



**THE DATASHEET OF
BZT52C13LP-7**



Features

- Ultra-Small Leadless Surface Mount Package
- Ideally Suited for Automated Assembly Processes
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Marking Information
- Terminals: Finish — NiPdAu over Copper Leadframe; Solderable per MIL-STD-202, Method 208 Ⓔ4
- Weight: 0.001 grams (Approximate)



Bottom View

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
(Type Number)-7*	Commercial	X1-DFN1006-2	3,000/Tape & Reel
(Type Number)-7B**	Commercial	X1-DFN1006-2	10,000/Tape & Reel

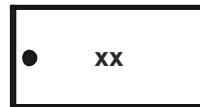
*Add "-7" to the appropriate type number in Electrical Characteristics Table. Example: 6.2V Zener = BZT52C6V2LP-7.

**Add "-7B" to the appropriate type number in Electrical Characteristics Table. Example: 6.2V Zener = BZT52C6V2LP-7B.

- 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 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

BZT52CxxLP-7



Top View
Dot Denotes
Cathode Side

BZT52CxxLP-7B



Top View
Bar Denotes
Cathode Side

xx = Product Type Marking Code

OR



Top View
Bar Denotes
Cathode Side

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 5) @ I _F = 10mA	V _F	0.9	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6) T _A = +25°C	P _D	250	mW
Thermal Resistance, Junction to Ambient Air (Note 6) T _A = +25°C	R _{θJA}	500	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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

Type Number	Marking Code	Zener Voltage Range (Note 5)				Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 5)		Temperature Coefficient @ I _{ZTC} mV/°C		Test Current I _{ZTC} mA
		V _Z @ I _{ZT}			I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R	@ V _R	Min	Max	
		Nom (V)	Min (V)	Max (V)	mA	Ω	mA	μA	V				
BZT52C2V4LP	WX	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7LP	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0LP	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3LP	W3	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52C3V6LP	W4	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52C3V9LP	W5	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V3LP	W6	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V7LP	W7	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52C5V1LP	9Y	5.1	4.8	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2	5
BZT52C5V6LP	9A	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2	2.5	5
BZT52C6V2LP	9B	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7	5
BZT52C6V8LP (Note 7)	9C	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5	5
BZT52C7V5LP	9D	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3	5
BZT52C8V2LP	9E	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1LP	9F	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10LP	9G	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11LP	9H	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12LP	9J	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13LP	9K	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15LP	9L	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16LP	9M	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18LP	9N	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20LP	9P	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	-	5
BZT52C22LP	9R	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	-	5
BZT52C24LP	9S	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	-	5
BZT52C36LP	9W	36	34.0	38.0	2	90	350	0.5	0.1	25.2	36.5	-	5
BZT52C39LP	9X	39	37.0	41.0	2	130	350	0.5	0.1	27.3	36.8	-	5

- Notes:
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>.
 7. Device can withstand a repetitive, 1A pulse with t_p = 300μs and T = 3s (forward or reverse direction).



Fig. 1 Power Derating Curve

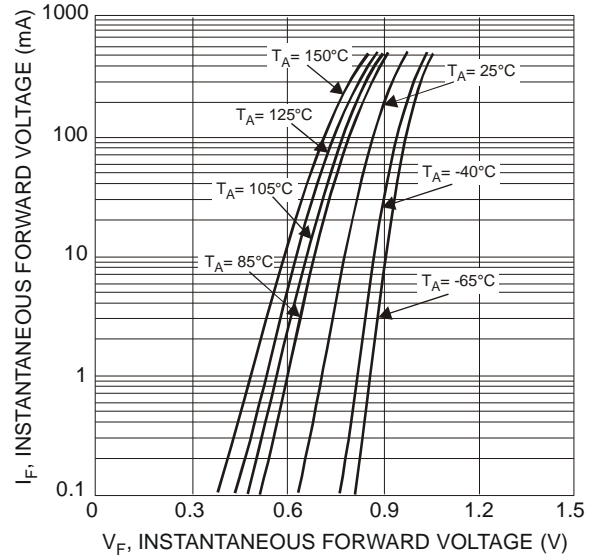


Fig. 2 Typical Forward Characteristics

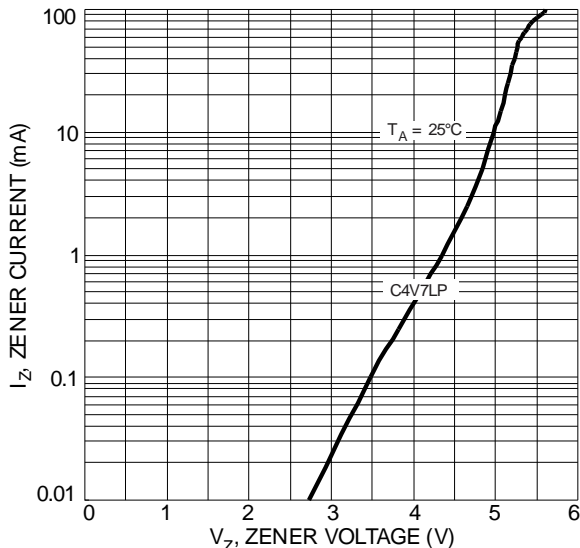


Fig. 3 Typical Reverse Characteristics

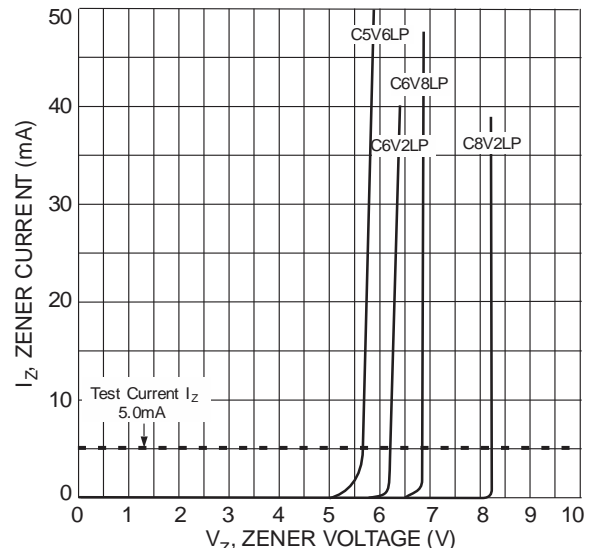


Fig. 4 Typical Zener Breakdown Characteristics



Fig. 5 Typical Zener Breakdown Characteristics

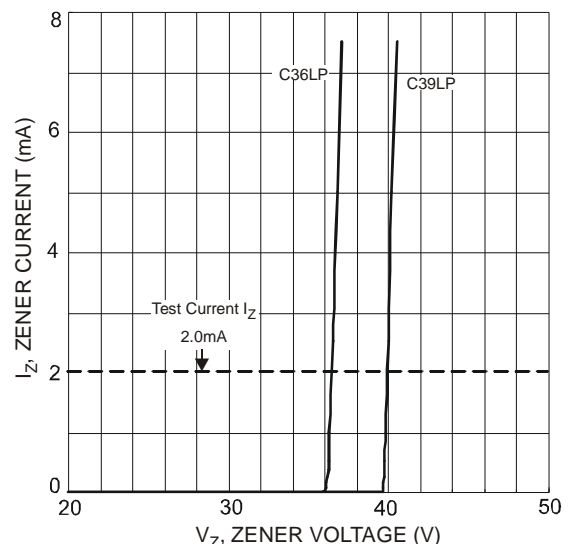


Fig. 6 Typical Zener Breakdown Characteristics

Package Outline Dimensions

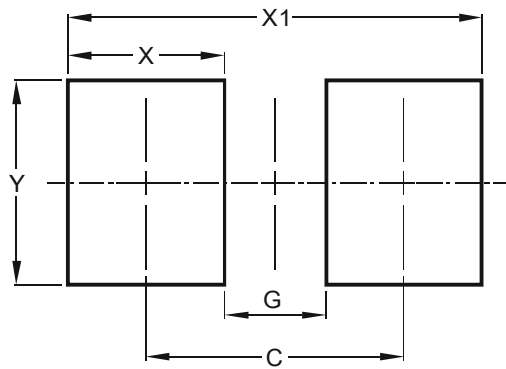
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70

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 © 2015, Diodes Incorporated

www.diodes.com

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View BZT52C13LP-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