

## 1.3W, 3.3V - 56V Zener Diode

### FEATURES

- Wide Zener voltage range selection: 3.3V to 56V
- $V_Z$  Tolerance Selection of  $\pm 5\%$
- Hermetically sealed glass
- RoHS Compliant

### APPLICATIONS

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

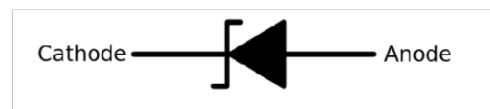
### MECHANICAL DATA

- Case: DO-41
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 242mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	3.3 - 56	V
$P_D$	1.3	W
$T_{J\ MAX}$	200	$^{\circ}\text{C}$
Package	DO-41	
Configuration	Single die	



DO-41



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

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	$P_D$	1.3	W
Junction temperature range	$T_J$	-65 to +200	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-65 to +200	$^{\circ}\text{C}$

### THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	130	$^{\circ}\text{C}/\text{W}$

**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	
		$V_Z @ I_{ZT}^{(1)}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$	
		V			mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V
		Min	Nom	Max		Max	Max		Max	
BZX85C3V3	BZX85C3V3	3.1	3.3	3.5	80	20	400	1	40	1
BZX85C3V6	BZX85C3V6	3.4	3.6	3.8	60	20	500	1	20	1
BZX85C3V9	BZX85C3V9	3.7	3.9	4.1	60	15	500	1	20	1
BZX85C4V3	BZX85C4V3	4.0	4.3	4.6	50	13	500	1	3	1
BZX85C4V7	BZX85C4V7	4.4	4.7	5.0	45	13	500	1	3	1
BZX85C5V1	BZX85C5V1	4.8	5.1	5.4	45	10	500	1	1	1.5
BZX85C5V6	BZX85C5V6	5.2	5.6	6.0	45	7	400	1	1	2
BZX85C6V2	BZX85C6V2	5.8	6.2	6.6	35	4	300	1	1	3
BZX85C6V8	BZX85C6V8	6.4	6.8	7.2	35	3.5	300	1	1	4
BZX85C7V5	BZX85C7V5	7.0	7.5	7.9	35	3	200	0.5	1	4.5
BZX85C8V2	BZX85C8V2	7.7	8.2	8.7	25	5	200	0.5	1	6.2
BZX85C9V1	BZX85C9V1	8.5	9.1	9.6	25	5	200	0.5	1	6.9
BZX85C10	BZX85C10	9.4	10	10.6	25	7	200	0.5	0.5	7.5
BZX85C11	BZX85C11	10.4	11	11.6	20	8	300	0.5	0.5	8.2
BZX85C12	BZX85C12	11.4	12	12.7	20	9	350	0.5	0.5	9.1
BZX85C13	BZX85C13	12.4	13	14.1	20	10	400	0.5	0.5	10
BZX85C15	BZX85C15	13.8	15	15.6	15	15	500	0.5	0.5	11
BZX85C16	BZX85C16	15.3	16	17.1	15	15	500	0.5	0.5	12
BZX85C18	BZX85C18	16.8	18	19.1	15	20	500	0.5	0.5	13
BZX85C20	BZX85C20	18.8	20	21.2	10	24	600	0.5	0.5	15
BZX85C22	BZX85C22	20.8	22	23.3	10	25	600	0.5	0.5	16
BZX85C24	BZX85C24	22.8	24	25.6	10	25	600	0.5	0.5	18
BZX85C27	BZX85C27	25.1	27	28.9	8	30	750	0.25	0.5	20
BZX85C30	BZX85C30	28.0	30	32.0	8	30	1000	0.25	0.5	22
BZX85C33	BZX85C33	31.0	33	35.0	8	35	1000	0.25	0.5	24
BZX85C36	BZX85C36	34.0	36	38.0	8	40	1000	0.25	0.5	25
BZX85C39	BZX85C39	37.0	39	41.0	6	45	1000	0.25	0.5	27
BZX85C43	BZX85C43	40.0	43	46.0	6	50	1000	0.25	0.5	30
BZX85C47	BZX85C47	44.0	47	50.0	4	90	1500	0.25	0.5	33
BZX85C51	BZX85C51	48.0	51	54.0	4	115	1500	0.25	0.5	36
BZX85C56	BZX85C56	52.0	56	60.0	4	120	2000	0.25	0.5	39

**Notes:**

1. The Zener Voltage ( $V_Z$ ) is tested under pulse condition of 10ms.
2. The device numbers listed have a standard tolerance on the nominal Zener voltage of  $\pm 5\%$
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  $I_{ZK}$

**ORDERING INFORMATION**

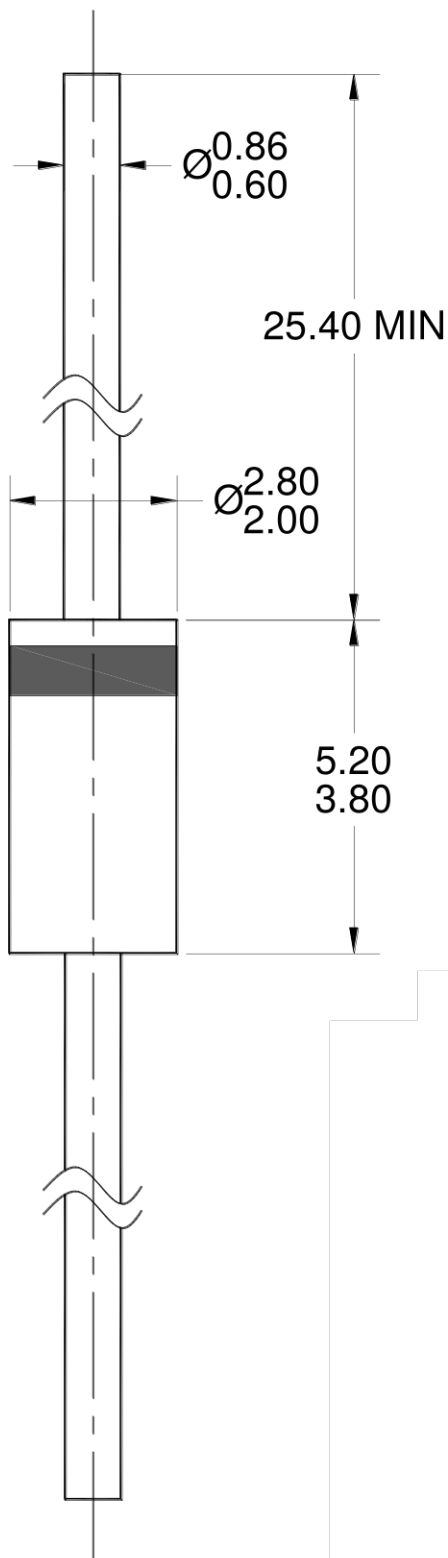
<b>ORDERING CODE<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
BZX85Cx R0G	DO-41	5,000 / 14" Reel
BZX85Cx A0G	DO-41	3,000 / Ammo Box

**Notes:**

1. "x" defines voltage from 3.3V (BZX85C3V3) to 56V (BZX85C56)

**PACKAGE OUTLINE DIMENSIONS**

**DO-41**



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-DO41-059 REV A.



XX = MARKING CODE

MARKING DIAGRAM

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