

## Features

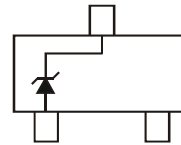
- Planar Die Construction
- 350mW Power Dissipation
- Zener Voltages from 43V - 51V
- Ideally Suited for Automated Assembly Processes
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 6)**

## Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagram
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.008 grams (approximate)



Top View



Device Schematic

## Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ $I_F = 10\text{mA}$	$V_F$	0.9	V

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_D$	300	mW
Power Dissipation (Note 2)	$P_D$	350	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Type Number	Type Code	Zener Voltage Range (Note 5)				Maximum Zener Impedance (Note 4)			Maximum Reverse Current (Note 5)		Typical Temperature Coefficient @ $I_{ZT}$ mV/ $^\circ\text{C}$	
		$V_Z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$		$I_R$	$V_R$	Min	Max
		Nom (V)	Min (V)	Max (V)	(mA)	( $\Omega$ )	( $\Omega$ )	(mA)	( $\mu\text{A}$ )	(V)		
BZX84C43	Y15/KYF	43	40.0	46.0	2.0	150	375	0.5	0.1	30.1	10.0	12.0
BZX84C47	Y16/KYG	47	44.0	50.0	2.0	170	375	0.5	0.1	32.9	10.0	12.0
BZX84C51	Y17/KYH	51	48.0	54.0	2.0	180	400	0.5	0.1	35.7	10.0	12.0

- Notes:
- Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  - Valid provided the terminals are kept at ambient temperature.
  - No purposefully added lead. Halogen and Antimony Free.
  - $f = 1\text{KHz}$ .
  - Short duration pulse test used to minimize self-heating effect.
  - Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or  $\text{Sb}_2\text{O}_3$  Fire Retardants.

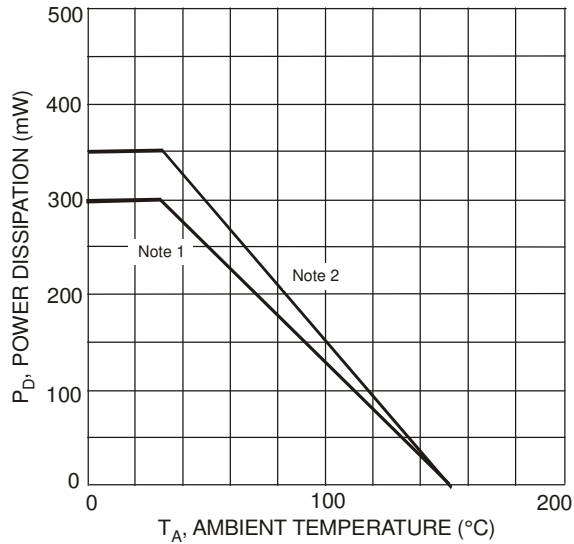


Fig. 1 Power Derating Curve

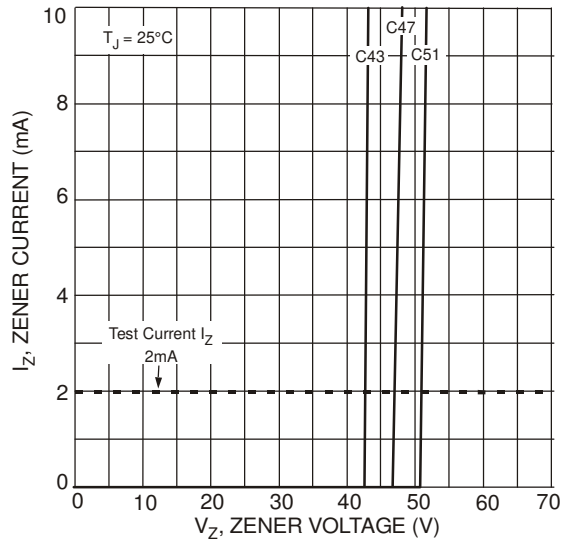


Fig. 2 Typical Zener Breakdown Characteristics

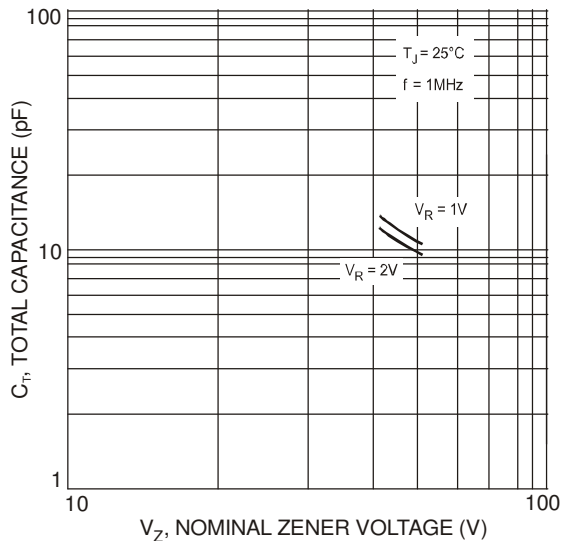


Fig. 3 Typical Total Capacitance vs. Nominal Zener Voltage

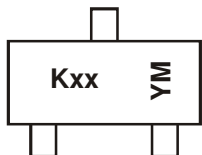
### Ordering Information (Note 7)

Part Number	Case	Packaging
(Type Number)-7-F*	SOT-23	3000/Tape & Reel

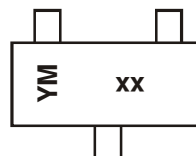
\*Add "-7" to the appropriate type number in Electrical Characteristics Table on Page 2. Example: 43V Zener = BZX84C43-7-F.

Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

### Marking Information



Kxx = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year ex: T = 2006  
M = Month (ex: 9 = September)



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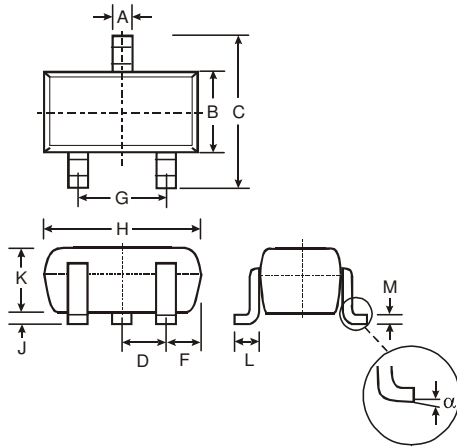
#### Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	T	U	V	W	X	Y	Z	A	B	C

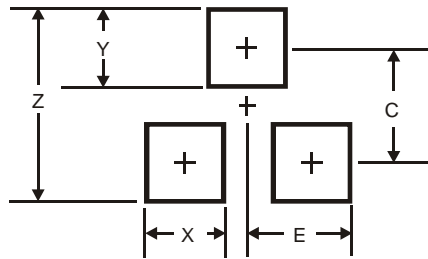
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
F	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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