



## Features

- Dual Zeners in Common Anode Configuration
- 300mW 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 DZ23 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/>**

## ESD Sensitivity Rating

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



## Ordering Information (Note 4)

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.

- 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 [http://www.diodes.com/quality/lead\\_free/](http://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/D = SAT (Shanghai Assembly / Test site)  
 xx = Product Type Marking Code  
 See Electrical Characteristics Table  
 YM = Date Code Marking  
 Y = Year (ex: F = 2018)  
 M = Month (ex: 9 = September)



For AZ23C5V1-7-F & AZ23C6V2-7-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: F = 2018)  
 M = Month (ex: 9 = September)

Date Code Key

<b>Year</b>	<b>2014</b>	.....	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>
<b>Code</b>	B	.....	I	J	K	L	M	N	O	P	R	S
<b>Month</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>Code</b>	1	2	3	4	5	6	7	8	9	O	N	D

## Thermal Characteristics

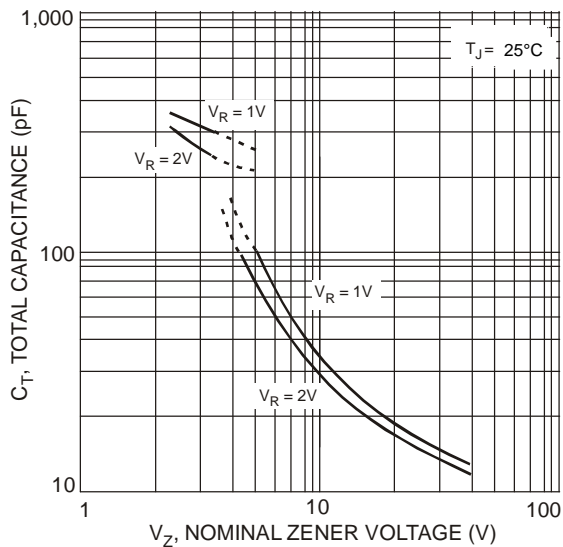
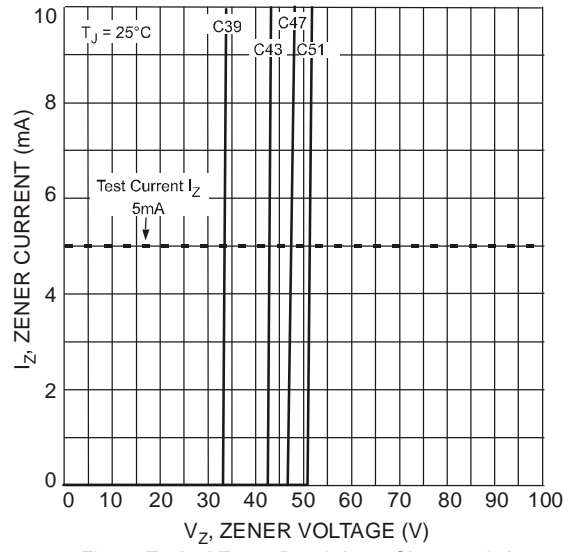
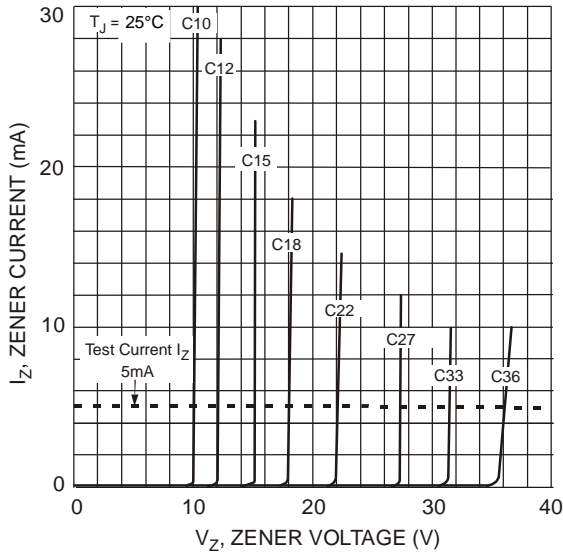
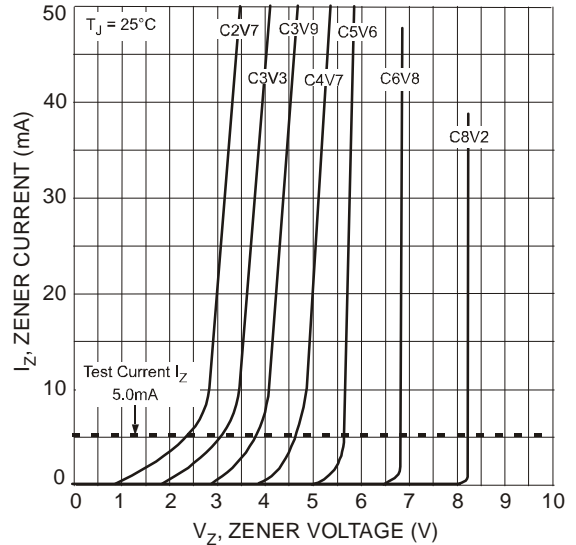
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	$P_D$	300	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	417	$^{\circ}C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^{\circ}C$

Note: 5. Mounted on FR-4 PC Board with recommended pad layout which can be found on our website at <http://www.diodes.com/package-outlines.html>.

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

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



**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 AZ23C5V1-7-F & AZ23C6V2-7-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 SM4124FTR634 on WIN SOURCE](#)

 [Stackpole Electronics Inc. Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

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