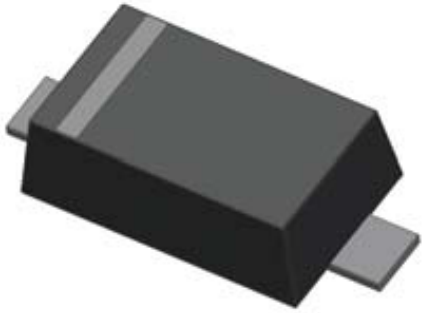
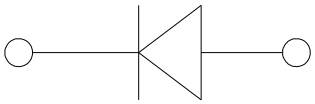
Zener Diodes





Features

- Moisture sensitivity level 1
- Zener voltage 2.4V~75V

Application

- Linear voltage regulator
- DC regulator
- Small-signal surge protection

Mechanical data

- **Package**: SOD-523
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Parameter	Symbol	Unit	Value
Forward voltage @ I_F=10mA	V_F	V	1.0
Power dissipation	P_D	mW	200
Maximum regulator current	I_{ZM}	mA	P_D/ V_Z
Junction temperature	T_J	℃	-55 to +150
Storage temperature	T_{STG}	℃	-55 to +150

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Type number	Device marking	V_Z @ I_{ZT} (V)			Z_{ZT}(Ω)		Z_{ZK}(Ω)		I_R(μA) @V_R		Diode capacitance Cd (pF)	Non-repetitive peak reverse current Izsm (A)
		Min.	Typ.	Max.	I_{ZT}(mA)	Max	Max	Max.	Max	V_R(V)	Max	Max
BZX584C2V4	50	2.28	2.4	2.52	5	100	1	1000	50	1	450	6
BZX584C2V7	51	2.57	2.7	2.84	5	100	1	1000	20	1	450	6
BZX584C3V0	52	2.85	3	3.15	5	100	1	1000	10	1	450	6
BZX584C3V3	53	3.14	3.3	3.47	5	95	1	1000	5	1	450	6
BZX584C3V6	54	3.42	3.6	3.78	5	90	1	1000	5	1	450	4.5
BZX584C3V9	55	3.71	3.9	4.1	5	90	1	1000	3	1	450	4.5
BZX584C4V3	56	4.09	4.3	4.52	5	90	1	1000	3	1	450	3.5
BZX584C4V7	57	4.47	4.7	4.94	5	80	1	800	3	2	300	3.5
BZX584C5V1	58	4.85	5.1	5.36	5	60	1	500	2	2	300	3
BZX584C5V6	59	5.32	5.6	5.88	5	40	1	200	1	2	200	3
BZX584C6V2	5A	5.8	6.2	6.6	5	10	1	100	3	4	200	3
BZX584C6V8	5B	6.4	6.8	7.2	5	15	1	160	2	4	200	2
BZX584C7V5	5C	7	7.5	7.9	5	15	1	160	1	5	150	2
BZX584C8V2	5D	7.7	8.2	8.7	5	15	1	160	0.7	5	150	2
BZX584C9V1	5E	8.5	9.1	9.6	5	15	1	160	0.2	7	150	1.8
BZX584C10V	5F	9.4	10	10.6	5	20	1	160	0.1	8	90	1.8
BZX584C11V	5G	10.4	11	11.6	5	20	1	160	0.1	8	85	1.8
BZX584C12V	5H	11.4	12	12.7	5	25	1	80	0.1	8	85	1.8
BZX584C13V	5J	12.4	13	14.1	5	30	1	80	0.1	8	80	1
BZX584C15V	5K	14.3	15	15.6	5	30	1	80	0.05	10.5	75	1
BZX584C16V	5L	15.3	16	17.1	5	40	1	80	0.05	11.2	75	1
BZX584C18V	5M	16.8	18	19.1	5	45	1	80	0.05	12.6	70	1
BZX584C20V	5N	18.8	20	21.2	5	55	1	100	0.05	14	60	1
BZX584C22V	5P	20.8	22	23.3	5	55	1	100	0.05	15.4	60	0.6
BZX584C24V	5R	22.8	24	25.6	5	70	1	120	0.05	16.8	55	0.6
BZX584C27V	5S	25.1	27	28.9	2	80	0.5	300	0.05	18.9	50	0.6
BZX584C30V	5T	28	30	32	2	80	0.5	300	0.05	21	50	0.6

Type number	Device marking	V_Z @ I_{ZT} (V)			Z_{ZT}(Ω)		Z_{ZK}(Ω)		I_R(μA) @V_R		Diode capacitance Cd (pF)	Non-repetitive peak reverse current Izsm (A)
		Min.	Typ.	Max.	I_{ZT}(mA)	Max	Max	Max.	Max	V_R(V)	Max	Max
BZX584C33V	5U	31	33	35	2	80	0.5	300	0.05	23.2	45	0.6
BZX584C36V	5V	34	36	38	2	90	0.5	500	0.05	25.2	45	0.6
BZX584C39V	5X	37	39	41	2	130	0.5	500	0.05	27.3	45	0.6
BZX584C43V	5Y	40	43	46	2	150	0.5	500	0.05	30.1	40	0.6
BZX584C47V	5Z	44	47	50	2	170	0.5	500	0.05	32.9	40	0.5
BZX584C51V	Y17	48	51	54	2	180	0.5	400	0.05	35.7	40	0.4
BZX584C56V	Y18	53	56	59	2	200	1	1000	0.1	42	40	0.3
BZX584C62V	Y19	58	62	66	2	215	0.5	450	0.05	43.4	35	0.3
BZX584C68V	Y20	64	68	72	2	240	0.5	475	0.05	47.6	35	0.25
BZX584C75V	Y21	70	75	79	2	255	0.5	500	0.05	52.5	35	0.25

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J\text{-}A}$(1)	℃/W	625
Thermal resistance, junction-to-case	$R_{\theta J\text{-}C}$(1)	℃/W	500

Note:

（1）Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 8mm*9mm copper pad areas

■Characteristics

Fig 1：P_D-Ta Curve

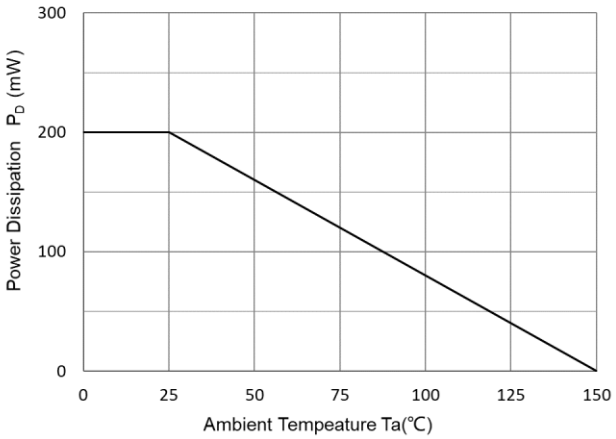


Fig 2：Zener Breakdown Characteristics

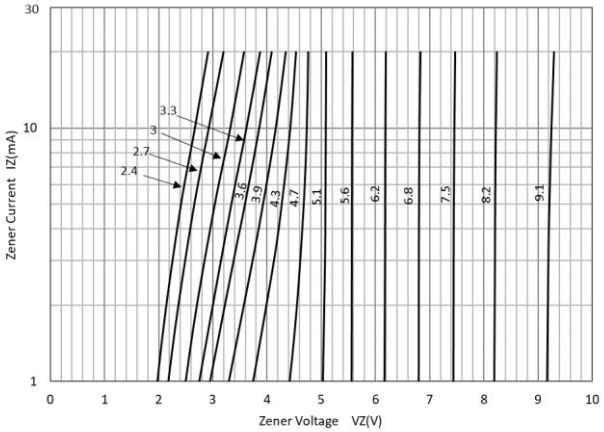


Fig 3：Zener Breakdown Characteristics

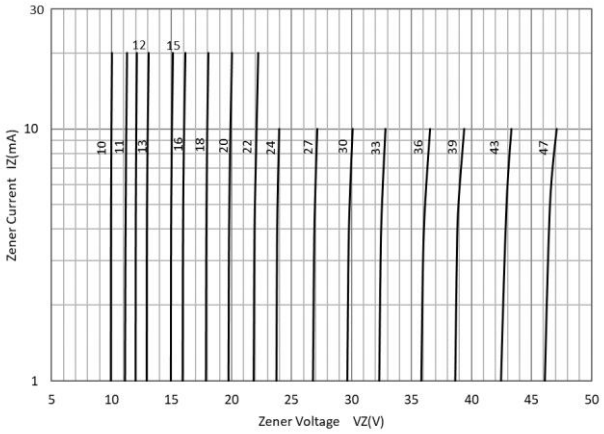


Fig 4：Zener Breakdown Characteristics

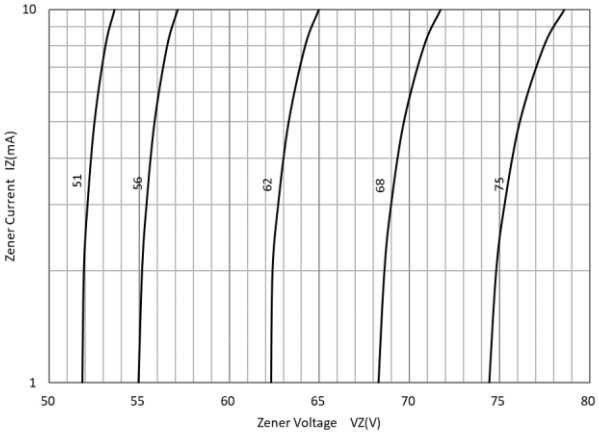


Fig 5：Typical Temperature Coeffient

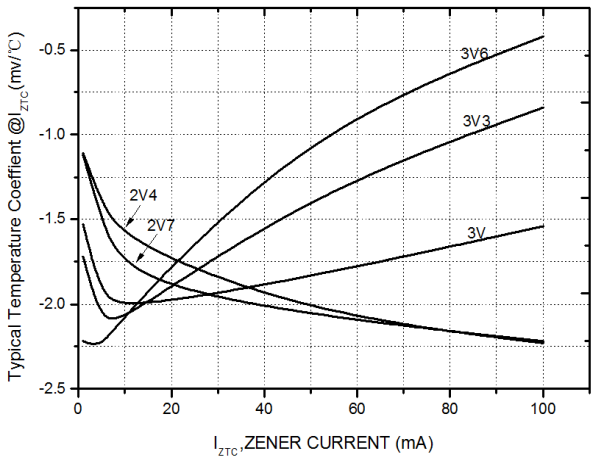


Fig 6：Typical Temperature Coeffient

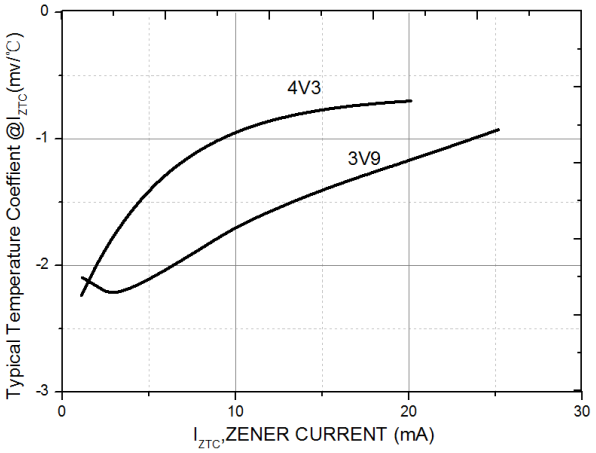


Fig 7：Typical Temperature Coeffient

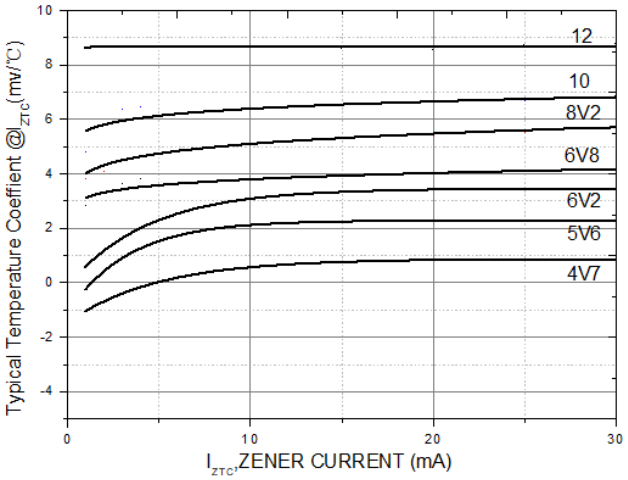


Fig 8：Typical Temperature Coeffient

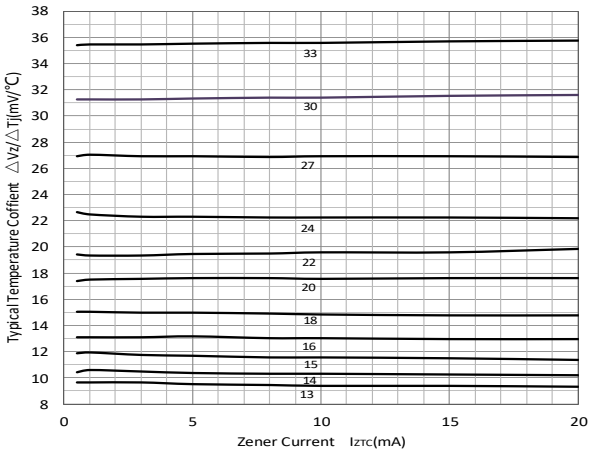


Fig 9：Typical Temperature Coeffient

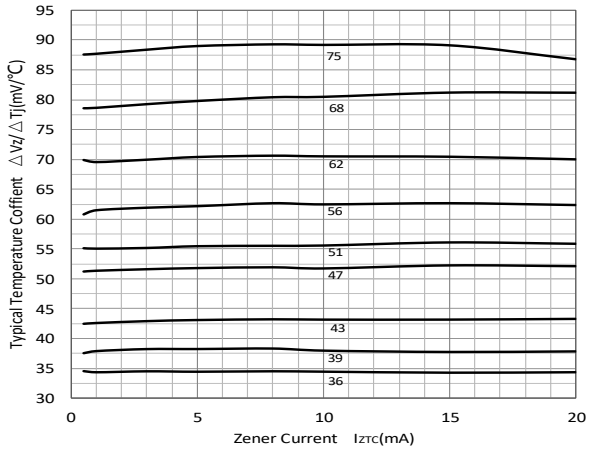


Fig 10：Typical Forward Voltage

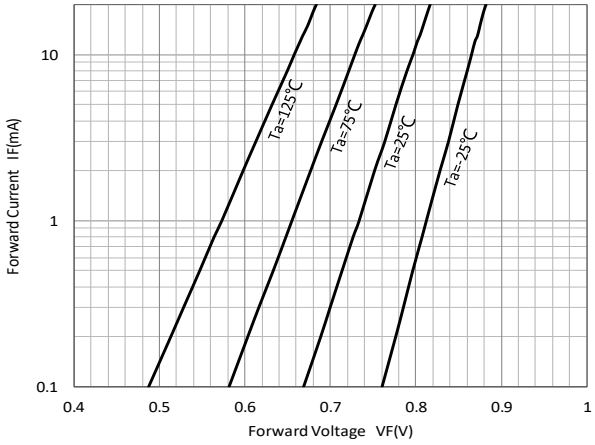


Fig 11：Typical Reverse Current

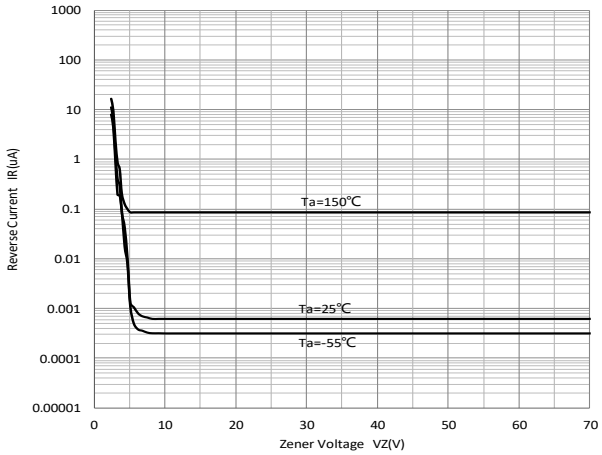
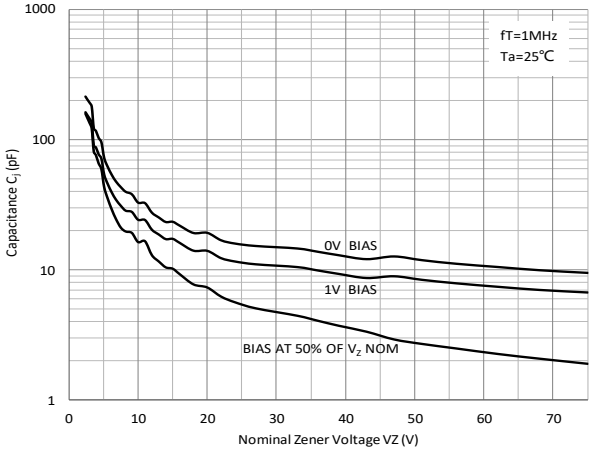


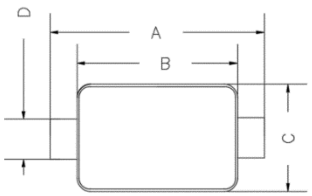
Fig 12：Typical Capacitance



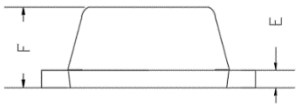
■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BZX584C2V4 THRU BZX584C75V	F2	Approximate 0.002	8000	80000	320000	7” reel
BZX584C2V4 THRU BZX584C75V	F3	Approximate 0.002	3000	30000	120000	7” reel

■ Outline Dimensions



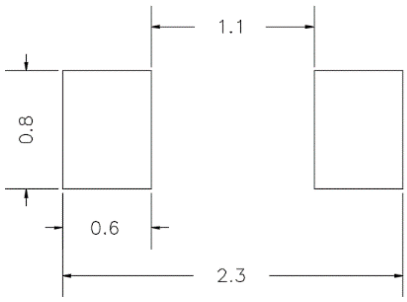
TOP VIEW



SIDE VIEW

DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	MAX
A	0.059	0.067	1.500	1.700
B	0.043	0.051	1.100	1.300
C	0.028	0.035	0.700	0.900
D	0.010	0.014	0.250	0.350
E	0.002	0.008	0.050	0.200
F	0.020	0.028	0.500	0.700

■ Suggested Pad Layout



UNIT: mm

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.