

## 200mW 5% Zener Diodes

### FEATURES

- Wide zener voltage range selection: 2.7V to 75V
- $V_Z$  Tolerance Selection of  $\pm 5\%$
- Surface device type mounting
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC

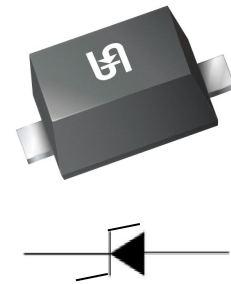
### APPLICATIONS

- Constant Voltage control

### MECHANICAL DATA

- Case: SOD-523F
- Molding compound: UL flammability classification rating 94V-0
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 1.47 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	2.7-75	V
Test current $I_{ZT}$	5	mA
$P_D$	200	mW
$T_J$ Max.	150	$^{\circ}\text{C}$
Package	SOD-523F	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	$P_D$	200	mW
Junction temperature range	$T_J$	-65 ~ 150	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-65 ~ 150	$^{\circ}\text{C}$

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PART NUMBER	MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
		$V_Z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$	
		V			mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V
		Min.	Nom.	Max.		Max.	Max.		Max.	
BZT52C2V7K	A8	2.5	2.7	2.9	5	100	1000	1	120	1
BZT52C3V0K	B8	2.8	3	3.2	5	100	1000	1	50	1
BZT52C3V3K	C8	3.1	3.3	3.5	5	95	1000	1	20	1
BZT52C3V6K	D8	3.4	3.6	3.8	5	90	1000	1	10	1
BZT52C3V9K	E8	3.7	3.9	4.1	5	90	1000	1	5	1
BZT52C4V3K	F8	4	4.3	4.6	5	90	1000	1	5	1
BZT52C4V7K	G8	4.4	4.7	5	5	80	800	1	2	1
BZT52C5V1K	H8	4.8	5.1	5.4	5	60	500	1	2	1.5
BZT52C5V6K	I8	5.2	5.6	6	5	40	200	1	1	2.5
BZT52C6V2K	J8	5.8	6.2	6.6	5	10	100	1	1	3
BZT52C6V8K	K8	6.4	6.8	7.2	5	15	160	1	0.5	3.5
BZT52C7V5K	L8	7	7.5	7.9	5	15	160	1	0.5	4
BZT52C8V2K	M8	7.7	8.2	8.7	5	15	160	1	0.5	5
BZT52C9V1K	N8	8.5	9.1	9.6	5	15	160	1	0.5	6
BZT52C10K	O8	9.4	10	10.6	5	20	160	1	0.1	7
BZT52C11K	P8	10.4	11	11.6	5	20	160	1	0.1	8
BZT52C12K	Q8	11.4	12	12.7	5	25	80	1	0.1	9
BZT52C13K	R8	12.4	13	14.1	5	30	80	1	0.1	10
BZT52C15K	S8	14.3	15	15.8	5	30	80	1	0.1	11
BZT52C16K	T8	15.3	16	17.1	5	40	80	1	0.1	12
BZT52C18K	U8	16.8	18	19.1	5	45	80	1	0.1	13
BZT52C20K	V8	18.8	20	21.2	5	55	100	1	0.1	15
BZT52C22K	W8	20.8	22	23.3	5	55	100	1	0.1	17
BZT52C24K	X8	22.8	24	25.6	5	70	120	1	0.1	19
BZT52C27K	Y8	25.1	27	28.9	5	80	300	1	0.1	21
BZT52C30K	Z8	28	30	32	5	80	300	1	0.1	23
BZT52C33K	A9	31	33	35	5	80	300	1	0.1	25
BZT52C36K	B9	34	36	38	5	90	500	1	0.1	27
BZT52C39K	C9	37	39	41	5	130	500	1	2	30
BZT52C43K	D9	40	43	46	5	150	500	1	2	33
BZT52C47K	E9	44	47	50	5	170	500	1	2	36
BZT52C51K	F9	48	51	54	5	180	500	1	1	39
BZT52C56K	G9	52	56	60	5	200	500	1	1	43
BZT52C62K	H9	58	62	66	5	215	500	1	0.2	47
BZT52C68K	I9	64	68	72	5	240	500	1	0.2	52
BZT52C75K	J9	70	75	79	5	255	500	1	0.2	57

**Notes:**

1. The Zener Voltage ( $V_Z$ ) is tested under pulse condition of 30ms
2. The device numbers listed have a standard tolerance on the normal zener voltage of  $\pm 5\%$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> (Note 1, 2)	<b>PACKAGE</b>	<b>PACKING</b>
BZT52CxxxK RK	SOD-523F	3K / 7" Reel
BZT52CxxxK RKG	SOD-523F	3K / 7" Reel
BZT52CxxxK RS	SOD-523F	8K / 7" Reel
BZT52CxxxK RSG	SOD-523F	8K / 7" Reel

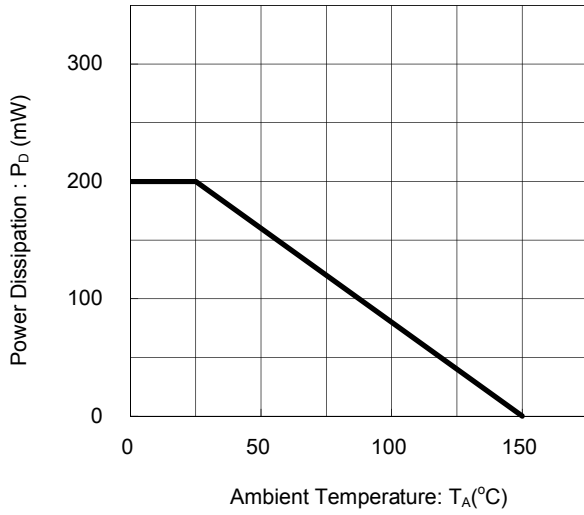
Note 1: "xxx" defines voltage from 2.7V (BZT52C2V7K) to 75V (BZT52C75K)

Note 2: "G" means green compound (Halogen free)

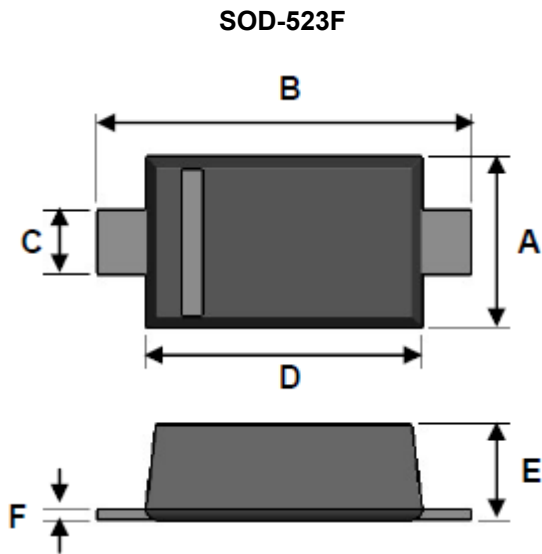
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig. 1 Derating Curve**

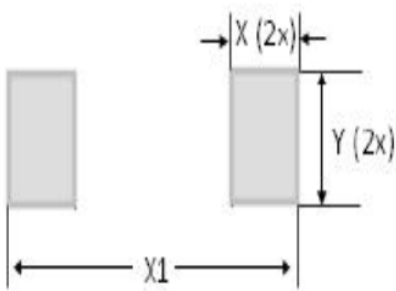


**PACKAGE OUTLINE DIMENSION**



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

**SUGGEST 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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