

## 200mW, 2% Tolerance SMD Zener Diode

### FEATURES

- Wide Zener voltage range selection: 3.6V to 36V
- $V_Z$  tolerance selection of  $\pm 2\%$
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant

### APPLICATIONS

- Low voltage stabilizers or voltage references
- Adapters
- On-board DC/DC converter

### MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 4.60mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	3.6 - 36	V
$P_D$	200	mW
$T_{J\ MAX}$	150	°C
Package	SOD-323F	
Configuration	Single die	



SOD-323F



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	$T_J$	-55 to +150	°C
Storage temperature range	$T_{STG}$	-55 to +150	°C

**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	
		$V_Z @ I_{ZT}^{(1)}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$	
		V			mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V
		Min.	Nom.	Max.		Max.	Max.		Max.	
UDZS3V6B	D0	3.60	3.60	3.85	5	90	600	1.0	4.50	1
UDZS3V9B	D1	3.89	3.90	4.16	5	90	600	1.0	2.70	1
UDZS4V3B	D2	4.17	4.30	4.43	5	90	600	1.0	2.70	1
UDZS4V7B	D3	4.55	4.70	4.75	5	80	500	1.0	2.70	1
UDZS5V1B	D4	4.98	5.10	5.20	5	60	500	1.0	1.80	2
UDZS5V6B	D5	5.49	5.60	5.73	5	40	300	1.0	0.90	3
UDZS6V2B	D6	6.06	6.20	6.33	5	40	150	1.0	2.70	3
UDZS6V8B	D7	6.65	6.80	6.93	5	30	75	1.0	1.80	4
UDZS7V5B	D8	7.28	7.50	7.60	5	30	75	1.0	0.90	4
UDZS8V2B	D9	8.02	8.20	8.36	5	30	75	1.0	0.63	5
UDZS9V1B	DA	8.85	9.10	9.23	5	30	90	1.0	0.45	6
UDZS10B	DB	9.77	10.00	10.21	5	20	150	1.0	0.18	7
UDZS11B	DC	10.76	11.00	11.22	5	20	150	1.0	0.09	8
UDZS12B	DE	11.74	12.00	12.24	5	20	150	1.0	0.09	9
UDZS13B	DF	12.91	13.00	13.49	5	40	160	1.0	0.045	10
UDZS15B	DG	14.34	15.00	14.98	5	40	190	1.0	0.045	11
UDZS16B	DH	15.85	16.00	16.51	5	40	190	1.0	0.045	12
UDZS18B	DJ	17.56	18.00	18.35	5	50	220	1.0	0.045	13
UDZS20B	DK	19.52	20.00	20.39	5	60	220	1.0	0.045	15
UDZS22B	DL	21.54	22.00	22.47	5	80	240	1.0	0.045	17
UDZS24B	DM	23.72	24.00	24.78	5	80	240	1.0	0.045	19
UDZS27B	DN	26.19	27.00	27.53	5	100	300	0.5	0.045	21
UDZS30B	DP	29.19	30.00	30.69	5	100	300	0.5	0.045	23
UDZS33B	DR	32.15	33.00	33.79	5	100	310	0.5	0.045	25
UDZS36B	DS	35.07	36.00	36.87	5	100	330	0.5	0.045	27

**Notes:**

1. The Zener voltage ( $V_Z$ ) is tested under pulse condition of 30ms
2. For detailed information on price, availability and delivery of nominal Zener voltages between the voltages shown and tighter voltage tolerances
3. The Zener impedance is derived from the 60-cycle AC voltage, which results when an AC current having an ms value equal to 10% of the DC Zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE<sup>(1)(2)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
UDZSxB RRG	SOD-323F	3,000 / 7" Tape & Reel
UDZSxB RR	SOD-323F	3,000 / 7" Tape & Reel
UDZSxB R9G	SOD-323F	10,000 / 13" Tape & Reel
UDZSxB R9	SOD-323F	10,000 / 13" Tape & Reel

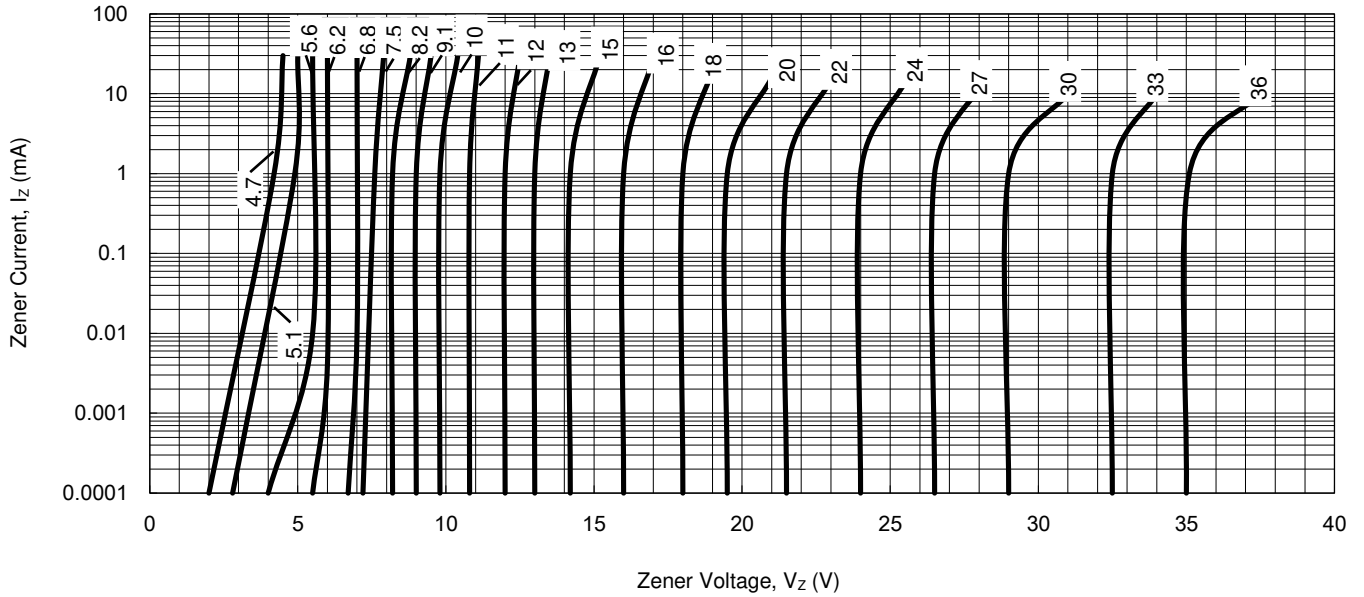
**Notes:**

- "x" defines voltage from 3.6V (UDZS3V6B) to 36V (UDZS36B)
- "G" means green compound (halogen-free according to IEC 61249-2-21)

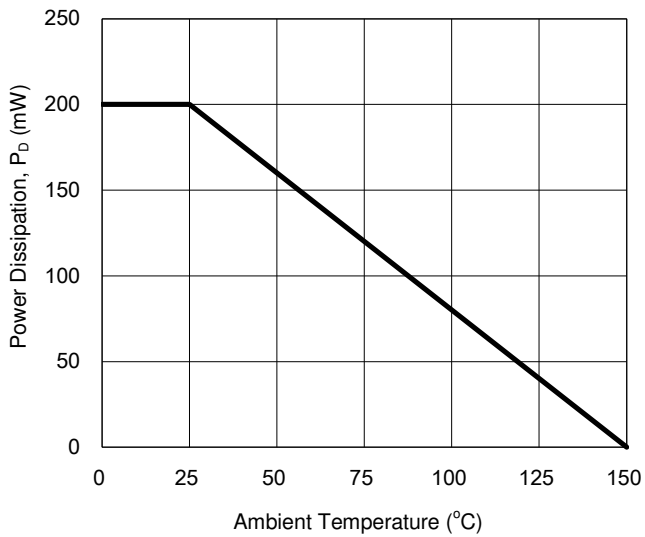
**CHARACTERISTICS CURVES**

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

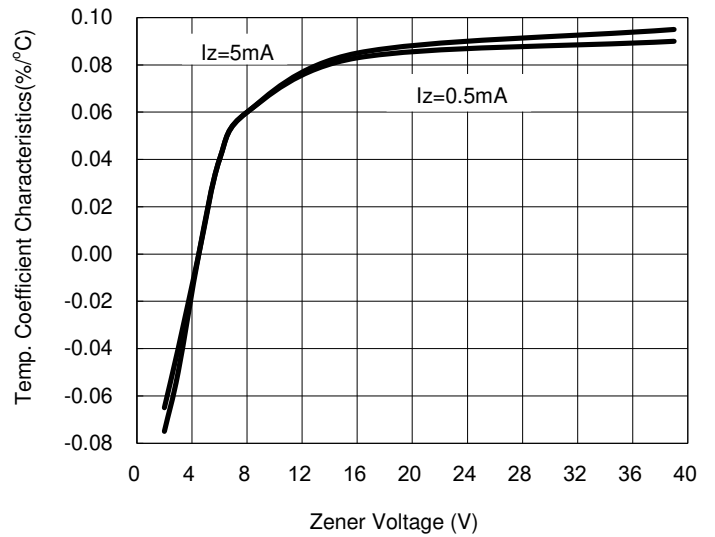
**Fig.1  $V_Z - I_Z$  Characteristics**



**Fig.2 Derating Curve**

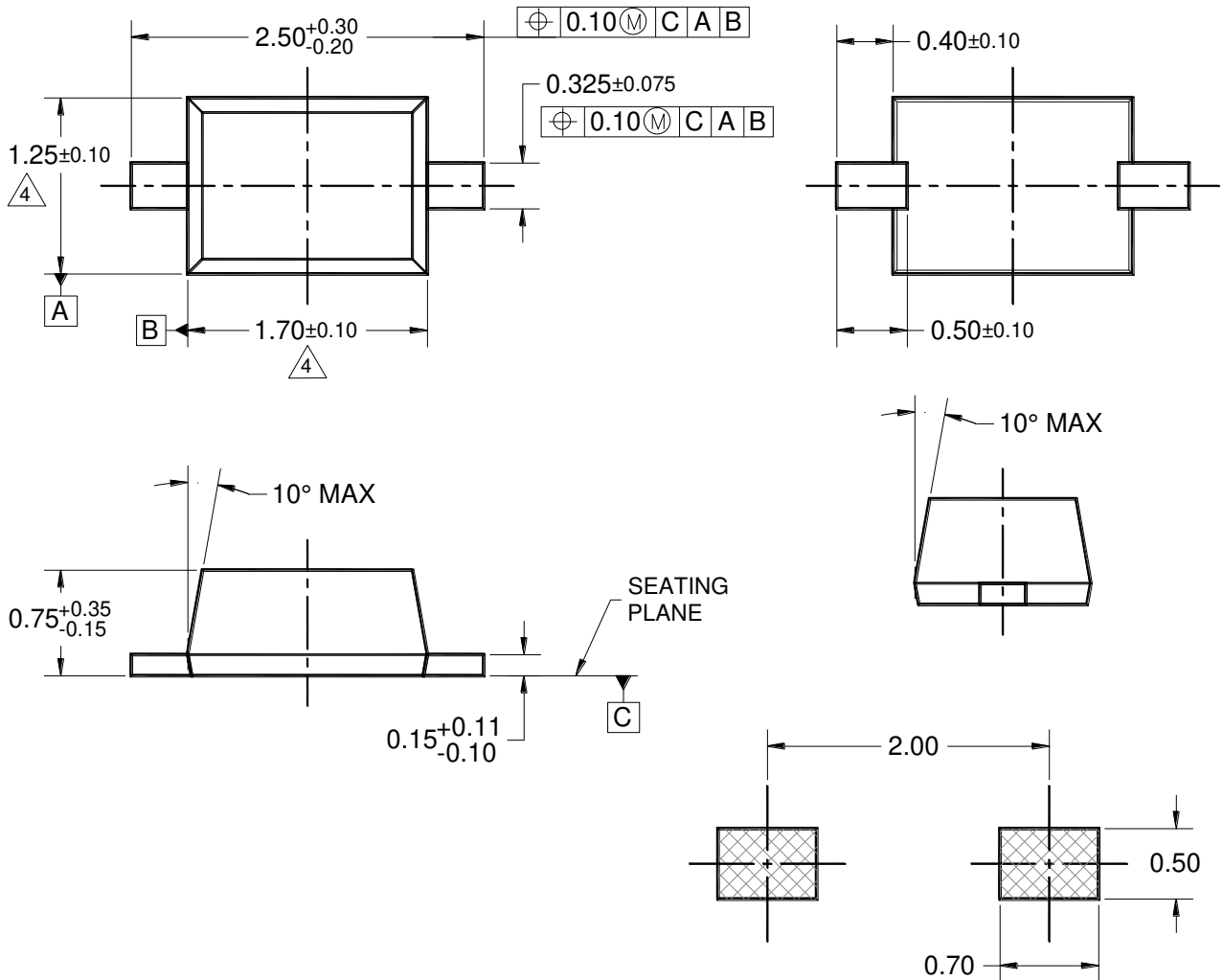


**Fig.3 Zener Voltage-Temp. Coefficient Characteristics**

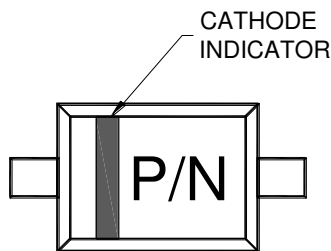


**PACKAGE OUTLINE DIMENSIONS**

**SOD-323F**



**SUGGESTED PAD LAYOUT**



**MARKING DIAGRAM**

P/N = MARKING CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-90.

**4** MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOD323F-018 REV A.

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