



**THE DATASHEET OF  
DZ23C6V2-7-F**

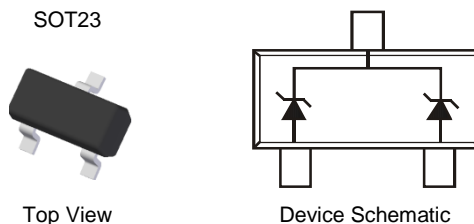


## Features

- Dual Zeners in Common Cathode Configuration
- 300mW Power Dissipation
- Ideally Suited for Automated Insertion
- $\Delta V_Z$  For Both Diodes in One Case is  $\leq 5\%$
- Common Anode Style Available, See AZ23 Series
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

## 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 Lead Frame (Lead Free Plating). Solderable per MIL-STD-202, Method 208<sup>(3)</sup>
- Polarity: See Diagram
- Weight: 0.008 grams (Approximate)



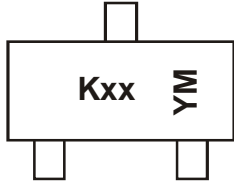
## Ordering Information (Note 4)

Part Number	Qualification	Packaging	Shipping
(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 = DZ23C6V2-7-F.

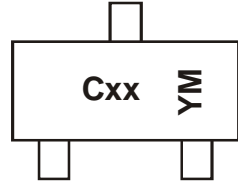
- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. 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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



K = SAT (Shanghai Assembly / Test Site)  
 xx = Product Type Marking Code  
 See Electrical Characteristics Table  
 YM = Date Code Marking  
 Y = Year (ex: I = 2021)  
 M = Month (ex: 9 = September)

For DZ23C15-7-F only:  
 Assembly/Test in Shanghai or Chuzhou  
 M or  $\bar{M}$  = 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: I = 2021)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2013	.....	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	A	.....	I	J	K	L	M	N	O	P	R	S

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

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	$P_D$	300	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	417	$^{\circ}C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^{\circ}C$

Note: 5. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at <http://www.diodes.com>.

## Electrical Characteristics (@ $T_A = +25^{\circ}C$ , unless otherwise specified.)

Type Number	Marking Code	Zener Voltage Range (Note 6)	Maximum Zener Impedance $f = 1kHz$		Typical Temperature Coefficient	Minimum Reverse Voltage (Note 6)
		@ $I_{ZT} = 5.0mA$	$Z_{ZT} @ I_{ZT} = 5.0mA$	$Z_{ZK} @ I_{ZK} = 1.0mA$		@ $I_R = 0.1\mu A$
		$V_Z$ (V)	$\Omega$	$\Omega$	TC (%/ $^{\circ}C$ )	$V_R$ (V)
DZ23C2V7	V1	2.5 to 2.9	83	500	-0.065	—
DZ23C3V0	V2	2.8 to 3.2	95	500	-0.060	—
DZ23C3V3	V3	3.1 to 3.5	95	500	-0.055	—
DZ23C3V6	V4	3.4 to 3.8	95	500	-0.055	—
DZ23C3V9	V5	3.7 to 4.1	95	500	-0.050	—
DZ23C4V3	V6	4.0 to 4.6	95	500	-0.035	—
DZ23C4V7	V7	4.4 to 5.0	78	500	-0.015	—
DZ23C5V1	V8	4.8 to 5.4	60	480	+0.005	0.8
DZ23C5V6	V9	5.2 to 6.0	40	400	+0.020	1.0
DZ23C6V2	VA	5.8 to 6.6	10	200	+0.030	2.0
DZ23C6V8	VB	6.4 to 7.2	8.0	150	+0.045	3.0
DZ23C7V5	VC	7.0 to 7.9	7.0	50	+0.050	5.0
DZ23C8V2	VD	7.7 to 8.7	7.0	50	+0.055	6.0
DZ23C9V1	VE	8.5 to 9.6	10	50	+0.065	7.0
DZ23C10	VF	9.4 to 10.6	15	70	+0.065	7.5
DZ23C11	VG	10.4 to 11.6	20	70	+0.070	8.5
DZ23C12	VH	11.4 to 12.7	20	90	+0.075	9.0
DZ23C13	VI	12.4 to 14.1	25	110	+0.080	10.0
DZ23C15	VJ	13.8 to 15.6	30	110	+0.080	11.0
DZ23C16	VK	15.3 to 17.1	40	170	+0.090	12.0
DZ23C18	VL	16.8 to 19.1	50	170	+0.090	14.0
DZ23C20	VM	18.8 to 21.2	50	220	+0.090	15.0
DZ23C22	VN	20.8 to 23.3	55	220	+0.090	17.0
DZ23C24	VO	22.8 to 25.6	80	220	+0.090	18.0
DZ23C27	VP	25.1 to 28.9	80	250	+0.090	20.0
DZ23C30	VQ	28 to 32	80	250	+0.090	22.5
DZ23C33	VR	31 to 35	80	250	+0.090	25.0
DZ23C36	VS	34 to 38	90	250	+0.090	27.0
DZ23C39	VT	37 to 41	90	300	+0.110	29.0
DZ23C43	VU	40 to 46	100	700	+0.110	32.0
DZ23C47	VV	44 to 50	100	750	+0.110	35.0
DZ23C51	VW	48 to 54	100	750	+0.110	38.0

Note: 6. Short duration pulse test used to minimize self-heating effect.

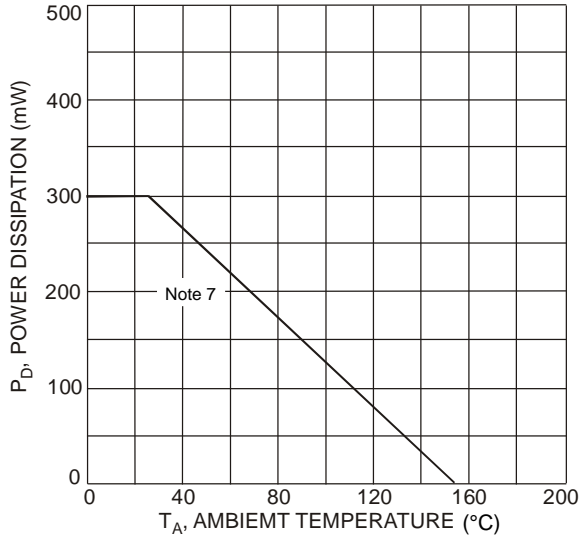


Fig. 1 Power Derating Curve

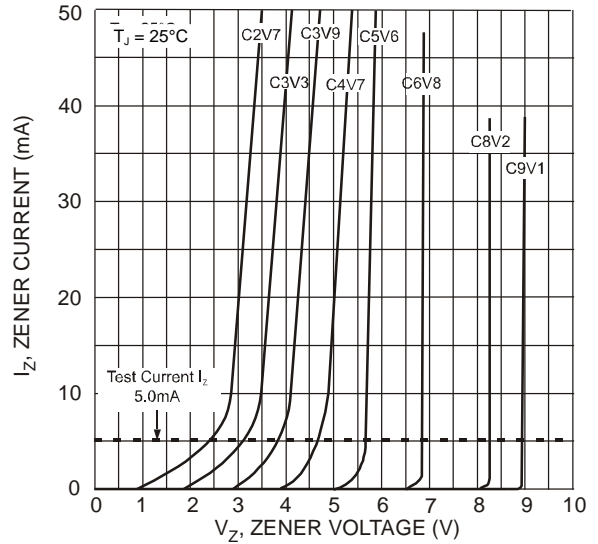


Fig. 2 Typical Zener Breakdown Characteristics

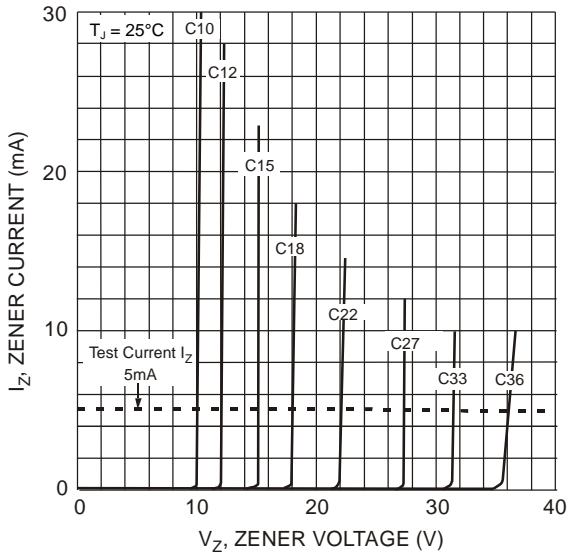


Fig. 3 Typical Zener Breakdown Characteristics

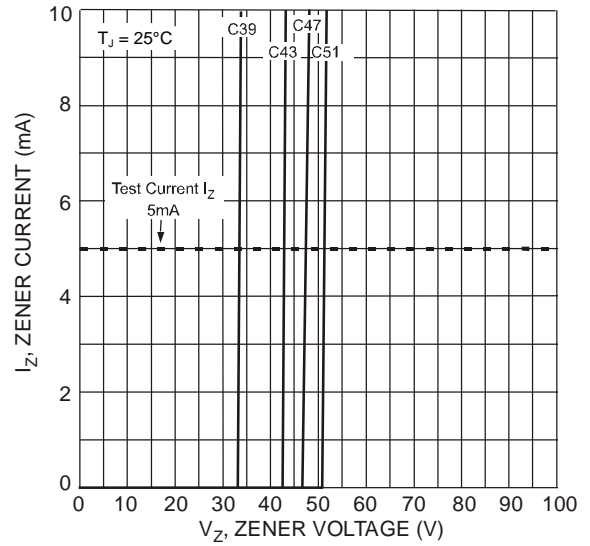


Fig. 4 Typical Zener Breakdown Characteristics

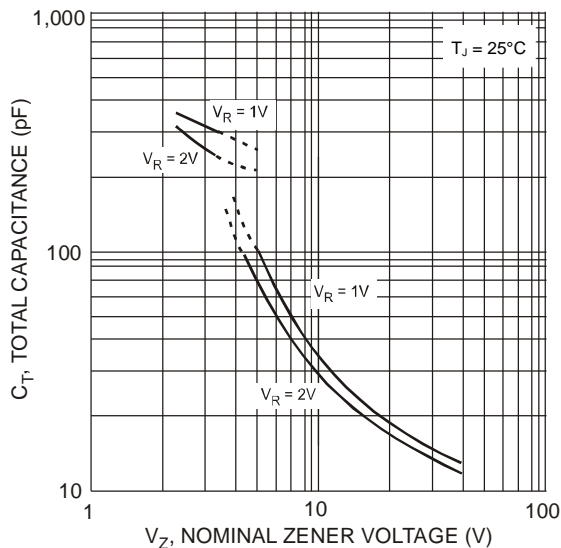
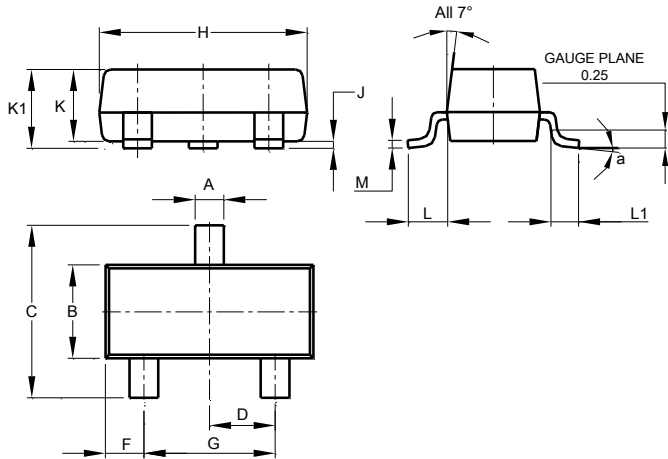


Fig. 5 Typical Total Capacitance vs. Nominal Zener Voltage

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

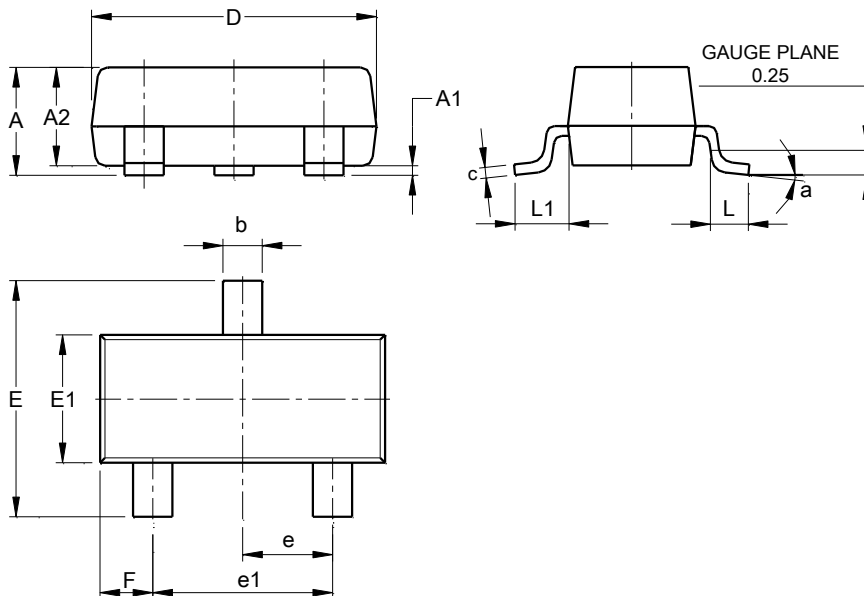
**SOT23**



SOT23			
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	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

For DZ23C15-7-F only:

**SOT23 (Standard)**

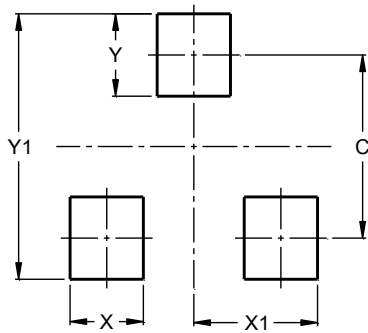


SOT23 (Standard)			
Dim	Min	Max	Typ
A	0.90	1.15	1.025
A1	0.00	0.10	0.05
A2	0.85	1.10	0.975
b	0.30	0.51	0.40
c	0.080	0.202	0.11
D	2.80	3.00	2.90
E	2.25	2.55	2.40
E1	1.20	1.40	1.30
e	0.89	1.03	0.915
e1	1.78	2.05	1.83
F	0.40	0.60	0.535
L1	0.45	0.61	0.55
L	0.25	0.55	0.40
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

**IMPORTANT NOTICE**


1. DIODES INCORPORATED AND ITS SUBSIDIARIES (“DIODES”) MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO ANY INFORMATION CONTAINED IN THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).
2. The Information contained herein is for informational purpose only and is provided only to illustrate the operation of Diodes products described herein and application examples. Diodes does not assume any liability arising out of the application or use of this document or any product described herein. This document is intended for skilled and technically trained engineering customers and users who design with Diodes products. Diodes products may be used to facilitate safety-related applications; however, in all instances customers and users are responsible for (a) selecting the appropriate Diodes products for their applications, (b) evaluating the suitability of the Diodes products for their intended applications, (c) ensuring their applications, which incorporate Diodes products, comply the applicable legal and regulatory requirements as well as safety and functional-safety related standards, and (d) ensuring they design with appropriate safeguards (including testing, validation, quality control techniques, redundancy, malfunction prevention, and appropriate treatment for aging degradation) to minimize the risks associated with their applications.
3. Diodes assumes no liability for any application-related information, support, assistance or feedback that may be provided by Diodes from time to time. Any customer or user of this document or products described herein will assume all risks and liabilities associated with such use, and will hold Diodes and all companies whose products are represented herein or on Diodes’ websites, harmless against all damages and liabilities.
4. Products described herein may be covered by one or more United States, international or foreign patents and pending patent applications. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks and trademark applications. Diodes does not convey any license under any of its intellectual property rights or the rights of any third parties (including third parties whose products and services may be described in this document or on Diodes’ website) under this document.
5. Diodes products are provided subject to Diodes’ Standard Terms and Conditions of Sale (<https://www.diodes.com/about/company/terms-and-conditions/terms-and-conditions-of-sales/>) or other applicable terms. This document does not alter or expand the applicable warranties provided by Diodes. Diodes does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.
6. Diodes products and technology may not be used for or incorporated into any products or systems whose manufacture, use or sale is prohibited under any applicable laws and regulations. Should customers or users use Diodes products in contravention of any applicable laws or regulations, or for any unintended or unauthorized application, customers and users will (a) be solely responsible for any damages, losses or penalties arising in connection therewith or as a result thereof, and (b) indemnify and hold Diodes and its representatives and agents harmless against any and all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim relating to any noncompliance with the applicable laws and regulations, as well as any unintended or unauthorized application.
7. While efforts have been made to ensure the information contained in this document is accurate, complete and current, it may contain technical inaccuracies, omissions and typographical errors. Diodes does not warrant that information contained in this document is error-free and Diodes is under no obligation to update or otherwise correct this information. Notwithstanding the foregoing, Diodes reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes.
8. Any unauthorized copying, modification, distribution, transmission, display or other use of this document (or any portion hereof) is prohibited. Diodes assumes no responsibility for any losses incurred by the customers or users or any third parties arising from any such unauthorized use.

Copyright © 2021 Diodes Incorporated

[www.diodes.com](http://www.diodes.com)

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View DZ23C6V2-7-F on WIN SOURCE](#)

 [Diodes Incorporated](#) Information

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management