

Small Signal Product

200mW, Surface Mount Zener SMD Zener Diode

FEATURES

- Wide zener voltage range selection : 2.4V to 75V
- Surface Mount Device type
- Moisture sensitivity level 1
- Pb free and RoHS compliant
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate



SOD-523F

MECHANICAL DATA

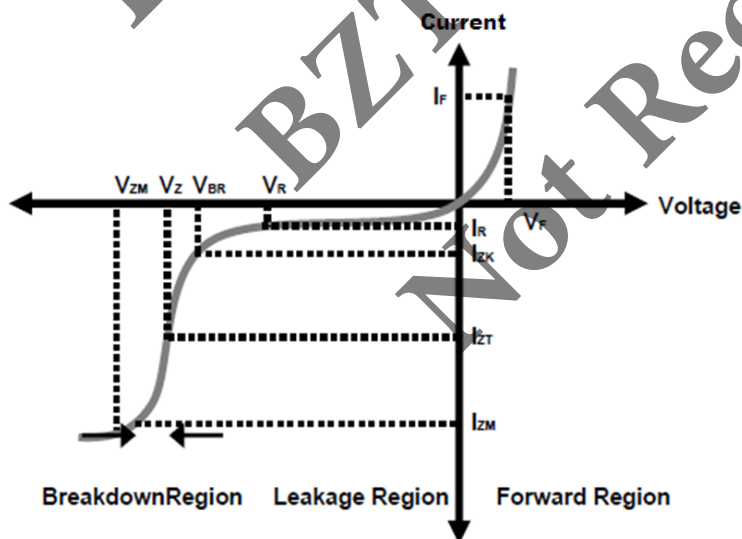
- Case: SOD-523F small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Indicated by cathode band
- Weight: 1.68 ± 0.5mg



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	P _D	200	mW
Forward Voltage	V _F	1	V
Thermal Resistance (Junction to Ambient)	R _{θJA}	625	°C/W
Junction and Storage Temperature Range	T _{STG}	-65 to +150	°C

Note1: 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
- 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

(Ratings at $T_A=25^{\circ}\text{C}$ ambient temperature unless otherwise specified)

Part Number	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current	
		V_Z @ I_{ZT} (V)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω)	I_{ZK} (mA)	Z_{ZK} @ I_{ZK} (Ω)	I_R @ V_R (μA)	V_R (V)
		Min	Nom	Max						
BZT52C2V0	RD	1.8	2.0	2.15	5	100	-	-	120	0.5
BZT52C2V2	RE	2.08	2.2	2.33	5	100	-	-	120	0.7
BZT52C2V4	Z7	2.2	2.4	2.6	5	100	1	1000	120	1
BZT52C2V7	A8	2.5	2.7	2.9	5	100	1	1000	120	1
BZT52C3V0	B8	2.8	3	3.2	5	100	1	1000	50	1
BZT52C3V3	C8	3.1	3.3	3.5	5	95	1	1000	20	1
BZT52C3V6	D8	3.4	3.6	3.8	5	90	1	1000	10	1
BZT52C3V9	E8	3.7	3.9	4.1	5	90	1	1000	5	1
BZT52C4V3	F8	4	4.3	4.6	5	90	1	1000	5	1
BZT52C4V7	G8	4.4	4.7	5	5	80	1	800	2	1
BZT52C5V1	H8	4.8	5.1	5.4	5	60	1	500	2	1.5
BZT52C5V6	I8	5.2	5.6	6	5	40	1	200	1	2.5
BZT52C6V2	J8	5.8	6.2	6.6	5	10	1	100	1	3
BZT52C6V8	K8	6.4	6.8	7.2	5	15	1	160	0.5	3.5
BZT52C7V5	L8	7	7.5	7.9	5	15	1	160	0.5	4
BZT52C8V2	M8	7.7	8.2	8.7	5	15	1	160	0.5	5
BZT52C9V1	N8	8.5	9.1	9.6	5	15	1	160	0.5	6
BZT52C10K	O8	9.4	10	10.6	5	20	1	160	0.1	7
BZT52C11K	P8	10.4	11	11.6	5	20	1	160	0.1	8
BZT52C12K	Q8	11.4	12	12.7	5	25	1	80	0.1	9
BZT52C13K	R8	12.4	13	14.1	5	30	1	80	0.1	10
BZT52C15K	S8	14.3	15	15.8	5	30	1	80	0.1	11
BZT52C16K	T8	15.3	16	17.1	5	40	1	80	0.1	12
BZT52C18K	U8	16.8	18	19.1	5	45	1	80	0.1	13
BZT52C20K	V8	18.8	20	21.2	5	55	1	100	0.1	15
BZT52C22K	W8	20.8	22	23.3	5	55	1	100	0.1	17
BZT52C24K	X8	22.8	24	25.6	5	70	1	120	0.1	19
BZT52C27K	Y8	25.1	27	28.9	5	80	1	300	0.1	21
BZT52C30K	Z8	28	30	32	5	80	1	300	0.1	23
BZT52C33K	A9	31	33	35	5	80	1	300	0.1	25
BZT52C36K	B9	34	36	38	5	90	1	500	0.1	27
BZT52C39K	C9	37	39	41	5	130	1	500	2	30
BZT52C43K	D9	40	43	46	5	150	1	500	2	33
BZT52C47K	E9	44	47	50	5	170	1	500	2	36
BZT52C51K	F9	48	51	54	5	180	1	500	1	39
BZT52C56K	G9	52	56	60	5	200	1	500	1	43
BZT52C62K	H9	58	62	66	5	215	1	500	0.2	47
BZT52C68K	I9	64	68	72	5	240	1	500	0.2	52
BZT52C75K	J9	70	75	79	5	255	1	500	0.2	57

Notes : 1. The Zener Voltage (V_Z) is tested under pulse condition of 20ms.

2. The device numbers listed have a standard tolerance on the nominal zener voltage of $\pm 2\%$.

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.

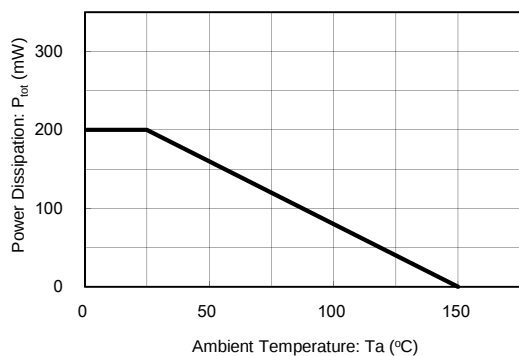
4. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an RMS value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK} .

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RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

Fig. 1 Derating curve



BZT52C2V0K
BZT52C2V4K
Not Recommended

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ORDERING INFORMATION					
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND	PACKAGE	PACKING
BZT52CxxxK (Note1)	(Note 2)	RK	G	SOD-523F	3K / 7" Reel
		RS	G	SOD-523F	8K / 7" Reel

Note 1: "xxx" is Device Code from "2V0" thru "75"

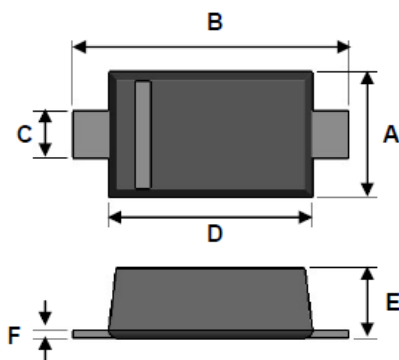
Note 2: Manufacture special control, if empty means no special control requirement

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BZT52C2V0K RSG	BZT52C2V0K		RS	G	Green compound
BZT52C2V0K -L0 RSG	BZT52C2V0K	L0	RS	G	Green compound

BZT52C2V0K
BZT52C2V4K
Not Recommended

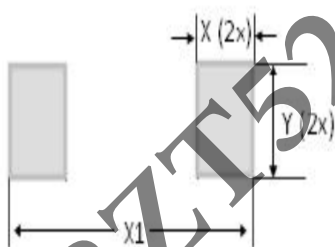
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PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	0.70	0.90	0.028	0.035
B	1.50	1.70	0.059	0.067
C	0.25	0.40	0.010	0.016
D	1.10	1.30	0.043	0.051
E	0.50	0.77	0.020	0.030
F	0.07	0.20	0.003	0.008

SUGGESTED PAD LAYOUT



DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
X	0.60	0.024
X1	2.30	0.091
Y	0.80	0.031

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