

## 2% Zener Voltage Tolerance SMD Zener Diode

### FEATURES

- Wide zener voltage range selection: 5.1V to 20V
- VZ Tolerance Selection of  $\pm 2\%$
- Surface device type mountin
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

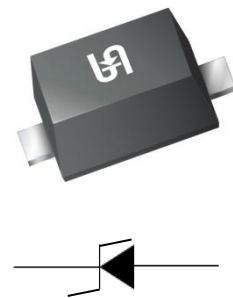
### APPLICATIONS

- Constant Voltage control

### MECHANICAL DATA

- Case: SOD-523F
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 1.3mg  $\pm 20\%$

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	5.1-20	V
Test current $I_{ZT}$	5	mA
$P_{tot}$	150	mW
$T_J$ Max.	150	$^{\circ}\text{C}$
Package	SOD-523F	
Configuration	Single dice	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Total power dissipation	$P_{tot}$	150	mW
Junction temperature range	$T_J$	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)												
PART NUMBER	MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT		TYPICAL TEMPERATURE COEFFICIENT	
		$V_Z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$		$T_C @ I_{ZT}$	
		V			mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V	mV/ $^\circ\text{C}$	
		Min.	Nom.	Max.		Max.	Max.		Max.		Min.	Max.
BZX584B5V1	2Z2	5.00	5.1	5.20	5	60	480	1	2	2.0	-2.7	1.2
BZX584B5V6	2Z3	5.49	5.6	5.71	5	40	400	1	1	2.0	-2.0	2.5
BZX584B6V2	2Z4	6.08	6.2	6.32	5	10	150	1	3	4.0	0.4	3.7
BZX584B6V8	2Z5	6.66	6.8	6.94	5	15	80	1	2	4.0	1.2	4.5
BZX584B7V5	2Z6	7.35	7.5	7.65	5	15	80	1	1	5.0	2.5	5.3
BZX584B8V2	2Z7	8.04	8.2	8.36	5	15	80	1	0.7	5.0	3.2	6.2
BZX584B9V1	2Z8	8.92	9.1	9.28	5	15	100	1	0.5	6.0	3.8	7.0
BZX584B10	2Z9	9.80	10	10.20	5	20	150	1	0.2	7.0	4.5	8.0
BZX584B11	2Y1	10.78	11	11.22	5	20	150	1	0.1	8.0	5.4	9.0
BZX584B12	2Y2	11.76	12	12.24	5	25	150	1	0.1	8.0	6.0	10.0
BZX584B13	2Y3	12.74	13	13.26	5	30	170	1	0.1	8.0	7.0	11.0
BZX584B15	2Y4	14.70	15	15.30	5	30	200	1	0.1	10.5	9.2	13.0
BZX584B16	2Y5	15.68	16	16.32	5	40	200	1	0.1	11.2	10.4	14.0
BZX584B18	2Y6	17.64	18	18.36	5	45	225	1	0.1	12.6	12.4	16.0
BZX584B20	2Y7	19.60	20	20.40	5	55	225	1	0.1	14.0	14.4	18.0

<b>ORDERING INFORMATION</b>				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
BZX584Bxxx (Note1&2)	RS	G	SOD-523F	8K / 7" Reel

**Notes:**

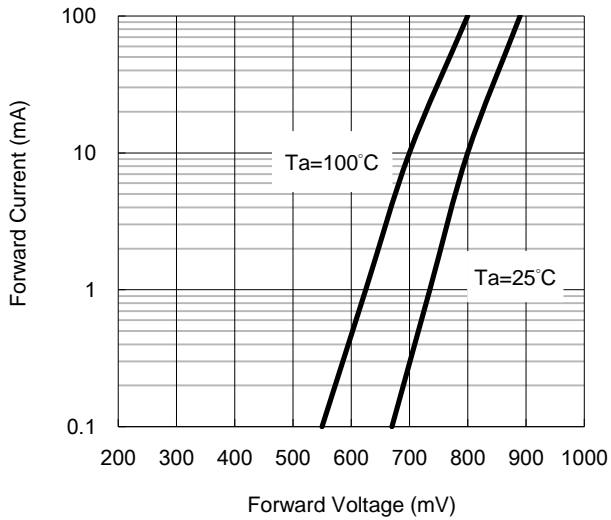
- "xxx" defines voltage from 5.1V (BZX584B5V1) to 20V (BZX584B20)
- Whole series with green compound

<b>EXAMPLE</b>				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BZX584B5V1 RSG	BZX584B5V1	RS	G	Green compound

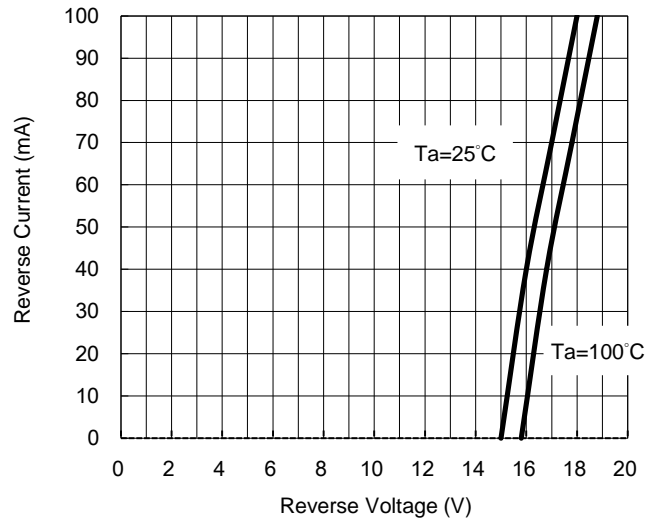
**CHARACTERISTICS CURVES**

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

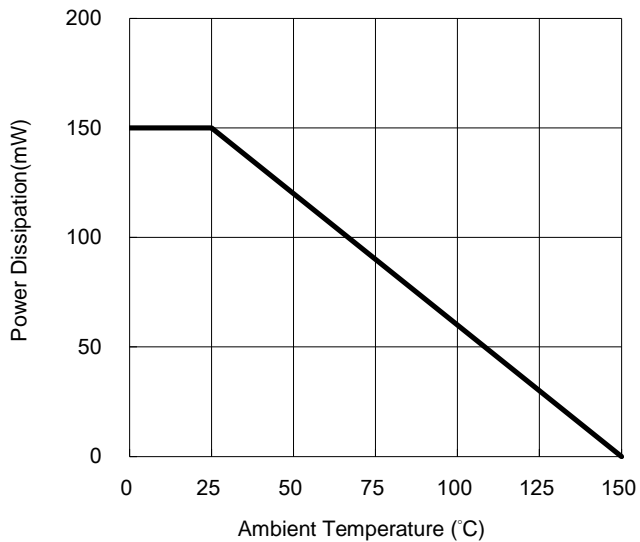
**Fig.1 Typical Forward Characteristics**



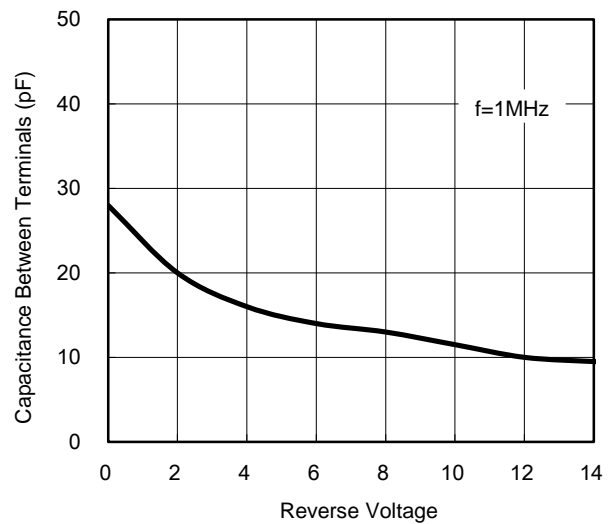
**Fig. 2 Reverse Current vs Reverse Voltage**



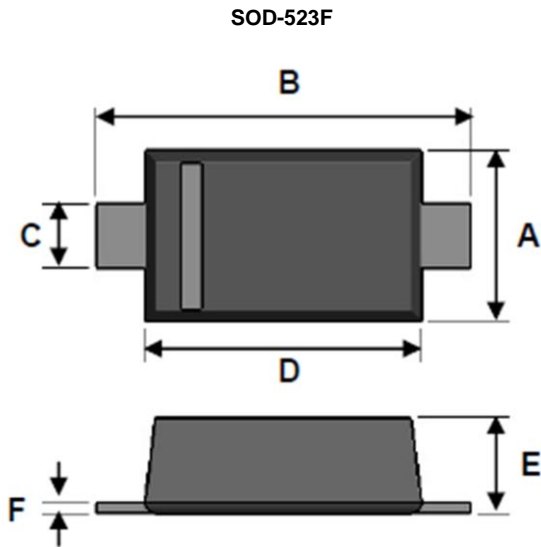
**Fig.3 Admissible Power Dissipation Curve**



**Fig.4 Typical Capacitance Characteristics**

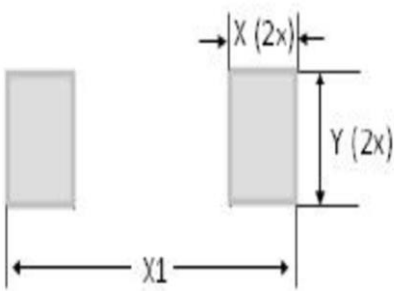


**PACKAGE OUTLINE DIMENSION**



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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