300mW DUAL SURFACE MOUNT ZENER DIODE

Features

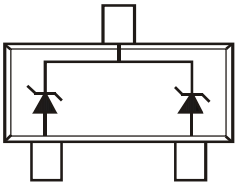
- Dual Zeners in Common Cathode Configuration
- 300 mW Power Dissipation
- Ideally Suited for Automated Insertion
- ΔV_Z For Both Diodes in One Case is $\leq$ 5%
- Common Anode Style Available, See AZ Series
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2 and 3)**
- **Qualified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

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 lead frame).
- Polarity: See Diagram
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.008 grams (approximate)



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	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	–65 to +150	°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. Halogen and Antimony Free.
3. Product manufactured with Data Code OW (week 42, 2009) and newer are built with Green Molding Compound. Product manufactured prior to Date Code OW are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.

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Electrical Characteristics @T_A = 25°C unless otherwise specified

Type Number	Marking Code	Zener Voltage Range (Note 4)	Maximum Zener Impedance (Note 5)		Typical Temperature Coefficient	Min. Reverse Voltage (Note 4)
		@ I_{ZT} = 5.0mA	Z_{ZT} @ I_{ZT} = 5.0mA	Z_{ZK} @ I_{ZK} = 1.0mA		@ I_R = 0.1µA
		V_Z (Volts)	Ohms	Ohms	T_C (%/°C)	V_R (Volts)
DZ23C2V7	KV1	2.5-2.9	83	500	-0.065	—
DZ23C3V0	KV2	2.8-3.2	95	500	-0.060	—
DZ23C3V3	KV3	3.1-3.5	95	500	-0.055	—
DZ23C3V6	KV4	3.4-3.8	95	500	-0.055	—
DZ23C3V9	KV5	3.7-4.1	95	500	-0.050	—
DZ23C4V3	KV6	4.0-4.6	95	500	-0.035	—
DZ23C4V7	KV7	4.4-5.0	78	500	-0.015	—
DZ23C5V1	KV8	4.8-5.4	60	480	+0.005	0.8
DZ23C5V6	KV9	5.2-6.0	40	400	+0.020	1.0
DZ23C6V2	KVA	5.8-6.6	10	200	+0.030	2.0
DZ23C6V8	KVB	6.4-7.2	8.0	150	+0.045	3.0
DZ23C7V5	KVC	7.0-7.9	7.0	50	+0.050	5.0
DZ23C8V2	KVD	7.7-8.7	7.0	50	+0.055	6.0
DZ23C9V1	KVE	8.5-9.6	10	50	+0.065	7.0
DZ23C10	KVF	9.4-10.6	15	70	+0.065	7.5
DZ23C11	KVG	10.4-11.6	20	70	+0.070	8.5
DZ23C12	KVH	11.4-12.7	20	90	+0.075	9.0
DZ23C13	KVI	12.4-14.1	25	110	+0.080	10.0
DZ23C15	KVJ	13.8-15.6	30	110	+0.080	11.0
DZ23C16	KVK	15.3-17.1	40	170	+0.090	12.0
DZ23C18	KVL	16.8-19.1	50	170	+0.090	14.0
DZ23C20	KVM	18.8-21.2	50	220	+0.090	15.0
DZ23C22	KVN	20.8-23.3	55	220	+0.090	17.0
DZ23C24	KVO	22.8-25.6	80	220	+0.090	18.0
DZ23C27	KVP	25.1-28.9	80	250	+0.090	20.0
DZ23C30	KVQ	28-32	80	250	+0.090	22.5
DZ23C33	KVR	31-35	80	250	+0.090	25.0
DZ23C36	KVS	34-38	90	250	+0.090	27.0
DZ23C39	KVT	37-41	90	300	+0.110	29.0
DZ23C43	V30/KVU	40-46	100	700	+0.110	32.0
DZ23C47	V31/KVV	44-50	100	750	+0.110	35.0
DZ23C51	V32/KVW	48-54	100	750	+0.110	38.0

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

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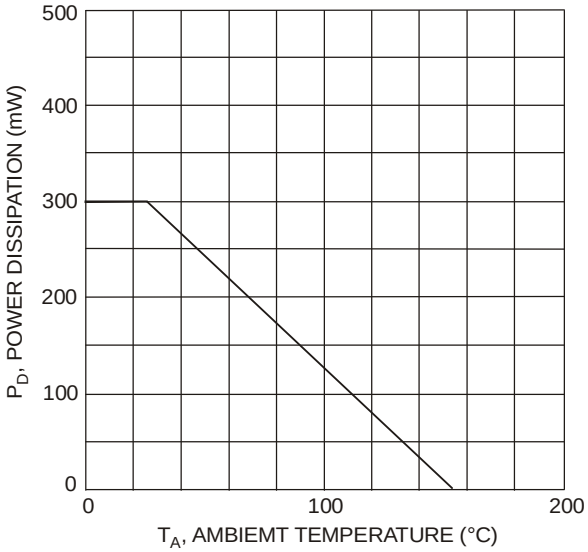


Fig. 1 Power Derating Curve

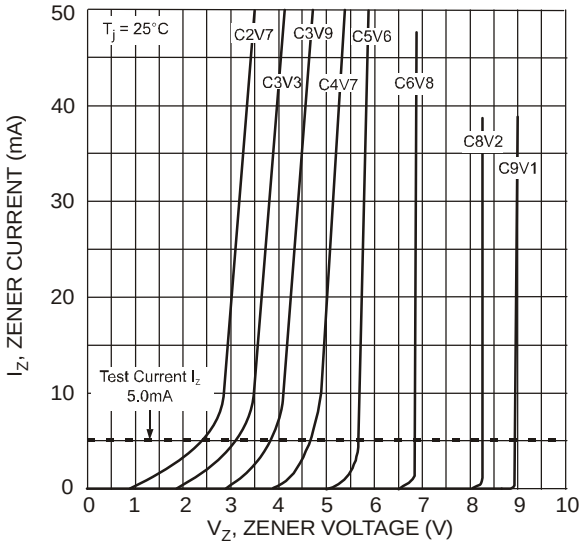


Fig. 2 Typical Zener Breakdown Characteristics

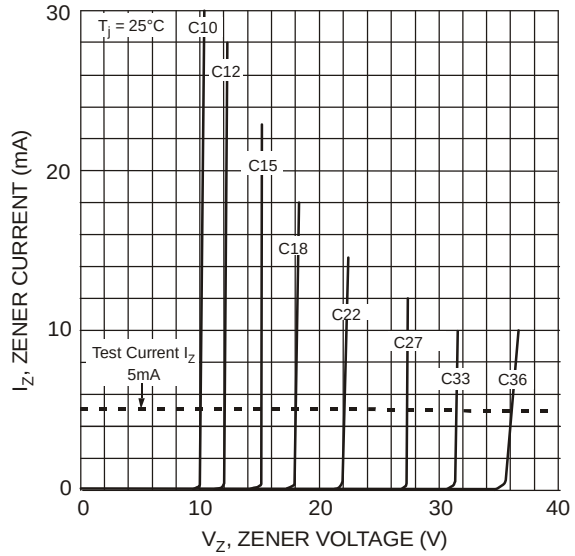


Fig. 3 Typical Zener Breakdown Characteristics

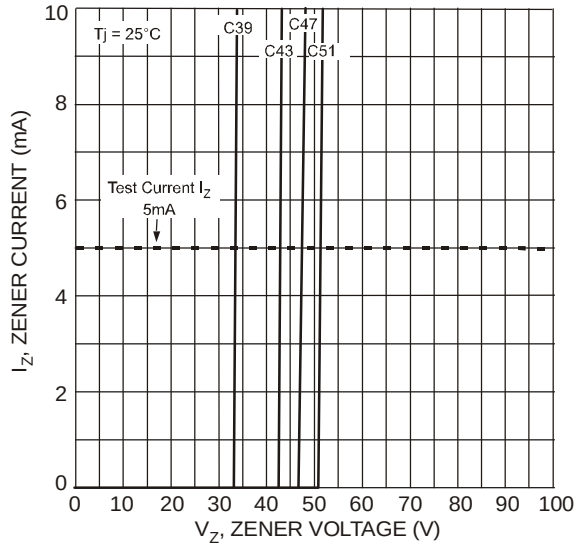


Fig. 4 Typical Zener Breakdown Characteristics

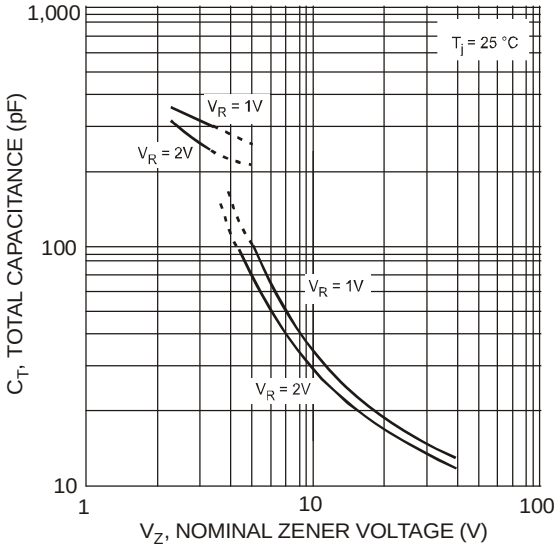


Fig. 5 Typical Total Capacitance vs. Nominal Zener Voltage

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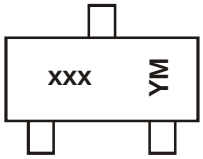
Ordering Information (Note 6)

Device	Packaging	Shipping
(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 = DZ23C6V2-7-F.

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

Marking Information



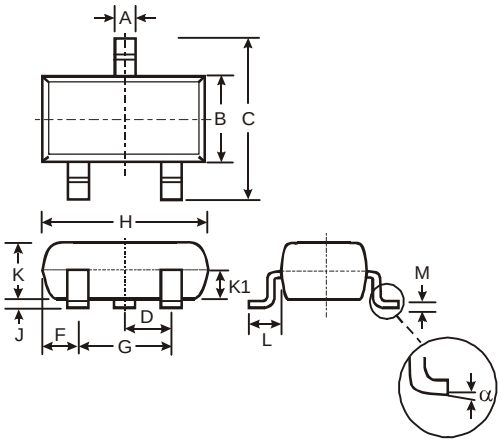
xxx = Product Type Marking Code
(See Electrical Characteristics Table)
YM = Date Code Marking
Y = Year (ex: N = 2002)
M = Month (ex: 9 = September)

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

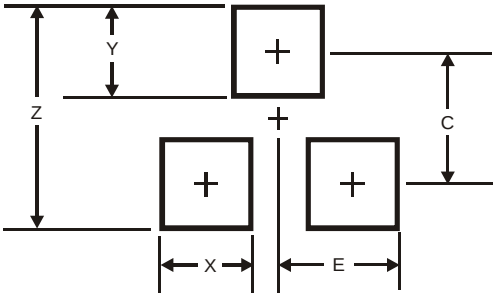
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



SOT-23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	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
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
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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