5	26	1	110	0.1	10
BZY55C15	15	15	14.25	15.75	5	30	1	110	0.1	11
BZY55C16	16	16	15.20	16.80	5	40	1	170	0.1	12
BZY55C18	18	18	17.10	18.90	5	50	1	170	0.1	13
BZY55C20	20	20	19.00	21.00	5	55	1	220	0.1	15
BZY55C22	22	22	20.90	23.10	5	55	1	220	0.1	16
BZY55C24	24	24	22.80	25.20	5	80	1	220	0.1	18
BZY55C27	27	27	25.65	28.35	5	80	1	220	0.1	20
BZY55C30	30	30	28.50	31.50	5	80	1	220	0.1	22
BZY55C33	33	33	31.35	34.65	5	80	1	220	0.1	24
BZY55C36	36	36	34.20	37.80	5	80	1	220	0.1	27

Notes： 1. The Zener Voltage (V_Z) is tested under pulse condition of 10ms.

2. The device numbers listed have optional standard tolerance on the nomial zener voltage of ±2%.

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}.

RATINGS AND CHARACTERISTICS CURVES

(TA=25℃ unless otherwise noted)

Fig. 1 Typical Forward Characteristics

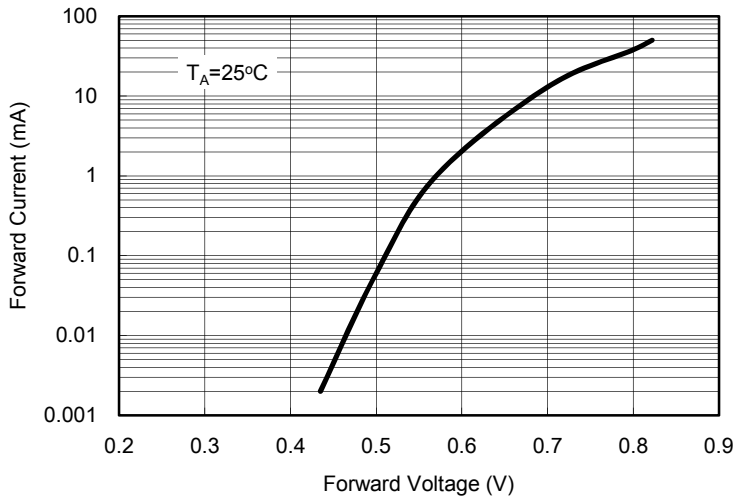


Fig. 2 Zener Breakdown Characteristics

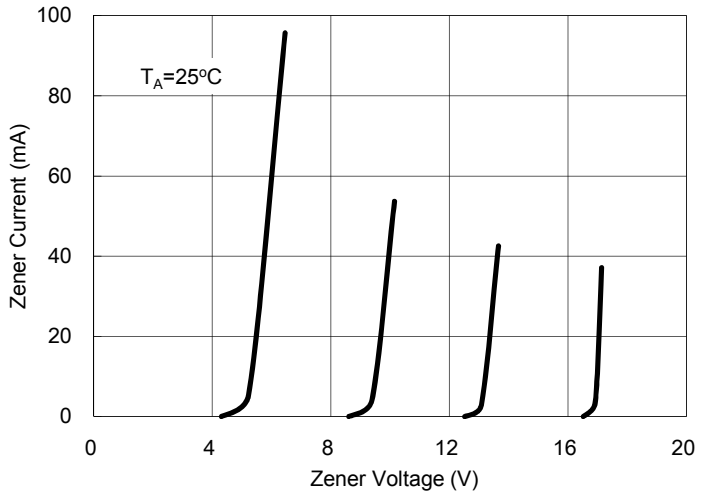


Fig. 3 Zener Breakdown

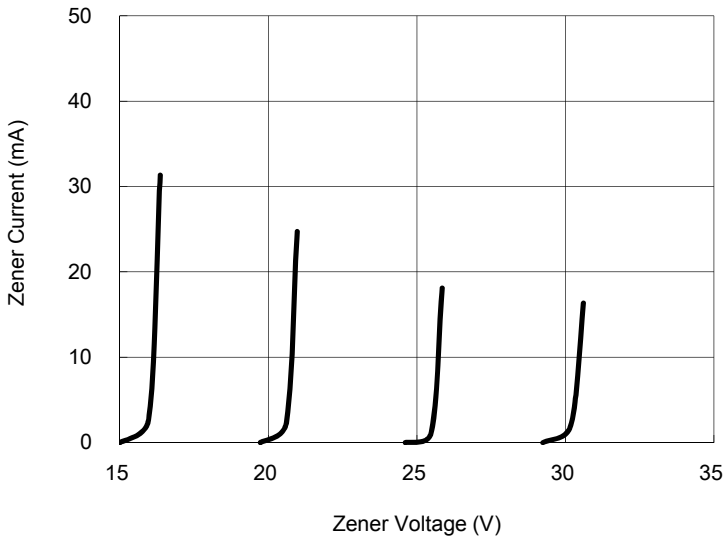


Fig. 4 Admissible Power Dissipation Curve

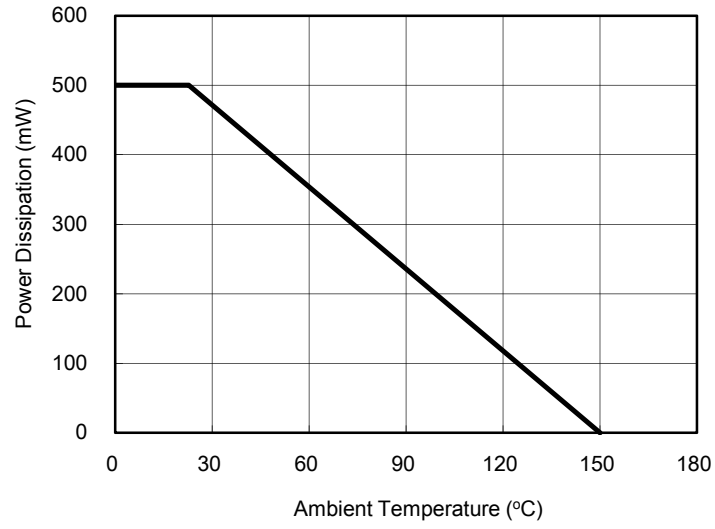
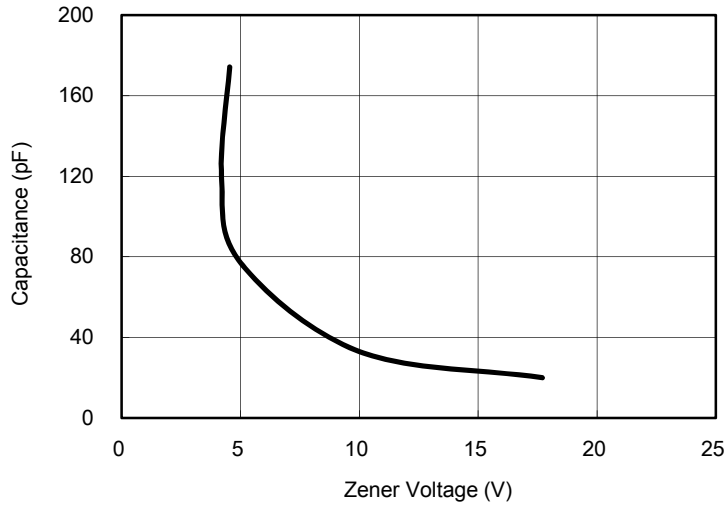


Fig. 5 Typical Capacitance



ORDERING INFORMATION					
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
BZY55Cxxx (Note1, 3)	(Note 2)	RY	G	0805	5K / 7" Reel
		RB			10K / 13" Reel

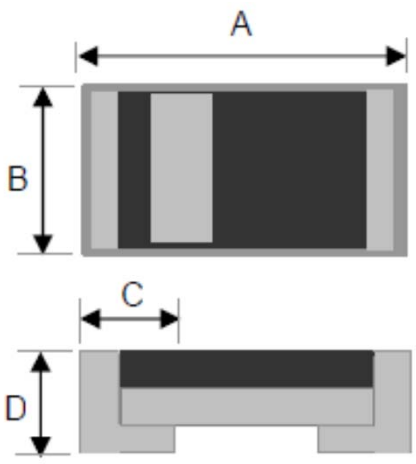
Note 1: "xxx" defines voltage from 2.4V (BZY55C2V4) to 36V (BZY55C36)

Note 2: Manufacture special control, if empty means no special control requirement.

Note 3: Whole series with green compound

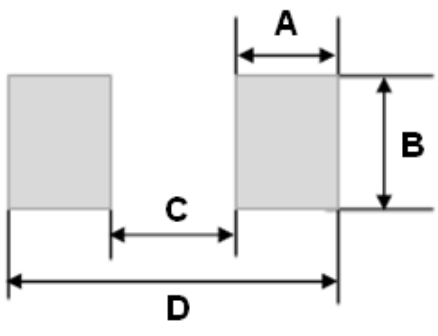
EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BZY55C36 RYG	BZY55C36		RY	G	Green compound
BZY55C36-C0 RYG	BZY55C36	C0	RY	G	Green compound

PACKAGE OUTLINE DIMENSION



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.80	2.20	0.071	0.087
B	1.05	1.45	0.041	0.057
C	0.25	0.65	0.010	0.026
D	0.75	0.95	0.030	0.037

SUGGEST PAD LAYOUT



DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
A	1.10	0.043
B	1.40	0.055
C	1.20	0.047
D	3.40	0.134

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