

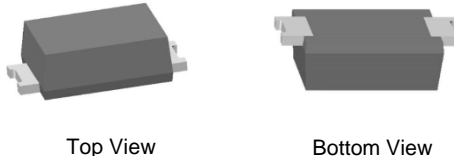
Features

- 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)**
- **The DIODES™ BZT52HC5V6WFQ - BZT52HC30WFQ are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: SOD123F
- Package 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)

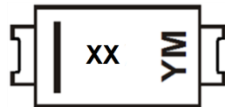


Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
(Type Number)-7	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. 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: J = 2022)
M = Month (ex: 9 = September)

Date Code Key

Year	2018	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	F	J	K	L	M	N	O	P	R	S	T
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_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 5) @ I _F = 10mA	V _F	0.9	V
Forward Current	I _F	250	mA

Thermal Characteristics

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

- 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/package-outlines.html>.
 7. Device mounted on FR-4 PCB with mounting pad for cathode 1cm².

Electrical Characteristics (@ T_A = +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 _Z @ I _{ZT}		I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	T _C @ I _{ZT}		C _T @ f = 1MHz, V _R = 0V	I _R	@ V _R
		Min (V)	Max (V)	mA	Ω		mA	Min (mV/°C)	Max (mV/°C)	Max (pF)	μA	V
BZT52HC5V6WFQ	W9	5.2	6.0	5	40	400	1	-2.0	2.5	300	1	2
BZT52HC6V2WFQ	WA	5.8	6.6	5	10	150	1	0.4	3.7	200	3	4
BZT52HC6V8WFQ	WB	6.4	7.2	5	8	80	1	1.2	4.5	200	2	4
BZT52HC7V5WFQ	WC	7.0	7.9	5	10	80	1	2.5	5.3	150	1	5
BZT52HC8V2WFQ	WD	7.7	8.7	5	10	80	1	3.2	6.2	150	0.7	5
BZT52HC9V1WFQ	WE	8.5	9.6	5	10	100	1	3.8	7.0	150	0.5	6
BZT52HC10WFQ	WF	9.4	10.6	5	10	70	1	4.5	8.0	90	0.2	7
BZT52HC11WFQ	WG	10.4	11.6	5	10	70	1	5.4	9.0	85	0.1	8
BZT52HC12WFQ	WH	11.4	12.7	5	10	90	1	6.0	10.0	85	0.1	8
BZT52HC13WFQ	WI	12.4	14.1	5	10	110	1	7.0	11.0	80	0.1	8
BZT52HC15WFQ	WJ	13.8	15.6	5	15	110	1	9.2	13.0	75	0.05	10.5
BZT52HC16WFQ	WK	15.3	17.1	5	20	170	1	10.4	14.0	75	0.05	11.2
BZT52HC18WFQ	WL	16.8	19.1	5	20	170	1	12.4	16.0	70	0.05	12.6
BZT52HC20WFQ	WM	18.8	21.2	5	20	220	1	14.4	18.0	60	0.05	14.0
BZT52HC22WFQ	WN	20.8	23.3	5	25	220	1	16.4	-	60	0.05	15.4
BZT52HC24WFQ	WO	22.8	25.6	5	30	220	1	18.4	-	55	0.05	16.8
BZT52HC27WFQ	WP	25.1	28.9	2	40	250	1	21.4	-	50	0.05	18.9
BZT52HC30WFQ	WQ	28.0	32.0	2	40	250	1	24.4	-	50	0.05	21.0

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

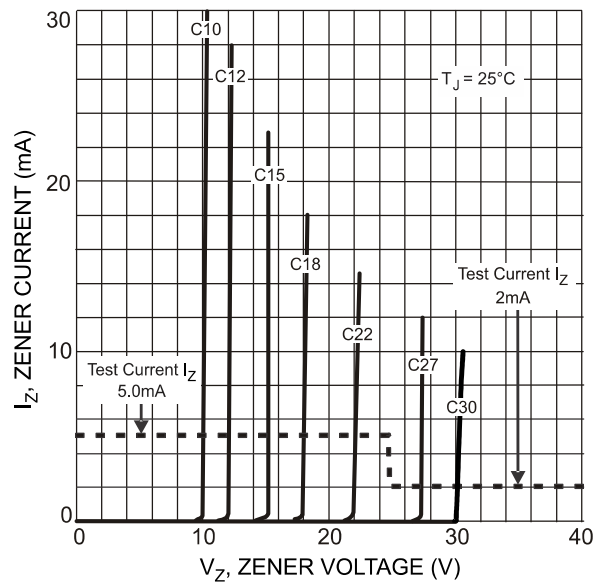
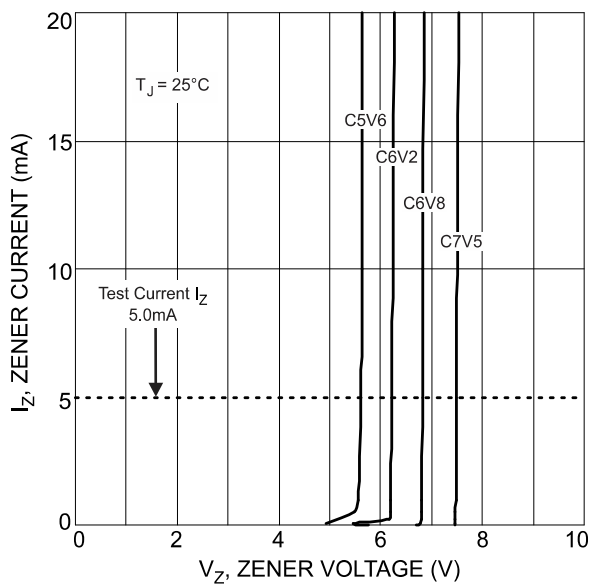
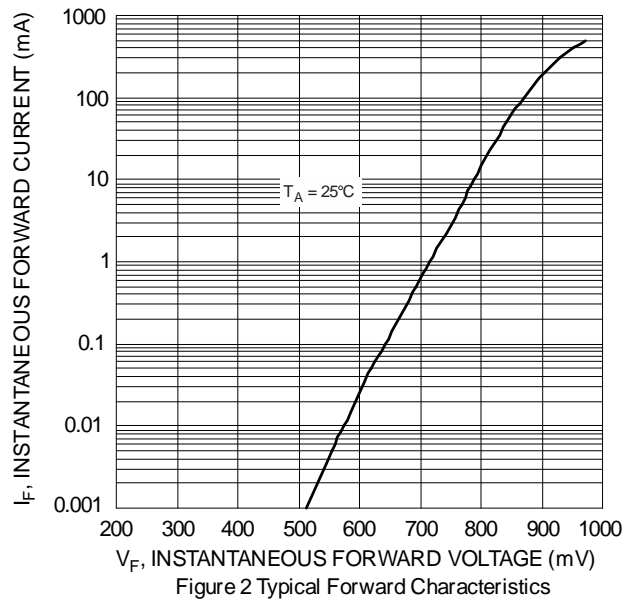
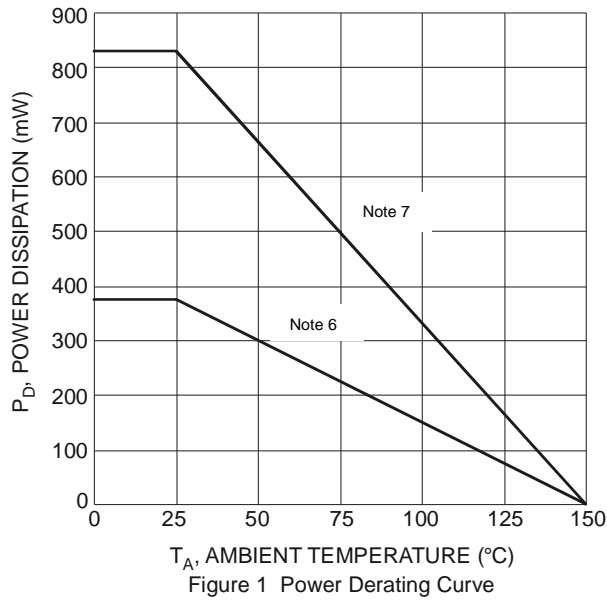


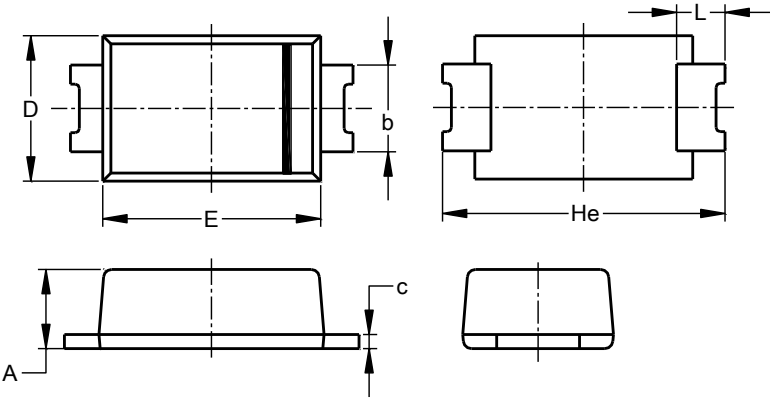
Figure 3 Typical Zener Breakdown Characteristic

Figure 4 Typical Zener Breakdown Characteristic

Package Outline Dimensions

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

SOD123F (Type B)

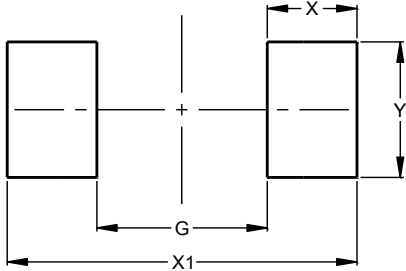


SOD123F (Type B)			
Dim	Min	Max	Typ
A	0.81	1.15	--
b	0.80	1.35	--
c	0.05	0.30	--
D	1.70	1.90	1.80
E	2.60	2.80	2.70
He	3.30	3.70	3.50
L	0.35	0.85	--
All Dimensions in mm			

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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