

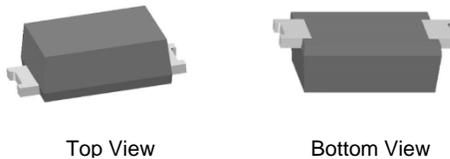
## Features

- 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**
- **PPAP Capable (Note 4)**

## Mechanical Data

- Case: SOD123F
- 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 ③
- Polarity: Cathode Band
- Weight: 0.015 grams (Approximate)

SOD123F (Type B)



## Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
BZT52HC18WFQ-7	Automotive	SOD123F (Type B)	3000/Tape & Reel

- 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)  
 YM = Date Code Marking  
 Y = Year (ex: G = 2019)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2018	2019	2020	2021	2022	...	2025	2026	2027	2028
Code	F	G	H	I	J	...	M	N	O	P

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 6) @ 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 7)	P <sub>D</sub>	375	mW
Power Dissipation (Note 8)	P <sub>D</sub>	830	mW
Thermal Resistance, Junction to Ambient Air (Note 7)	R <sub>θJA</sub>	330	°C/W
Thermal Resistance, Junction to Ambient Air (Note 8)	R <sub>θJA</sub>	150	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

- 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 on our website at <http://www.diodes.com/package-outlines.html>.
  8. Device mounted on FR-4 PCB with mounting pad for cathode 1cm<sup>2</sup>.

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

Type Number	Marking Codes	Zener Voltage Range (Note 9)			Maximum Zener Impedance (Note 10)			Temperature Coefficient		Total Capacitance	Maximum Reverse Current (Note 9)	
		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	V
BZT52HC18WFQ	WL	16.8	19.1	5	20	170	1	12.4	16.0	70	0.05	12.6

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

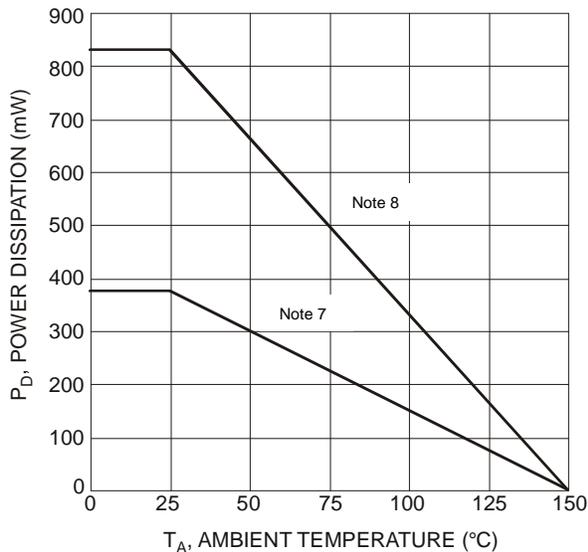


Figure 1 Power Derating Curve

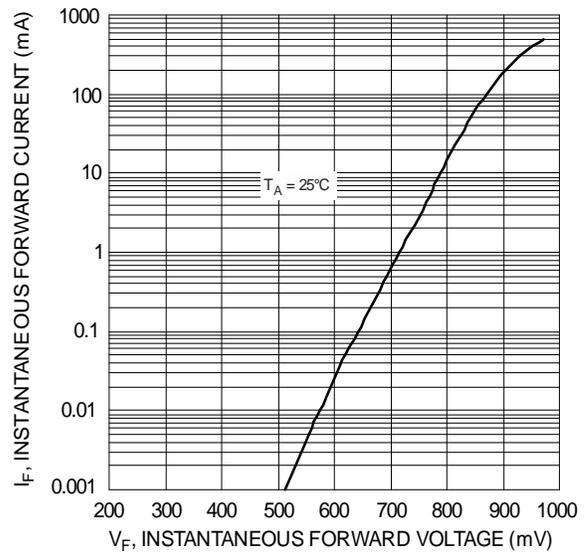


Figure 2 Typical Forward Characteristics

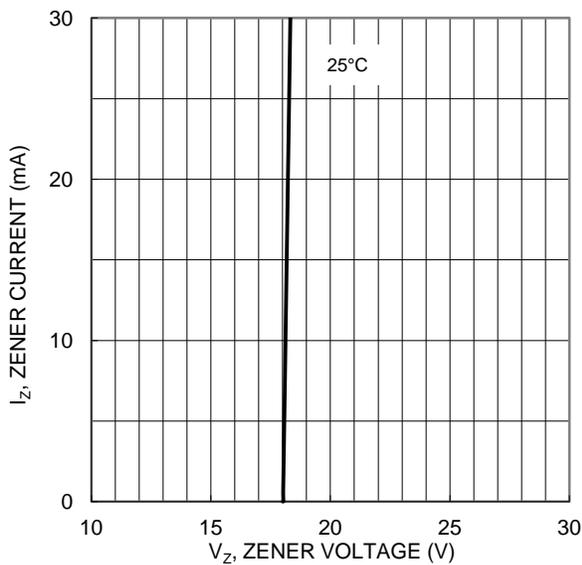
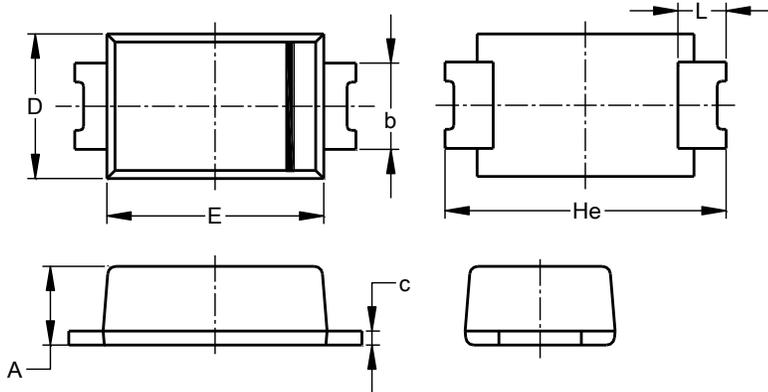


Figure 3 Typical Zener Breakdown Characteristics

**Package Outline Dimensions**

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

**SOD123F (Type B)**

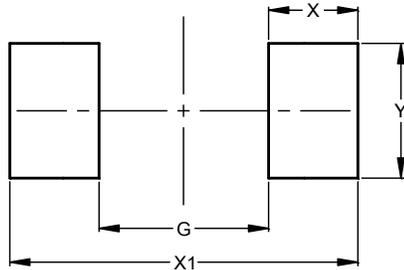


SOD123F (Type B)			
Dim	Min	Max	Typ
A	0.81	1.15	--
b	0.80	1.35	--
c	0.05	0.30	--
D	1.70	1.90	1.80
E	2.60	2.80	2.70
He	3.30	3.70	3.50
L	0.35	0.85	--
All Dimensions in mm			

**Suggested Pad Layout**

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

**SOD123F (Type B)**



Dimensions	Value (in mm)
G	1.90
X	1.00
X1	3.90
Y	1.50

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