

Features

- Planar Die Construction
- Ultra-Small Surface Mount Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The DIODES™ BZX84C5V6TQ and DIODES™ BZX84C36TQ are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

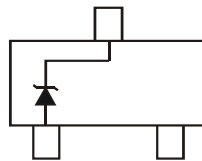
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SOT523
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 **e3**
- Polarity: See Diagram
- Weight: 0.002 grams (Approximate)



Top View



Device Schematic

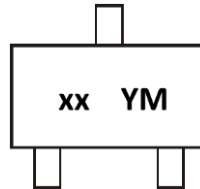
Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
(Type Number)-7-F*	SOT523	3,000	Tape & Reel

*Add "-7-F" to the appropriate type number in *Electrical Characteristics* Table on page 2. Example: 5.6V Zener = BZX84C5V6TQ-7-F.

- 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: D = December)

Date Code Key

Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Code	J	K	L	M	N	O	P	R	S	T	U	V

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 @I _F = 10mA	V _F	0.9	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	150	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	833	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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

Type Number	Marking Code	Zener Voltage Range (Note 6)			Maximum Zener Impedance (Note 7)			Total Capacitance f = 1MHz, V _R = 0V C _T	Maximum Reverse Current (Note 6)		Temperature Coefficient of Zener Voltage @I _{ZT} = 5mA (mV/°C)		
		V _Z @I _{ZT}		I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}		I _R	@V _R	Min	Max	
		Typ (V)	Min (V)	Max (V)	mA	Ω	mA	Typ (pF)	μA	V			
BZX84C5V6TQ	R3	5.6	5.2	6.0	5.0	40	480	1.0	85	1.0	2.0	-2.0	2.5
BZX84C36TQ	PD	36.0	34.0	38.0	2.0	90	325	0.5	10	0.1	25.2	30.4	—

Notes: 5. Device mounted on FR-4 PC board with recommended pad layout at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
6. Short duration pulse test used to minimize self-heating effect.
7. f = 1kHz.

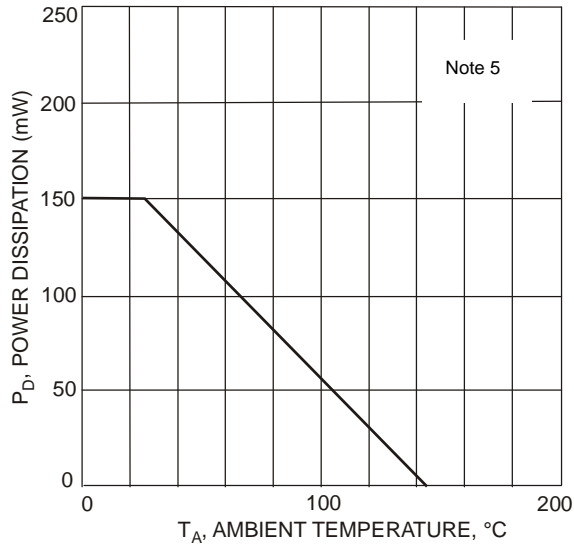


Figure 1. Power Derating Curve

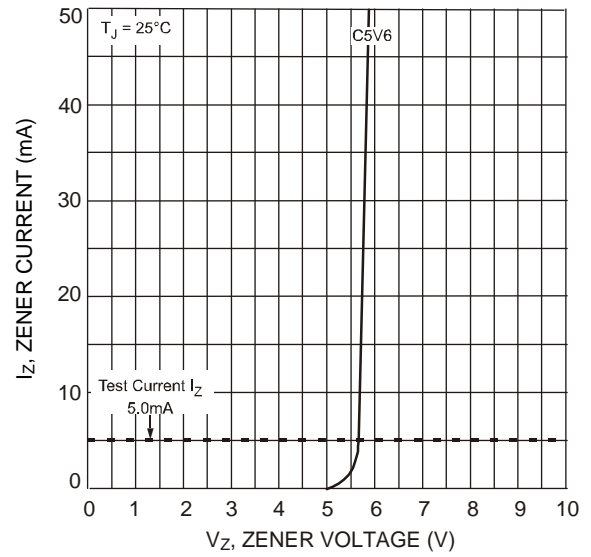


Figure 2. Typical Zener Breakdown Characteristics

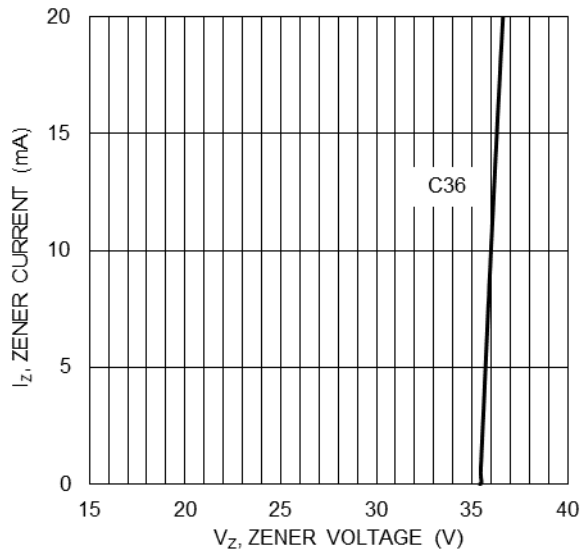
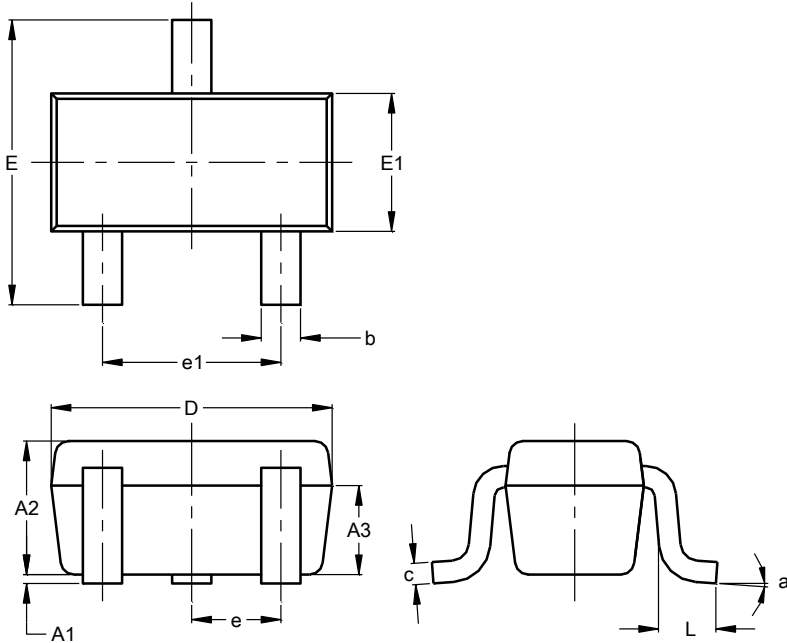


Figure 3. Typical Zener Breakdown Characteristics

Package Outline Dimensions

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

SOT523

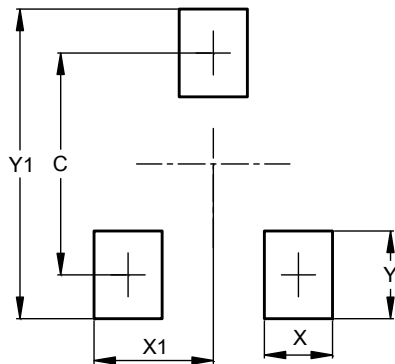


SOT523			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80

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