



300mW DUAL SURFACE MOUNT ZENER DIODE

Features

- **Dual Zeners in Common Anode Configuration**
- 300 mW Power Dissipation Rating
- Ideally Suited for Automated Insertion
- Δ V_Z For Both Diodes in One Case is \leq 5%
- Common Cathode Style Available See DZ Series
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Notes 3 & 4)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Diagram
- Approximate Weight: 0.008 grams

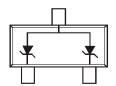
ESD Sensitivity Rating

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





Top View



Device Schematic

Ordering Information (Note 5)

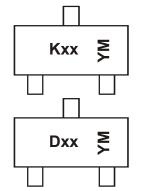
Part Number	Qualification	Case	Packaging
(Type Number)-7-F*	Commercial	SOT23	3000/Tape & Reel
(Type Number)Q-7-F*	Automotive	SOT23	3000/Tape & Reel

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

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. Notes:

- 2. See http://www.diodes.com for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. Product manufactured with Date 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 Sb₂O₃ Fire Retardants.
- 5. For Packaging Details, go to our website at http://www.diodes.com.

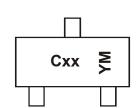
Marking Information



K/D = SAT (Shanghai Assembly / Test site) xx = Product Type Marking Code See Electrical Characteristics Table

YM = Date Code Marking Y = Year (ex: Z = 2012)

M = Month (ex: 9 = September)



C = CAT (Chengdu Assembly / Test site) xx = Product Type Marking Code See Electrical Characteristics Table

YM = Date Code Marking Y = Year (ex: Z = 2012)

M = Month (ex: 9 = September)

Date Code Key

Date Code I															
Year	1998		2002	2003	2004		2010	2011	2012	2013	2014	2015	2016	2017	2018
Code	J		N	Р	R		Х	Υ	Z	Α	В	С	D	Е	F
Month	Jan	Fel	b	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oct	t I	Nov	Dec
Code	1	2		3	4	5	6		7	8	9	0		N	D



Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_{D}	300	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{ heta JA}$	417	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

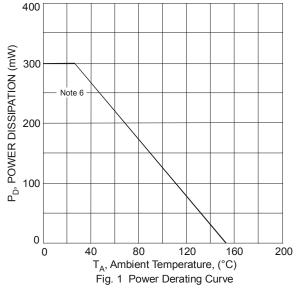
Notes: 6. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at http://www.diodes.com.

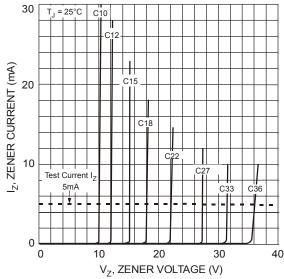
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Type Marking		Zener Voltage Range (Note 7)	Zener Im	mum Ipedance IkHz	Typical Temperature Coefficient	Min. Reverse Voltage (Note 7)
Number	Code	@ $I_{ZT} = 5.0 mA$	$Z_{ZT} @ I_{ZT} = 5.0 mA$	$Z_{ZK} @ I_{ZK} = 1.0 mA$	Coefficient	@ $I_R = 0.1 \mu A$
		Vz (Volts)	Ohms	Ohms	TC (%/°C)	V _R (Volts)
AZ23C2V7	D1	2.5 - 2.9	83	500	-0.065	_
AZ23C3V0	D2	2.8 - 3.2	95	500	-0.060	_
AZ23C3V3	D3	3.1 - 3.5	95	500	-0.055	_
AZ23C3V6	D4	3.4 - 3.8	95	500	-0.055	_
AZ23C3V9	D5	3.7 - 4.1	95	500	-0.050	_
AZ23C4V3	D6	4.0 - 4.6	95	500	-0.035	_
AZ23C4V7	D7	4.4 - 5.0	78	500	-0.015	_
AZ23C5V1	D8	4.8 - 5.4	60	480	+0.005	0.8
AZ23C5V6	D9	5.2 - 6.0	40	400	+0.020	1.0
AZ23C6V2	DA	5.8 - 6.6	10	200	+0.030	2.0
AZ23C6V8	DB	6.4 - 7.2	8.0	150	+0.045	3.0
AZ23C7V5	DC	7.0 - 7.9	7.0	50	+0.050	5.0
AZ23C8V2	DD	7.7 - 8.7	7.0	50	+0.055	6.0
AZ23C9V1	DE	8.5 - 9.6	10	50	+0.065	7.0
AZ23C10	DF	9.4 - 10.6	15	70	+0.065	7.5
AZ23C11	DG	10.4 - 11.6	20	70	+0.070	8.5
AZ23C12	DH	11.4 - 12.7	20	90	+0.075	9.0
AZ23C13	DI	12.4 - 14.1	25	110	+0.080	10.0
AZ23C15	DJ	13.8 - 15.6	30	110	+0.080	11.0
AZ23C16	DK	15.3 - 17.1	40	170	+0.090	12.0
AZ23C18	DL	16.8 - 19.1	50	170	+0.090	14.0
AZ23C20	DM	18.8 - 21.2	50	220	+0.090	15.0
AZ23C22	DN	20.8 - 23.3	55	220	+0.090	17.0
AZ23C24	DO	22.8 - 25.6	80	220	+0.090	18.0
AZ23C27	DP	25.1 - 28.9	80	250	+0.090	20.0
AZ23C30	DQ	28 - 32	80	250	+0.090	22.5
AZ23C33	DR	31 - 35	80	250	+0.090	25.0
AZ23C36	DS	34 - 38	90	250	+0.090	27.0
AZ23C39	DT	37 - 41	90	300	+0.110	29.0
AZ23C43	30	40 - 46	100	700	+0.110	32.0
AZ23C47	31	44 - 50	100	750	+0.110	35.0
AZ23C51	32	48 - 54	100	750	+0.110	38.0

Notes: 7. Short duration pulse test used to minimize self-heating effect.







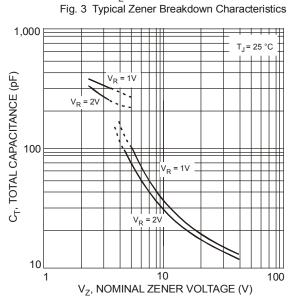


Fig. 5 Typical Total Capacitance vs. Nominal Zener Voltage

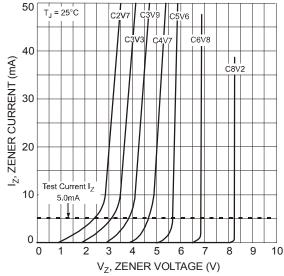


Fig. 2 Typical Zener Breakdown Characteristics

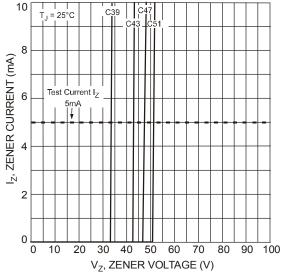
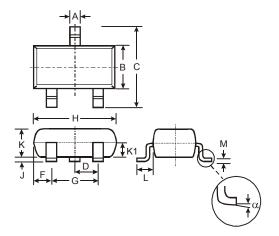


Fig. 4 Typical Zener Breakdown Characteristics

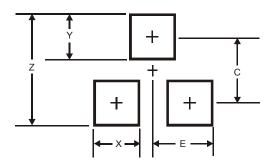


Package Outline Dimensions



SOT23							
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
С	2.30	2.50	2.40				
D	0.89	1.03	0.915				
F	0.45	0.60	0.535				
G	1.78	2.05	1.83				
Н	2.80	3.00	2.90				
J	0.013	0.10	0.05				
K	0.903	1.10	1.00				
K1	1	-	0.400				
L	0.45	0.61	0.55				
М	0.085	0.18	0.11				
α	0°	8°	-				
All Dimensions in mm							

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Υ	0.9
С	2.0
Е	1.35



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