BZT52C9V1LPQ - BZT52C16LPQ

SURFACE MOUNT ZENER DIODE

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)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

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 e4
- Weight: 0.001 grams (Approximate)

Bottom View

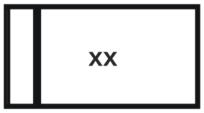
Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
BZT52C9V1LPQ-7	Automotive	X1-DFN1006-2	3000/Tape & Reel
BZT52C13LPQ-7	Automotive	X1-DFN1006-2	3000/Tape & Reel
BZT52C15LPQ-7	Automotive	X1-DFN1006-2	3000/Tape & Reel
BZT52C16LPQ-7	Automotive	X1-DFN1006-2	3000/Tape & Reel

Add “-7” to the appropriate type number in Electrical Characteristics Table. Example: 9.1V Zener = BZT52C9V1LPQ-7

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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to https://www.diodes.com/quality/.
5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



xx = Product Type Marking Code
(See Electrical Characteristics Table)

Top View
Bar Denotes
Cathode Side

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

Characteristic		Symbol	Value	Unit
Forward Voltage (Note 6)	@ I_F = 10mA	V_F	0.9	V

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 7) T_A = +25°C	P_D	250	mW
Thermal Resistance, Junction to Ambient Air	(Note 7) T_A = +25°C	$R_{\theta JA}$	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 6)				Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 6)		Temperature Coefficient @ I_{ZTC} mV/°C		Test Current I_{ZTC}
		V_Z @ I_{ZT}			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R	@ V_R			
		Nom (V)	Min (V)	Max (V)	mA	Ω		mA	µA	V	Min	Max	mA
BZT52C9V1LPQ	9F	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C13LPQ	9K	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15LPQ	9L	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16LPQ	9M	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5

Notes:
6. Short duration pulse test used to minimize self-heating effect.
7. 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 at http://www.diodes.com/package-outlines.html.

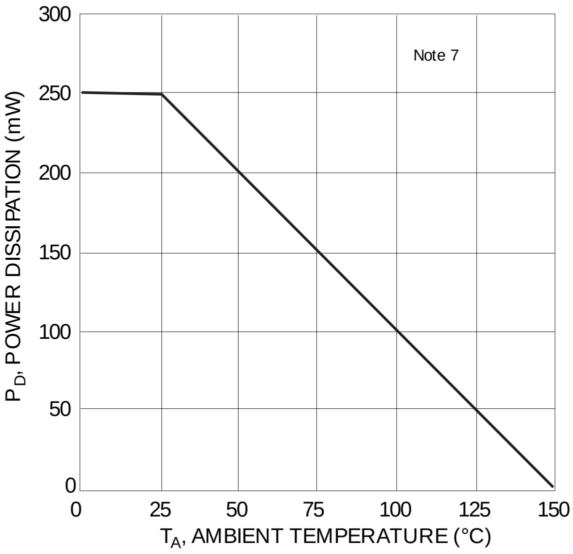


Fig. 1 Power Derating Curve

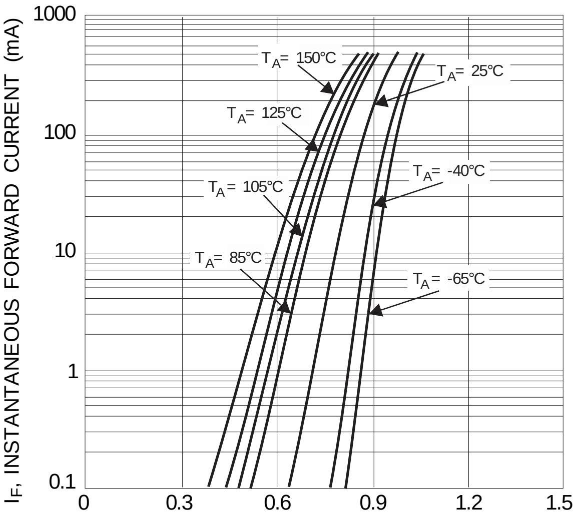


Fig. 2 Typical Forward Characteristics

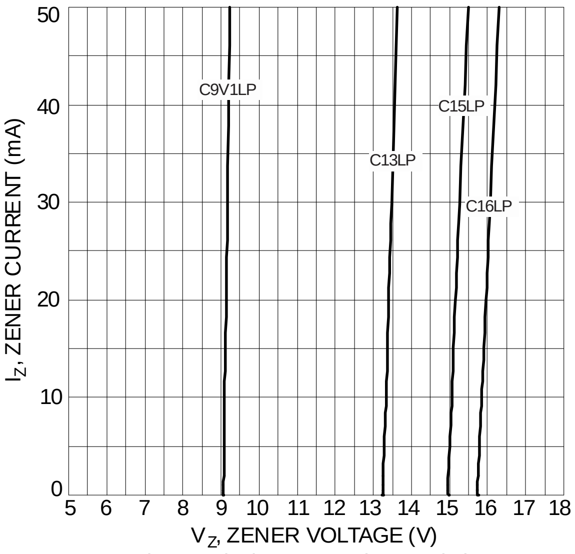
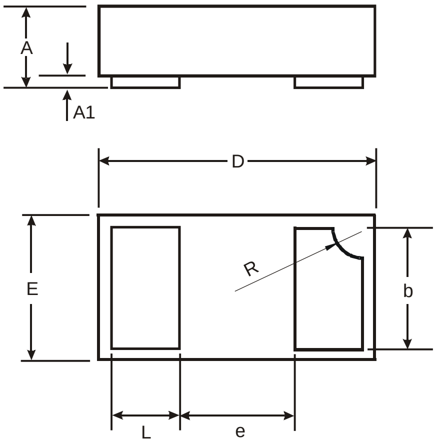


Fig. 3 Typical Reverse Characteristics

Package Outline Dimensions

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

X1-DFN1006-2

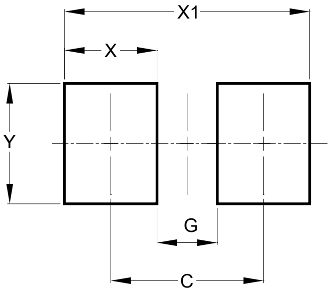


X1-DFN1006-2			
Dim	**Min**	**Max**	**Typ**
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	—	—	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

Suggested Pad Layout

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

X1-DFN1006-2



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

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