

## Features

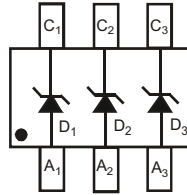
- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on  $V_Z$
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- **Lead Free By Design/RoHS Compliant (Note 2)**



Top View

## Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Polarity: See diagram
- Marking Information: See Page 6
- Ordering Information: See Page 6
- Weight: 0.006 grams (approximate)



Device Schematic

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

Characteristic	Symbol	Value	Unit
Forward Voltage	$V_F$	0.9	V

## Thermal Characteristics

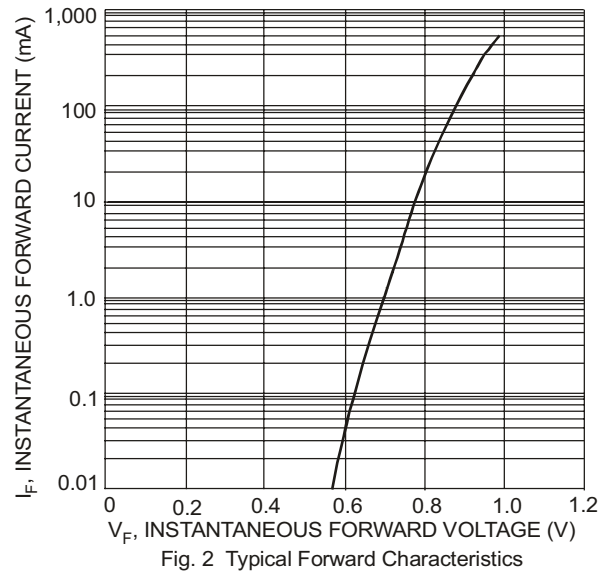
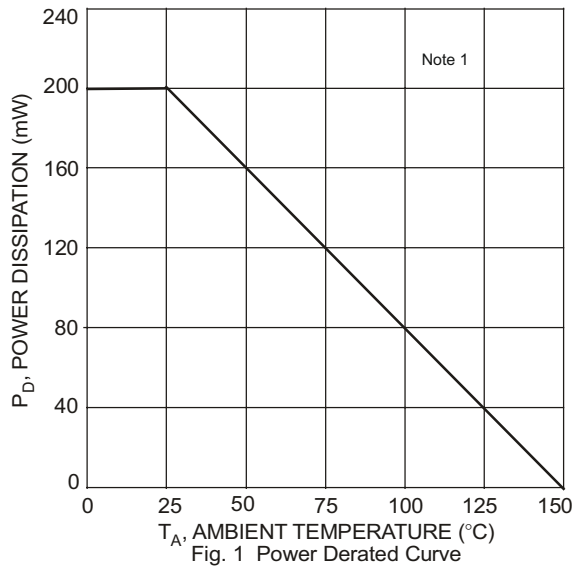
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_D$	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

- Notes:
1. 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>.
  2. No purposefully added lead.

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

Type Number	Type Code	Zener Voltage Range (Note 3)				Maximum Reverse Leakage Current (Note 4)	
		$V_Z @ I_{ZT}$			$I_{ZT}$	$I_R @ V_R$	
		Nom (V)	Min (V)	Max (V)	$\mu\text{A}$	$\mu\text{A}$	V
DDZX9688TS	HG	4.7	4.47	4.94	50	5	3
DDZX9689TS	HH	5.1	4.85	5.36	50	5	3
DDZX9690TS	HJ	5.6	5.32	5.88	50	2	4
DDZX9691TS	HK	6.2	5.89	6.51	50	1	5
DDZX9692TS	HL	6.8	6.46	7.14	50	0.1	5.1
DDZX9693TS	HM	7.5	7.13	7.88	50	0.1	5.7
DDZX9694TS	HN	8.2	7.79	8.61	50	0.1	6.2
DDZX9696TS	HP	9.1	8.65	9.56	50	0.1	6.9
DDZX9697TS	HQ	10	9.50	10.50	50	0.1	7.6
DDZX9698TS	HR	11	10.45	11.55	50	0.05	8.4
DDZX9699TS	HS	12	11.40	12.60	50	0.05	9.1
DDZX9700TS	HT	13	12.35	13.65	50	0.05	9.8
DDZX9701TS	HU	14	13.30	14.70	50	0.05	10.6
DDZX9702TS	HV	15	14.25	15.75	50	0.05	11.4
DDZX9703TS	HW	16	15.20	16.80	50	0.05	12.1
DDZX9705TS	HY	18	17.10	18.90	50	0.05	13.6
DDZX9707TS	MD	20	19.00	21.00	50	0.05	15.2
DDZX9708TS	ME	22	20.90	23.10	50	0.05	16.7
DDZX9709TS	MF	24	22.80	25.20	50	0.05	18.2
DDZX9711TS	MH	27	25.65	28.35	50	0.05	20.4
DDZX9712TS	MJ	28	26.60	29.40	50	0.05	21.2
DDZX9713TS	MK	30	28.50	31.50	50	0.05	22.8
DDZX9714TS	ML	33	31.35	34.65	50	0.05	25.0
DDZX9715TS	MM	36	34.20	37.80	50	0.05	27.3
DDZX9716TS	MN	39	37.05	40.95	50	0.05	29.6

Notes: 3. Nominal Zener voltage is measured with the device junction in thermal equilibrium at  $T_J = 30^\circ\text{C} \pm 1^\circ\text{C}$ .  
 4. Short duration pulse test used to minimize self-heating effect.



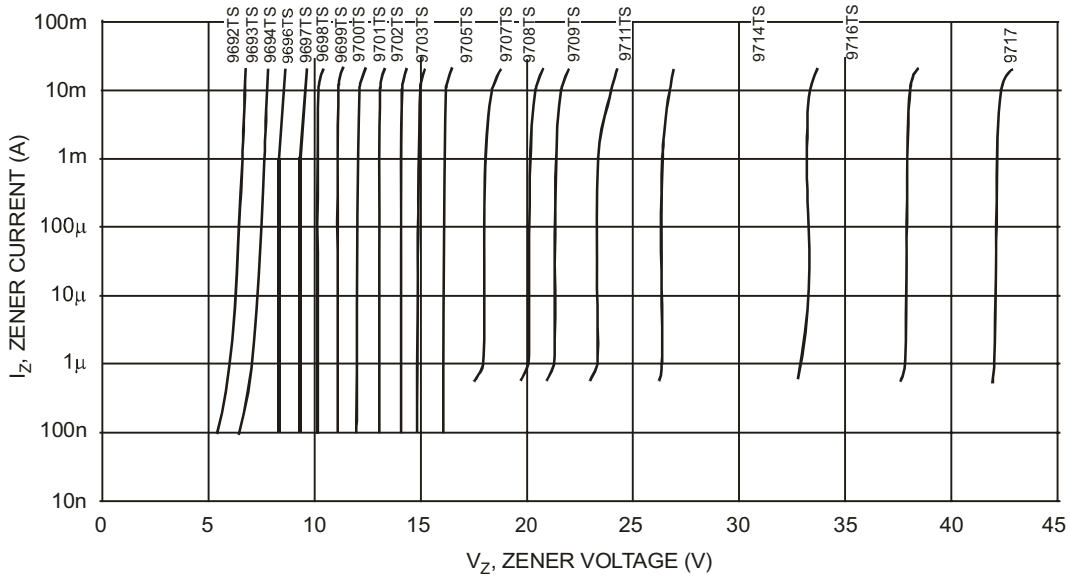


Fig. 3 Typical Zener Breakdown Characteristics

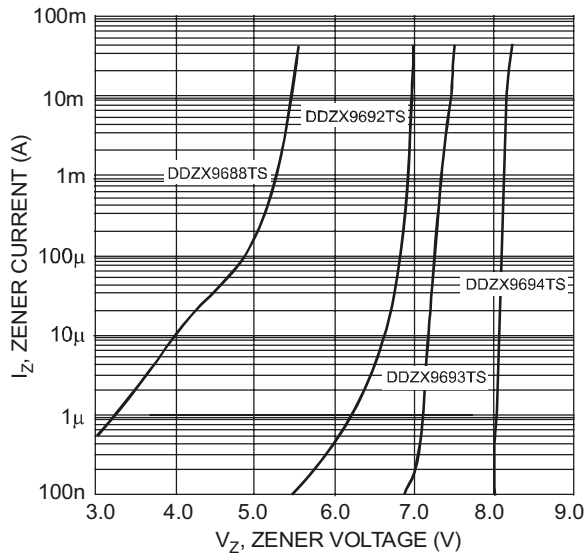


Fig. 4 Typical Zener Breakdown Characteristics  
DDZX9688TS - DDZX9694TS

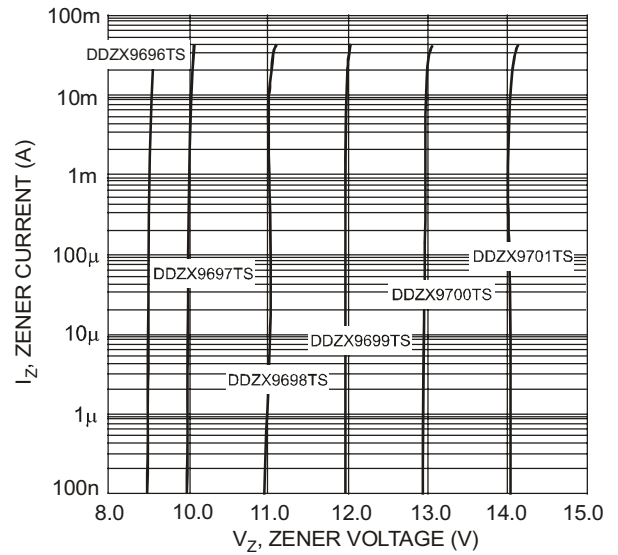


Fig. 5 Typical Zener Breakdown Characteristics,  
DDZX9696TS - DDZX9701TS

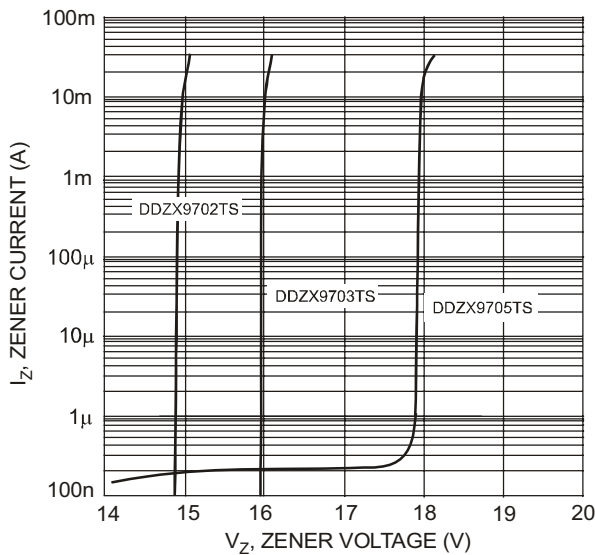


Fig. 6 Typical Zener Breakdown Characteristics,  
DDZX9702TS - DDZX9705TS

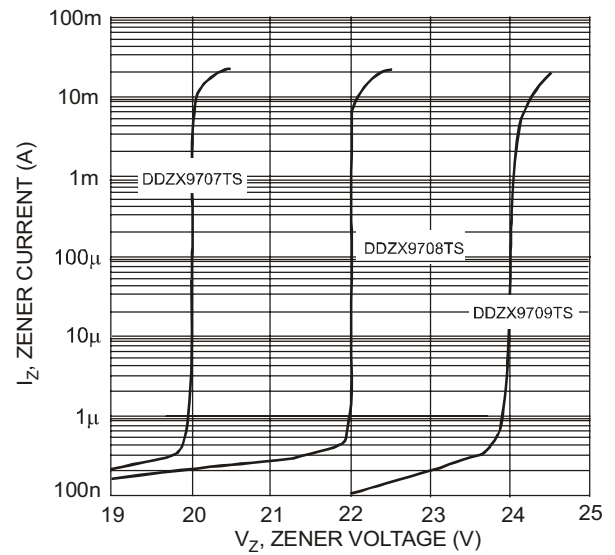


Fig. 7 Typical Zener Breakdown Characteristics,  
DDZX9707TS - DDZX9709TS

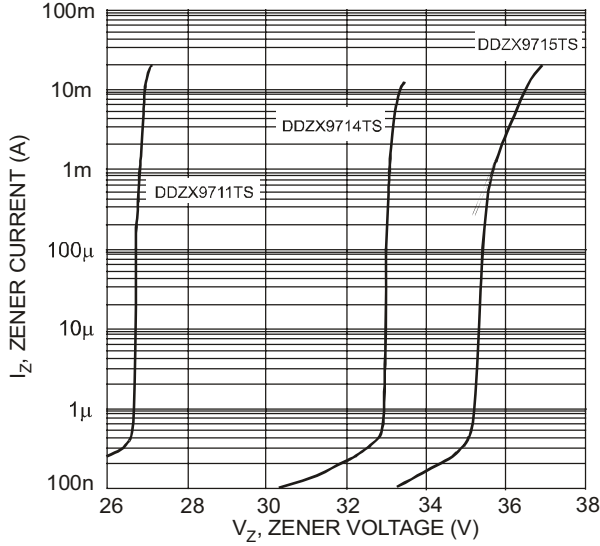


Fig. 8 Typical Zener Breakdown Characteristics, DDZX9711TS - DDZX9715TS

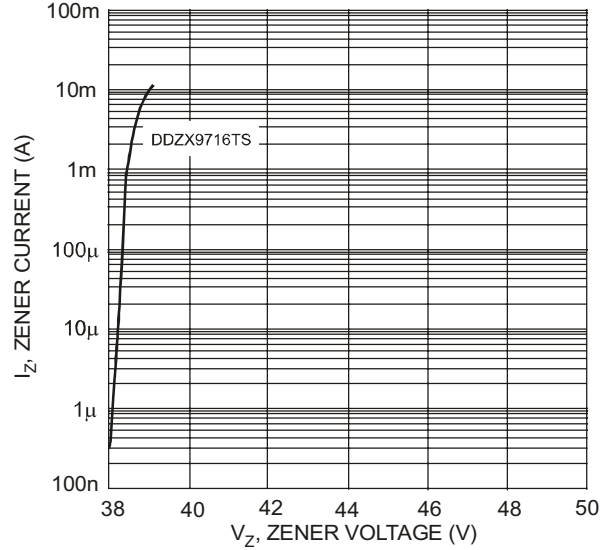


Fig. 9 Typical Zener Breakdown Characteristics, DDZX9716TS - DDZX9717TS

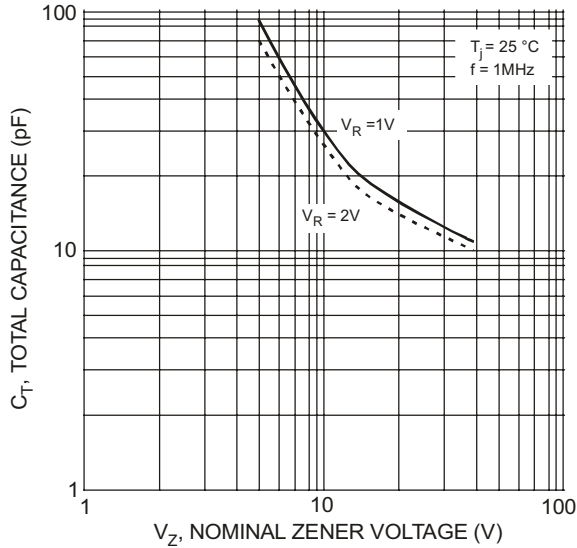


Fig. 10 Typical Total Capacitance vs. Nominal Zener Voltage

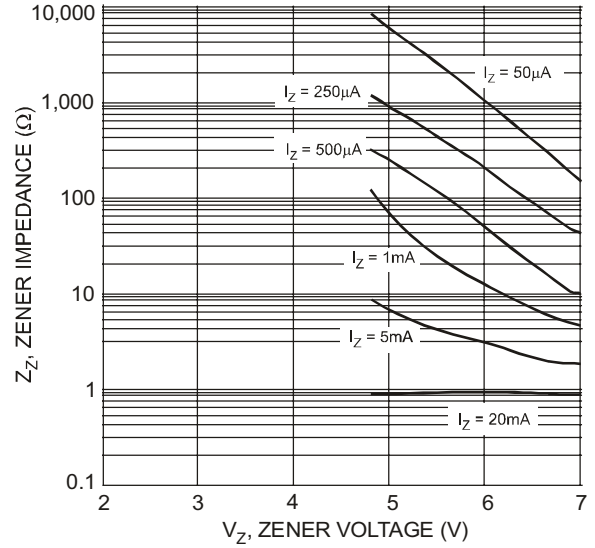


Fig. 11 Typical Zener Impedance Characteristics, DDZX9689TS - DDZX9692TS

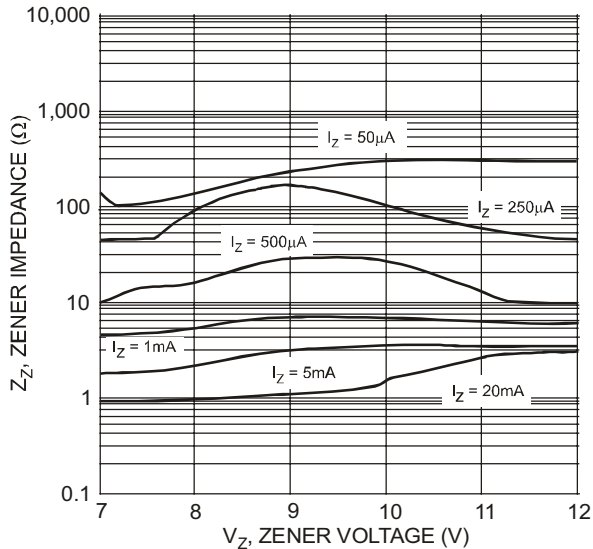


Fig. 12 Typical Zener Impedance Characteristics, DDZX9693TS - DDZX9699TS

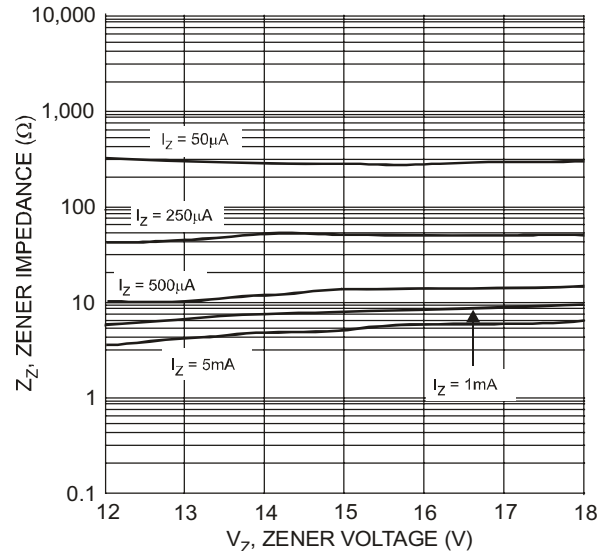


Fig. 13 Typical Zener Impedance Characteristics, DDZX9699TS - DDZX9705TS

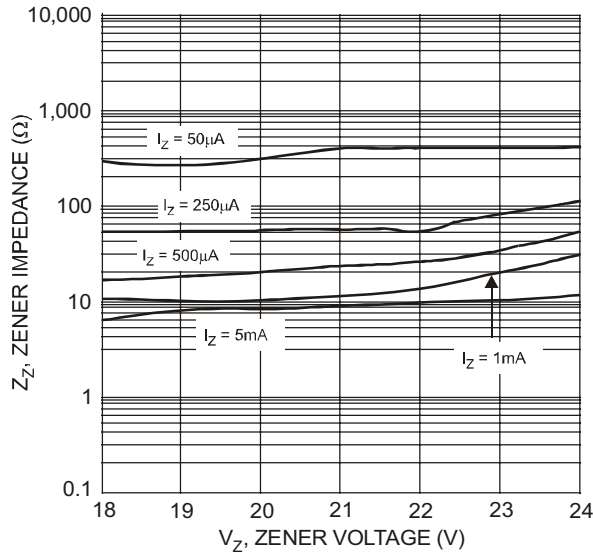


Fig. 14 Typical Zener Impedance Characteristics, DDZX9705TS - DDZX9709TS

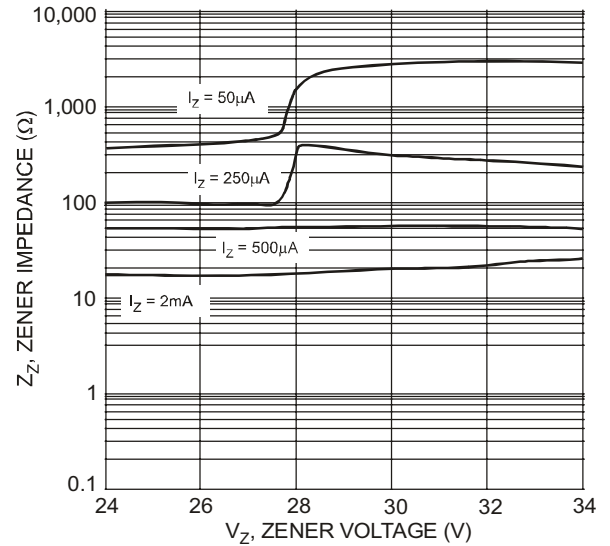


Fig. 15 Typical Zener Impedance Characteristics, DDZX9709TS - DDZX9714TS

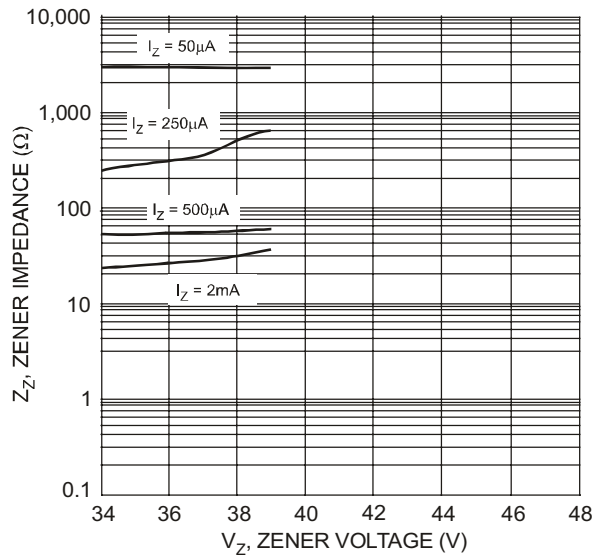


Fig. 16 Typical Zener Impedance Characteristics, DDZX9715TS - DDZX9717TS

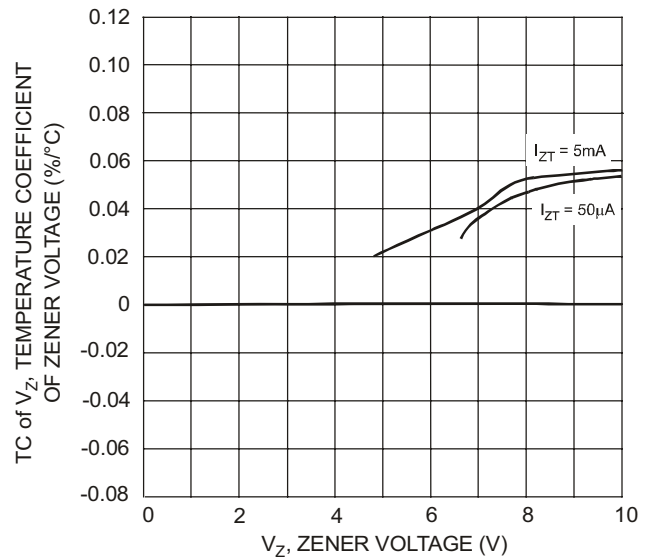


Fig. 17 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9692TS - DDZX9697TS

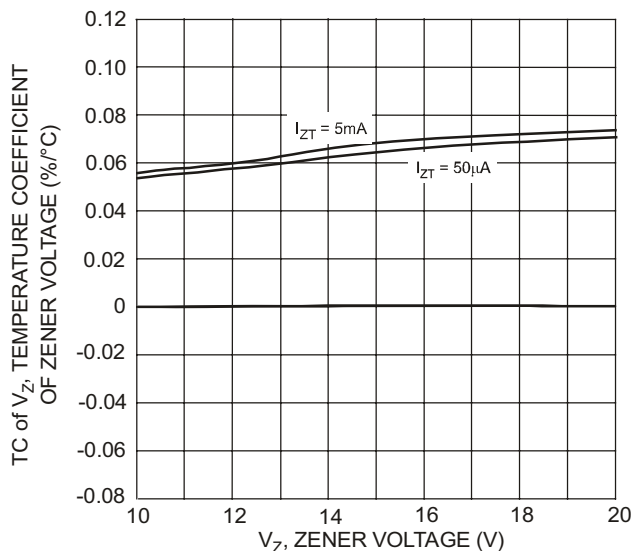


Fig. 18 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9697TS - DDZX9707TS

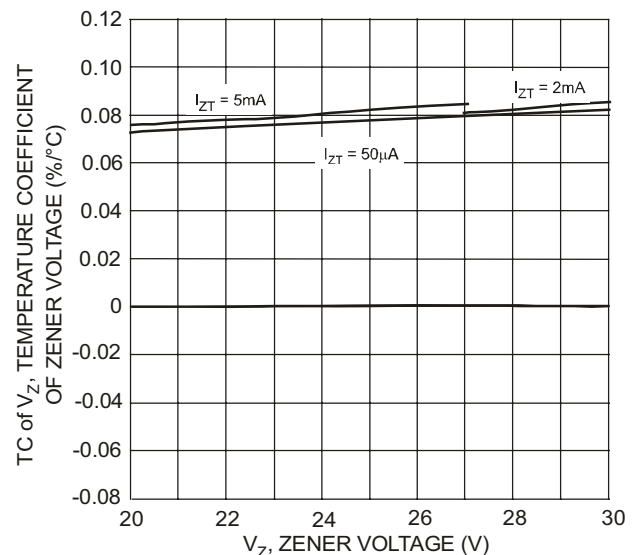


Fig. 19 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9707TS - DDZX9713TS

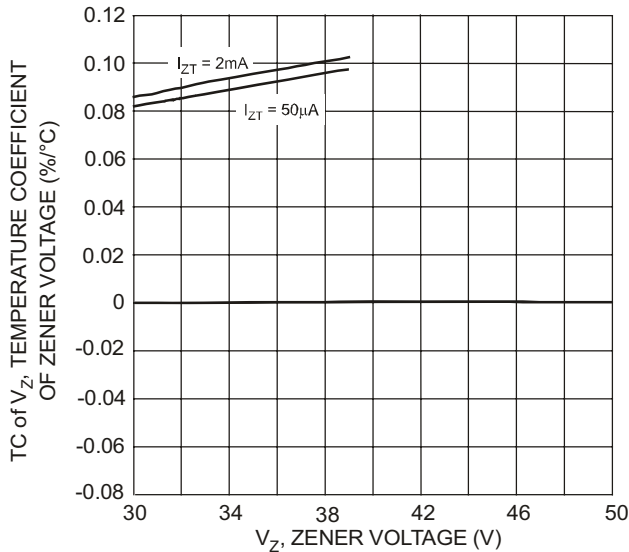


Fig. 20 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9713S - DDZ9716S

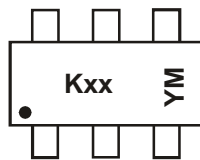
### Ordering Information (Note 5)

Device	Packaging	Shipping
(Type Number)-7*	SOT-363	3000/Tape & Reel

\* The part number for the 6.2 Volt device would be DDZX9691TS-7.

Notes: 5. 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)

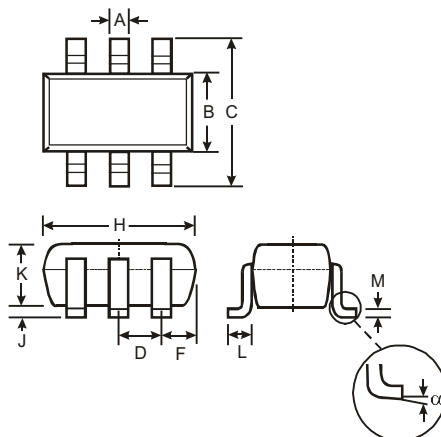
Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

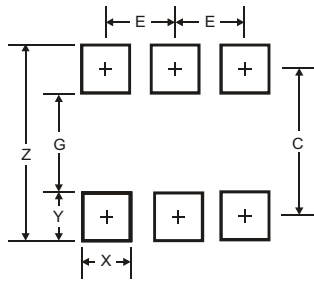
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

### Package Outline Dimensions



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
$\alpha$	0°	8°
<b>All Dimensions in mm</b>		

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C	1.9
E	0.65

### IMPORTANT NOTICE

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