

## Features

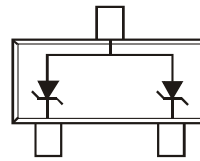
- Dual Zeners in Common Anode Configuration
- 300 mW Power Dissipation Rating
- Ideally Suited for Automated Insertion
- $\Delta V_Z$  For Both Diodes in One Case is  $\leq 5\%$
- Common Cathode Style Available See DZ Series
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 2)**
- **“Green” Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## ESD Sensitivity Rating

- AEC-Q101, HBM - 8kV, MM - 400V
- IEC 61000-4-2, Air - 15kV, Contact - 8kV



Top View



Device Schematic

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_D$	300	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	417	$^{\circ}C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^{\circ}C$

- Notes:
1. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. No purposefully added lead.
  3. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or  $Sb_2O_3$  Fire Retardants.

### Electrical Characteristics @<sub>T<sub>A</sub></sub> = 25°C unless otherwise specified

Type Number	Marking Code	Zener Voltage Range (Note 4)	Maximum Zener Impedance (Note 5)		Typical Temperature Coefficient <i>T<sub>C</sub></i> (%/°C)	Min. Reverse Voltage (Note 4) @ <i>I<sub>R</sub></i> = 0.1µA <i>V<sub>R</sub></i> (Volts)
		@ <i>I<sub>ZT</sub></i> = 5.0mA	<i>Z<sub>ZT</sub></i> @ <i>I<sub>ZT</sub></i> = 5.0mA	<i>Z<sub>ZK</sub></i> @ <i>I<sub>ZK</sub></i> = 1.0mA		
		<i>V<sub>Z</sub></i> (Volts)	Ohms	Ohms		
AZ23C2V7	KD1	2.5-2.9	83	500	-0.065	—
AZ23C3V0	KD2	2.8-3.2	95	500	-0.060	—
AZ23C3V3	KD3	3.1-3.5	95	500	-0.055	—
AZ23C3V6	KD4	3.4-3.8	95	500	-0.055	—
AZ23C3V9	KD5	3.7-4.1	95	500	-0.050	—
AZ23C4V3	KD6	4.0-4.6	95	500	-0.035	—
AZ23C4V7	KD7	4.4-5.0	78	500	-0.015	—
AZ23C5V1	KD8	4.8-5.4	60	480	+0.005	0.8
AZ23C5V6	KD9	5.2-6.0	40	400	+0.020	1.0
AZ23C6V2	KDA	5.8-6.6	10	200	+0.030	2.0
AZ23C6V8	KDB	6.4-7.2	8.0	150	+0.045	3.0
AZ23C7V5	KDC	7.0-7.9	7.0	50	+0.050	5.0
AZ23C8V2	KDD	7.7-8.7	7.0	50	+0.055	6.0
AZ23C9V1	KDE	8.5-9.6	10	50	+0.065	7.0
AZ23C10	KDF	9.4-10.6	15	70	+0.065	7.5
AZ23C11	KDG	10.4-11.6	20	70	+0.070	8.5
AZ23C12	KDH	11.4-12.7	20	90	+0.075	9.0
AZ23C13	KDI	12.4-14.1	25	110	+0.080	10.0
AZ23C15	KDJ	13.8-15.6	30	110	+0.080	11.0
AZ23C16	KDK	15.3-17.1	40	170	+0.090	12.0
AZ23C18	KDL	16.8-19.1	50	170	+0.090	14.0
AZ23C20	KDM	18.8-21.2	50	220	+0.090	15.0
AZ23C22	KDN	20.8-23.3	55	220	+0.090	17.0
AZ23C24	KDO	22.8-25.6	80	220	+0.090	18.0
AZ23C27	KDP	25.1-28.9	80	250	+0.090	20.0
AZ23C30	KDQ	28-32	80	250	+0.090	22.5
AZ23C33	KDR	31-35	80	250	+0.090	25.0
AZ23C36	KDS	34-38	90	250	+0.090	27.0
AZ23C39	KDT	37-41	90	300	+0.110	29.0
AZ23C43	D30	40-46	100	700	+0.110	32.0
AZ23C47	D31	44-50	100	750	+0.110	35.0
AZ23C51	D32	48-54	100	750	+0.110	38.0

Notes: 4. Short duration pulse test used to minimize self-heating effect.  
5. *f* = 1kHz.

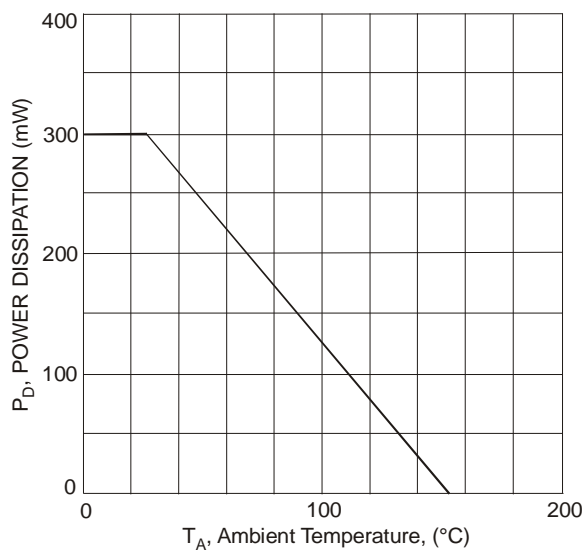


Fig. 1 Power Derating Curve

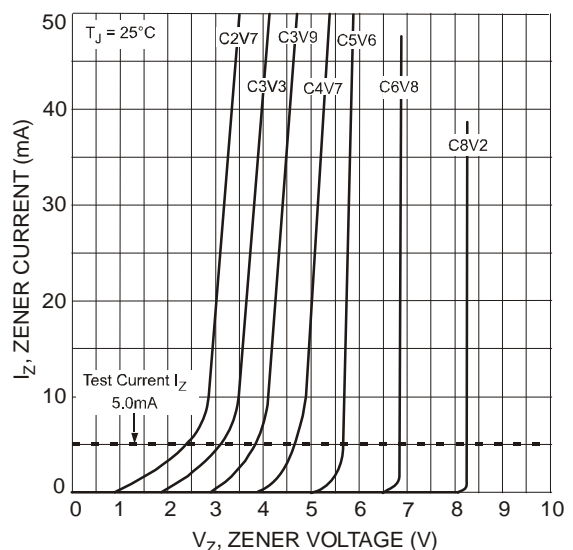


Fig. 2 Typical Zener Breakdown Characteristics

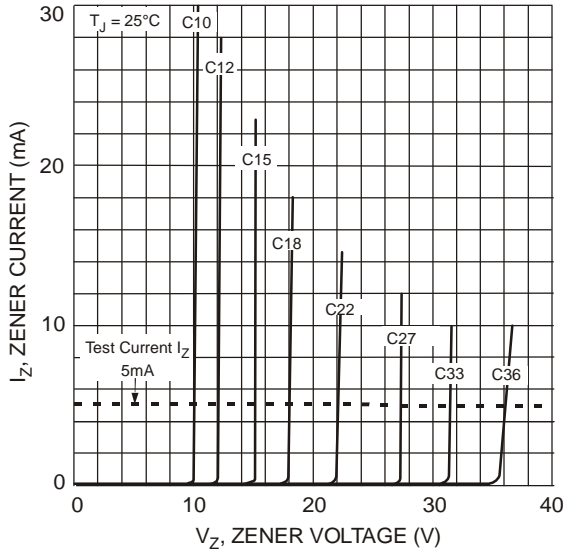


Fig. 3 Typical Zener Breakdown Characteristics

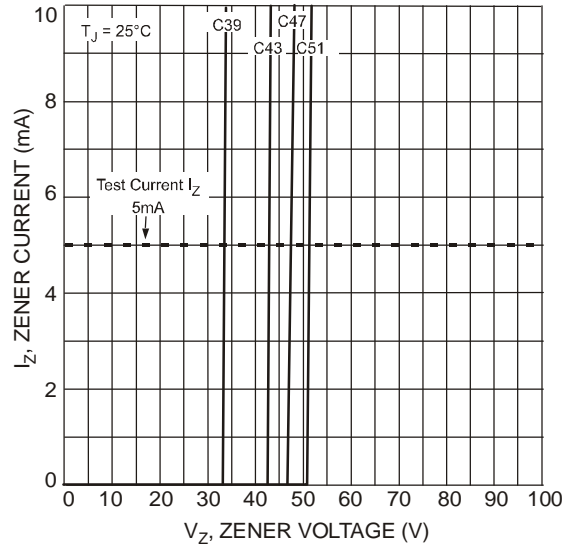


Fig. 4 Typical Zener Breakdown Characteristics

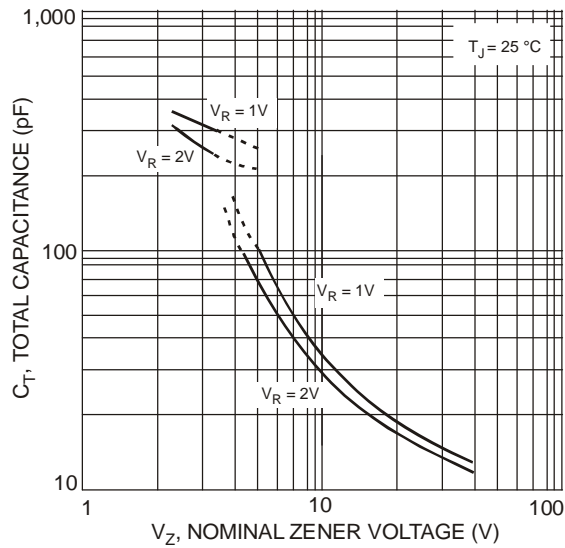


Fig. 5 Typical Total Capacitance vs. Nominal Zener Voltage

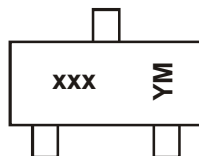
**Ordering Information** (Note 6)

Part Number	Case	Packaging
(Type Number)-7-F*	SOT-23	3000/Tape & Reel

\*Add "-7-F" to the appropriate type number in Electrical Characteristics Table on Page 2 example: 6.2V Zener = AZ23C6V2-7F

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

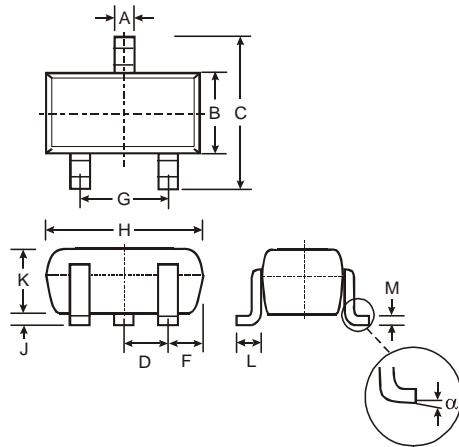


xxx = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year (ex: N = 2002)  
M = Month (ex: 9 = September)

Date Code Key

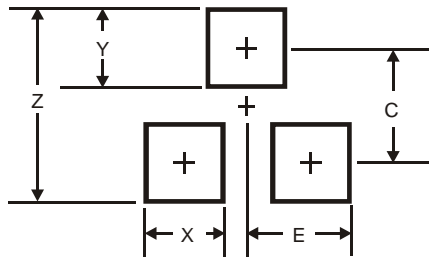
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Code	1	2	3	4	5	6	7	8	9	O	N	D			

**Package Outline Dimensions**



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
F	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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