



**THE DATASHEET OF  
BZT52HC18WF-7**



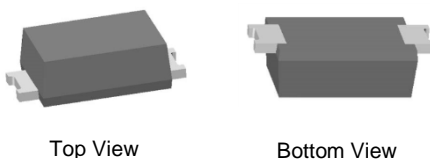
## Features

- Flat Lead Package Design for Low Profile and High Power Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOD123F (Type B)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin Annealed over Copper Alloy Leadframe. Solderable per MIL-STD-202, Method 208 **e3**
- Polarity: Cathode Band
- Weight: 0.015 grams (Approximate)

SOD123F (Type B)



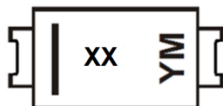
## Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
(Type Number)-7*	AEC-Q101	SOD123F (Type B)	3,000/Tape & Reel

\*Add "-7" to the appropriate type number in Electrical Characteristics Table, example: 6.2V Zener = BZT52HC6V2WF-7.

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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 <http://www.diodes.com/products/packages.html>.

## Marking Information



XX = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year (ex: C = 2015)  
M = Month (ex: 9 = September)

### Date Code Key

Year	2015	2016	2017	2018	2019	2020	2021
Code	C	D	E	F	G	H	I

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

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 5) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Forward Current	I <sub>F</sub>	250	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	375	mW
Power Dissipation (Note 7)	P <sub>D</sub>	830	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	330	°C/W
Thermal Resistance, Junction to Ambient Air (Note 7)	R <sub>θJA</sub>	150	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

- Note:
5. Short duration pulse test used to minimize self-heating effect.
  6. Device mounted on FR-4 PCB with minimum recommended pad layout, as shown in Diodes Incorporated's Suggested Pad Layout document, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
  7. Device mounted on FR-4 PCB with mounting pad for cathode 1cm<sup>2</sup>.

NEW PRODUCT

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Type Number	Marking Codes	Zener Voltage Range (Note 8)			Maximum Zener Impedance (Note 9)			Temperature Coefficient		Total Capacitance	Maximum Reverse Current (Note 8)	
		V <sub>Z</sub> @ I <sub>ZT</sub>		I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	T <sub>C</sub> @ I <sub>ZT</sub>		C <sub>T</sub> @ f = 1MHz, V <sub>R</sub> = 0V	I <sub>R</sub>	@ V <sub>R</sub>
		Min (V)	Max (V)	mA	Ω			mA	Min (mV/°C)	Max (mV/°C)	Max (pF)	μA
BZT52HC2V4WF	WX	2.2	2.6	5	85	400	1	-3.5	0.0	450	50	1
BZT52HC2V7WF	W1	2.5	2.9	5	83	500	1	-3.5	0.0	450	20	1
BZT52HC3V0WF	W2	2.8	3.2	5	95	500	1	-3.5	0.0	450	10	1
BZT52HC3V3WF	W3	3.1	3.5	5	95	500	1	-3.5	0.0	450	5	1
BZT52HC3V6WF	W4	3.4	3.8	5	95	500	1	-3.5	0.0	450	5	1
BZT52HC3V9WF	W5	3.7	4.1	5	95	500	1	-3.5	0.0	450	3	1
BZT52HC4V3WF	W6	4.0	4.6	5	95	500	1	-3.5	0.0	450	3	1
BZT52HC4V7WF	W7	4.4	5.0	5	78	500	1	-3.5	0.2	300	3	2
BZT52HC5V1WF	W8	4.8	5.4	5	60	480	1	-2.7	1.2	300	2	2
BZT52HC5V6WF	W9	5.2	6.0	5	40	400	1	-2.0	2.5	300	1	2
BZT52HC6V2WF	WA	5.8	6.6	5	10	150	1	0.4	3.7	200	3	4
BZT52HC6V8WF	WB	6.4	7.2	5	8	80	1	1.2	4.5	200	2	4
BZT52HC7V5WF	WC	7.0	7.9	5	10	80	1	2.5	5.3	150	1	5
BZT52HC8V2WF	WD	7.7	8.7	5	10	80	1	3.2	6.2	150	0.7	5
BZT52HC9V1WF	WE	8.5	9.6	5	10	100	1	3.8	7.0	150	0.5	6
BZT52HC10WF	WF	9.4	10.6	5	10	70	1	4.5	8.0	90	0.2	7
BZT52HC11WF	WG	10.4	11.6	5	10	70	1	5.4	9.0	85	0.1	8
BZT52HC12WF	WH	11.4	12.7	5	10	90	1	6.0	10.0	85	0.1	8
BZT52HC13WF	WI	12.4	14.1	5	10	110	1	7.0	11.0	80	0.1	8
BZT52HC15WF	WJ	13.8	15.6	5	15	110	1	9.2	13.0	75	0.05	10.5
BZT52HC16WF	WK	15.3	17.1	5	20	170	1	10.4	14.0	75	0.05	11.2
BZT52HC18WF	WL	16.8	19.1	5	20	170	1	12.4	16.0	70	0.05	12.6
BZT52HC20WF	WM	18.8	21.2	5	20	220	1	14.4	18.0	60	0.05	14.0
BZT52HC22WF	WN	20.8	23.3	5	25	220	1	16.4	-	60	0.05	15.4
BZT52HC24WF	WO	22.8	25.6	5	30	220	1	18.4	-	55	0.05	16.8
BZT52HC27WF	WP	25.1	28.9	2	40	250	1	21.4	-	50	0.05	18.9
BZT52HC30WF	WQ	28.0	32.0	2	40	250	1	24.4	-	50	0.05	21.0
BZT52HC33WF	WR	31.0	35.0	2	40	250	1	27.4	-	45	0.05	23.1
BZT52HC36WF	WS	34.0	38.0	2	60	250	1	30.4	-	45	0.05	25.2
BZT52HC39WF	WT	37.0	41.0	2	75	300	1	33.4	-	45	0.05	27.3
BZT52HC43WF	WU	40.0	46.0	2	80	325	1	37.6	-	40	0.05	30.1
BZT52HC47WF	WV	44.0	50.0	2	90	325	1	42.0	-	40	0.05	32.9

Notes: 8. Short duration pulse test used to minimize self-heating effect.  
9. f = 1kHz.

**NEW PRODUCT**



Figure 1 Power Derating Curve

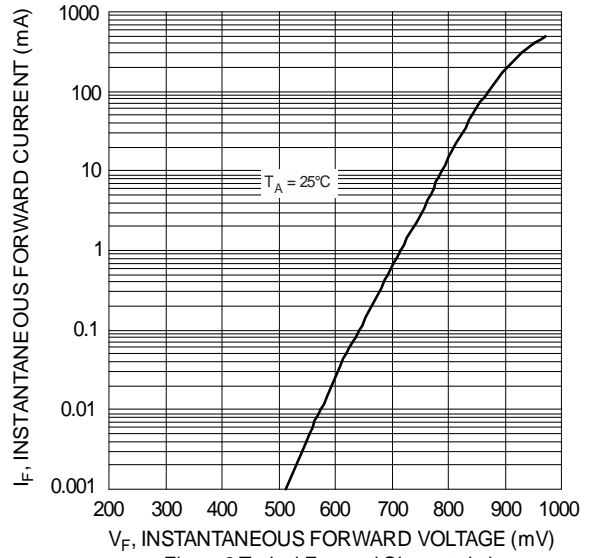


Figure 2 Typical Forward Characteristics

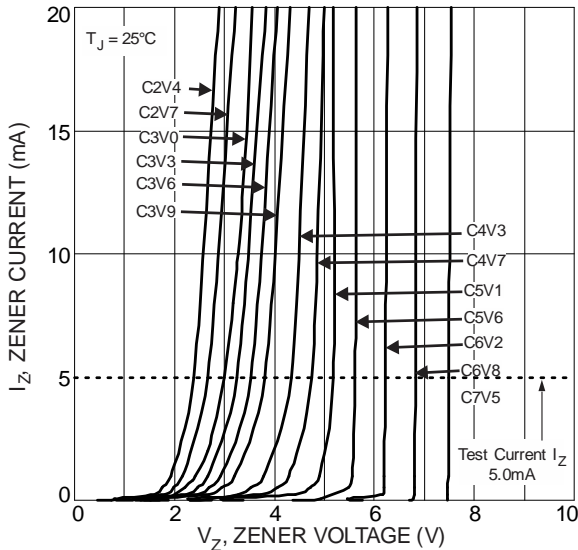


Figure 3 Typical Zener Breakdown Characteristics

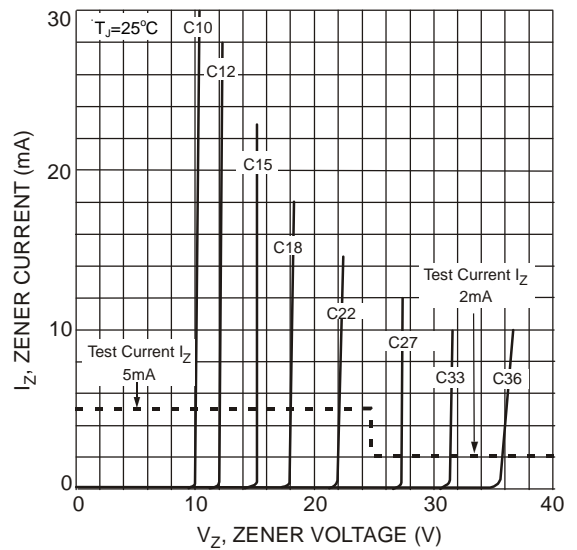


Figure 4 Typical Zener Breakdown Characteristics

**Package Outline Dimensions**

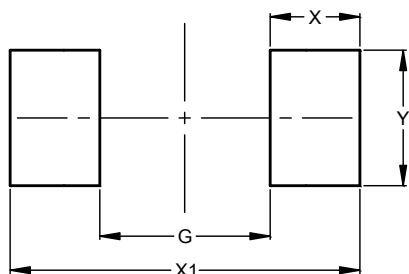
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



SOD123F (Type B)			
Dim	Min	Max	Typ
A	0.81	1.15	-
b	0.80	1.35	-
c	0.05	0.30	-
D	1.70	1.90	1.80
E	2.60	2.80	2.70
He	3.30	3.70	3.50
L	0.35	0.85	-
All Dimensions in mm			

## Suggested Pad Layout

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



Dimensions	Value (in mm)
<b>G</b>	1.90
<b>X</b>	1.00
<b>X1</b>	3.90
<b>Y</b>	1.50

NEW PRODUCT

### IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

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 Incorporated.

### LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

- A. Life support devices or systems are devices or systems which:
  - 1. are intended to implant into the body, or
  - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
- B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2016, 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 BZT52HC18WF-7 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