



DDZX5V1BTS - DDZX47TS

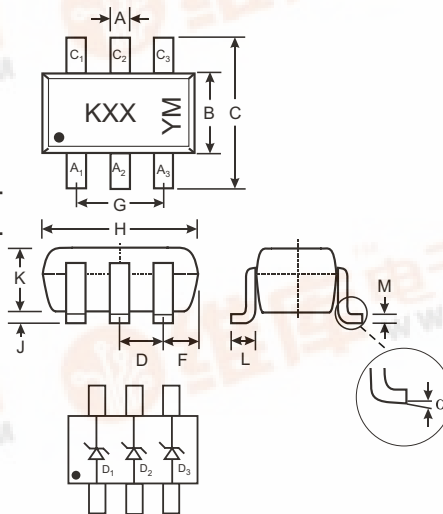
TRIPLE SURFACE MOUNT PRECISION ZENER DIODE ARRAY

Features

- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on V_Z
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- Lead Free Device

Mechanical Data

- Case: SOT-363, Plastic
- Plastic Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Finish - Matte Tin Solderable per MIL-STD-202, Method 208 (Note 1)
- Orientation: See Diagram
- Marking: See Below
- Weight: 0.006 grams (approx.)



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	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
α	0°	8°

All Dimensions in mm

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
Power Dissipation (Note 2)	P_d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150	$^\circ\text{C}$

- Notes:
1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
 2. 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>.

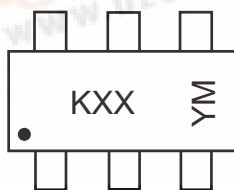
Ordering Information (Note 3)

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

* Example: The part number for the 6.2 Volt device would be DDZX6V2BTS-7.

Note : 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



KXX = Product Type Marking Code (See Table 1)
 YM = Date Code Marking
 Y = Year ex: P = 2003
 M = Month ex: 9 = September

Date Code Key

Year					2003	2004	2005	2006	2007	2008	2009	
Code					P	R	S	T	U	V	W	
Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Table 1

Type Number	Marking Code	Zener Voltage Range (Notes 4,5)			Maximum Zener Impedance (Note 6)			Maximum Reverse Current (Note 7)	
		V _Z @ I _{ZT}		I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R	@ V _R
		Min (V)	Max (V)	mA	Ω		mA	uA	V
DDZX5V1BTS	KM	4.94	5.20	20	17	480	1	5	1.5
DDZX5V6BTS	KN	5.45	5.73	20	11	400	1	0.5	2.5
DDZX6V2BTS	KO	5.96	6.27	20	7	150	1	0.5	4.0
DDZX6V8CTS	YP	6.66	7.01	20	5	150	0.5	0.1	5.0
DDZX7V5CTS	YQ	7.29	7.67	20	6	120	0.5	0.1	6.0
DDZX8V2CTS	YR	8.03	8.45	20	8	120	0.5	0.1	6.5
DDZX9V1CTS	YS	8.83	9.30	20	8	120	0.5	0.1	7.0
DDZX10CTS	YT	9.70	10.20	20	8	120	0.5	0.1	8.0
DDZX11CTS	YU	10.82	11.38	10	10	120	0.5	0.1	8.4
DDZX12CTS	YV	11.74	12.35	10	12	110	0.5	0.1	9.1
DDZX13BTS	KW	12.55	13.21	10	14	110	0.5	0.1	10.0
DDZX14TS	GX	13.44	14.13	10	16	110	0.5	0.05	11.0
DDZX15TS	GY	14.80	15.57	10	18	150	0.5	0.05	12.0
DDZX16TS	YY	15.69	16.51	10	18	150	0.5	0.05	12.0
DDZX18CTS	YZ	17.42	18.33	10	23	150	0.5	0.05	14.0
DDZX20CTS	PJ	19.23	20.22	10	28	200	0.5	0.05	15.0
DDZX22DTS	2K	21.52	22.63	5	30	200	0.5	0.05	17.0
DDZX24CTS	PL	23.12	24.31	5	35	200	0.5	0.05	19.0
DDZX27DTS	2M	26.29	27.64	5	45	250	0.5	0.05	21.0
DDZX30DS	2N	29.02	30.51	5	55	250	0.5	0.05	23.0
DDZX33TS	RP	32.14	33.79	5	75	250	0.5	0.05	27.0
DDZX36TS	ZQ	35.36	37.19	5	85	250	0.5	0.05	30.0
DDZX39FTS	5Q	38.14	40.11	5	85	250	0.5	0.05	30.0
DDZX43TS	ZR	42.14	43.86	5	90	—	—	0.05	33.0
DDZX47TS	ZS	46.06	47.94	5	90	—	—	0.05	36.0

- Notes:
- The Zener voltage is measured 40ms after power is supplied.
 - For inquiries on tighter tolerances, or alternate nominal zener voltages, please contact your Diodes Inc. sales representative for availability and minimum order details.
 - f = 1kHz.
 - Short duration test pulse used to minimize self-heating effect.

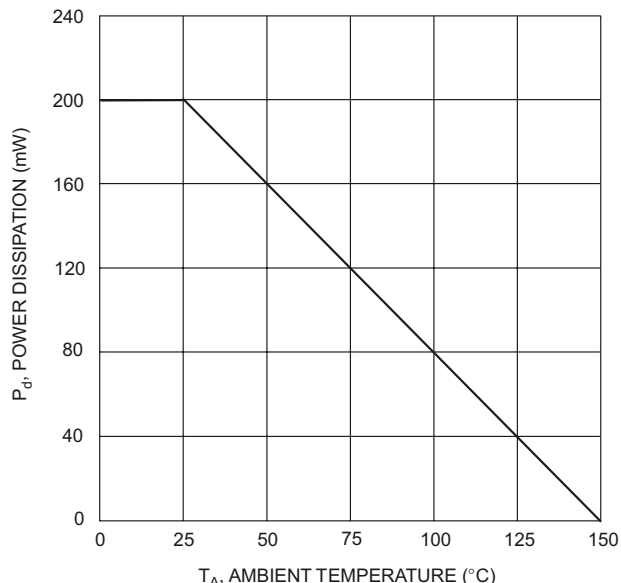


Fig. 1 Power Dissipation vs Ambient Temperature

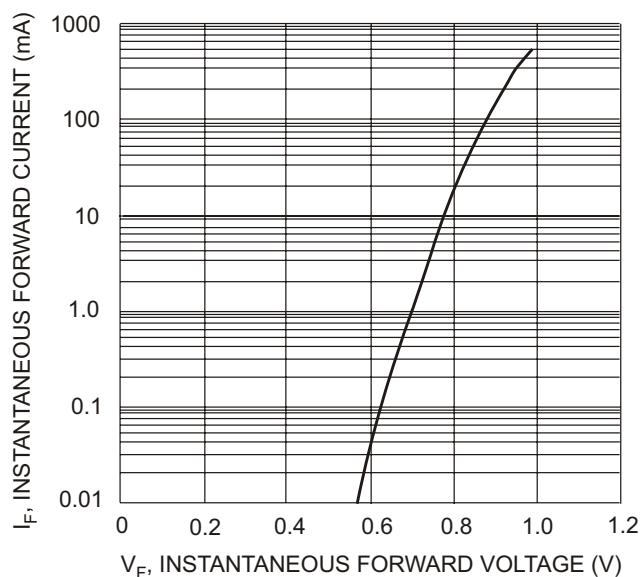


Fig. 2 Typical Forward Characteristics

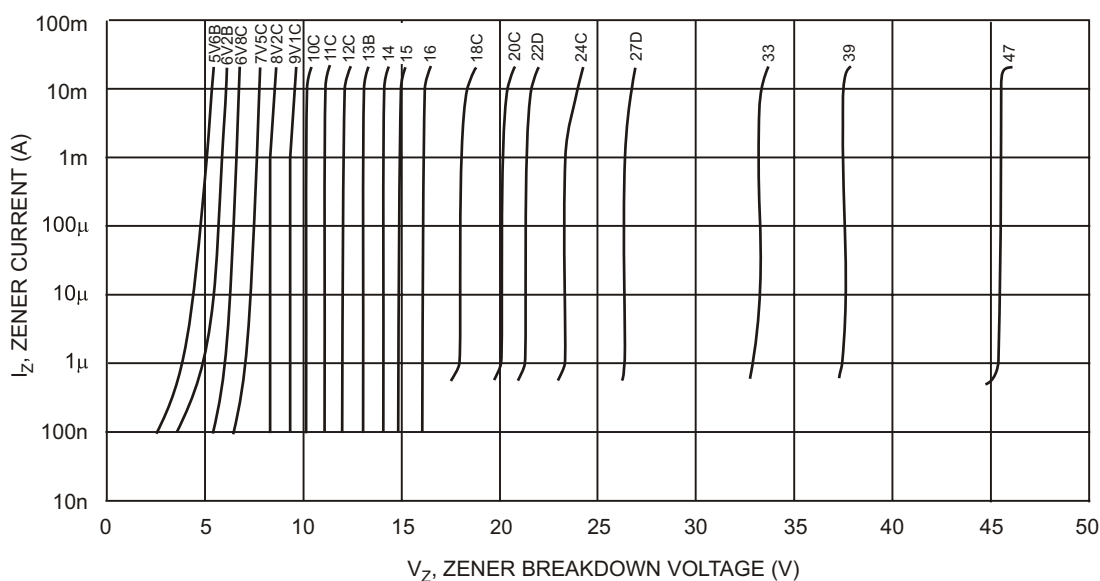


Fig. 3 Typical Reverse Characteristics

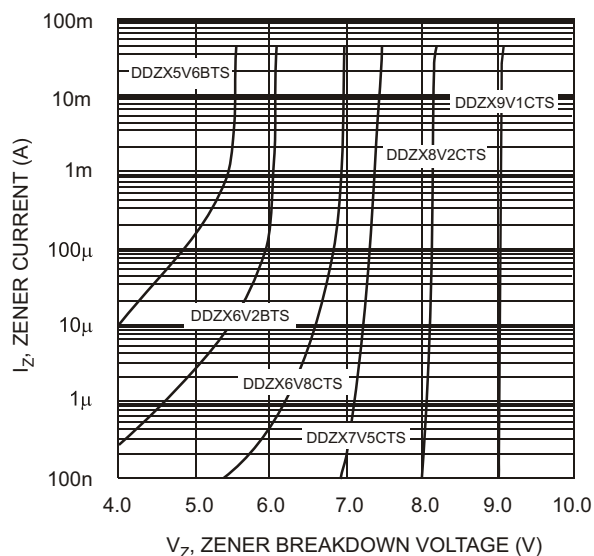


Fig. 4 Typical Reverse Characteristics, DDZX5V6BTS - DDZX9V1CTS

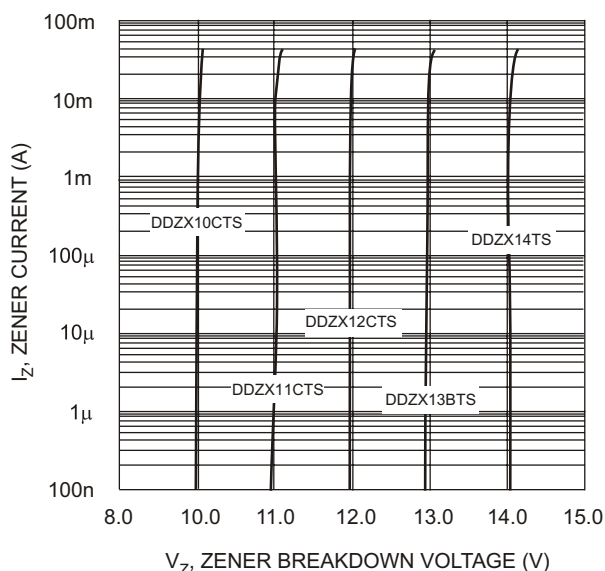


Fig. 5 Typical Reverse Characteristics, DDZX10CTS - DDZX14TS

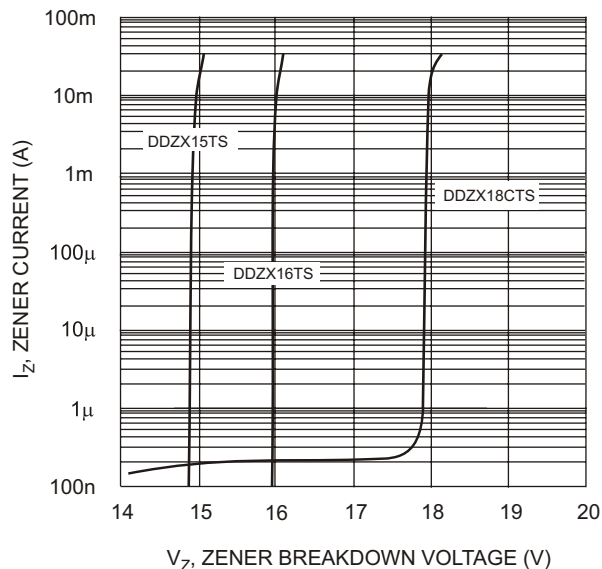


Fig. 6 Typical Reverse Characteristics, DDZX15TS - DDZX18CTS

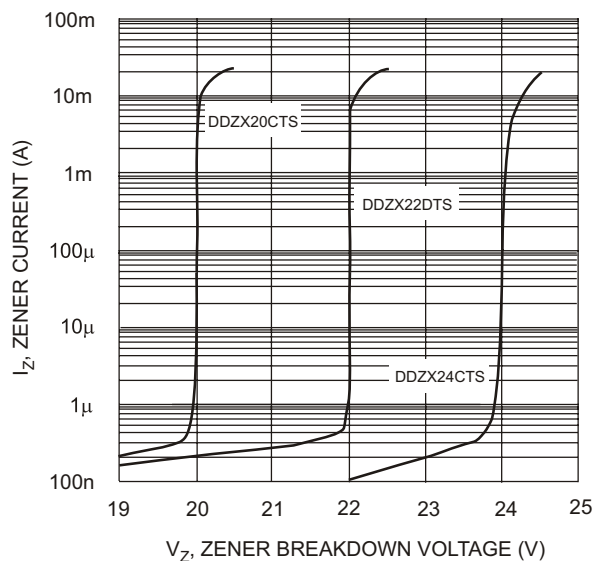


Fig. 7 Typical Reverse Characteristics, DDZX20CTS - DDZX24CTS

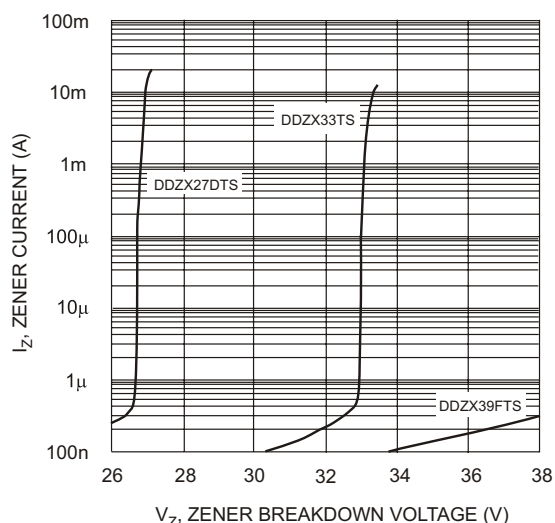


Fig. 8 Typical Reverse Characteristics, DDZX27DTS - DDZX39FTS

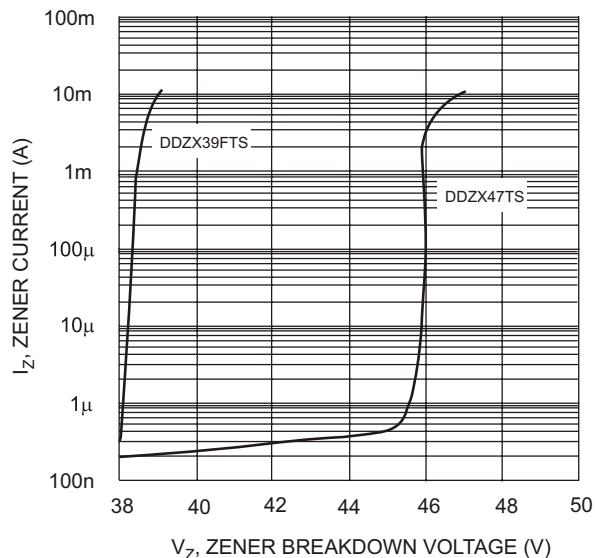


Fig. 9 Typical Reverse Characteristics, DDZX39FTS - DDZX47TS

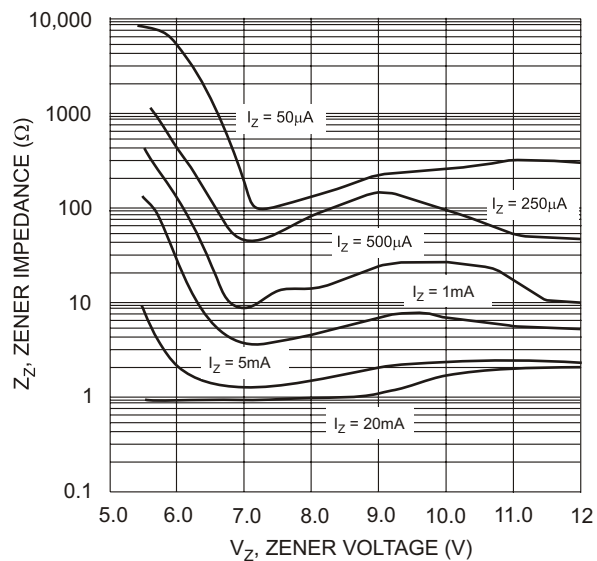


Fig. 10 Typical Zener Impedance Characteristics, DDZX5V6BTS - DDZX12CTS

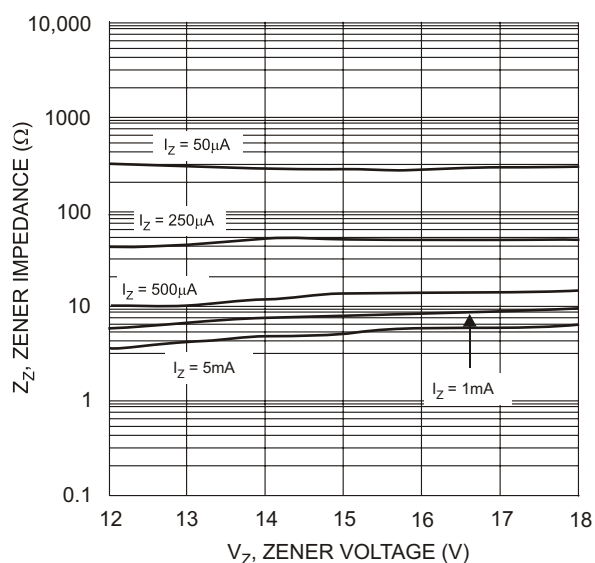


Fig. 11 Typical Zener Impedance Characteristics, DDZX12CTS - DDZX18CTS

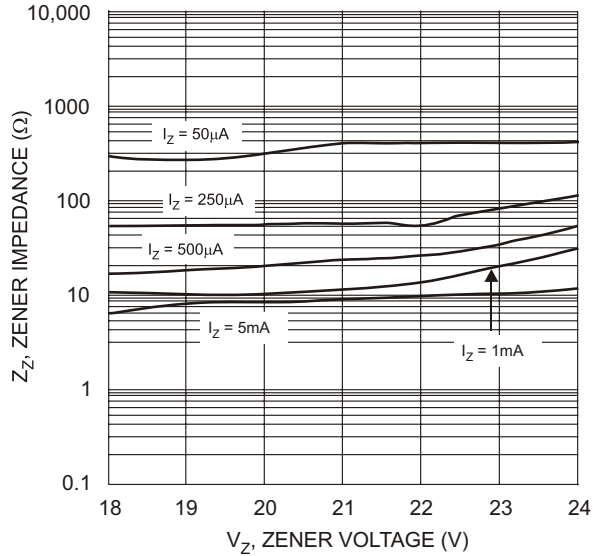


Fig. 12 Typical Zener Impedance Characteristics, DDZX18CTS - DDZX24CTS

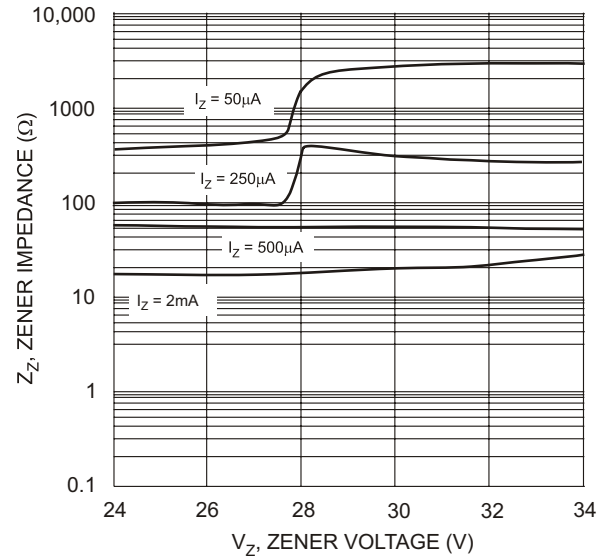


Fig. 13 Typical Zener Impedance Characteristics, DDZX24CTS - DDZX33TS

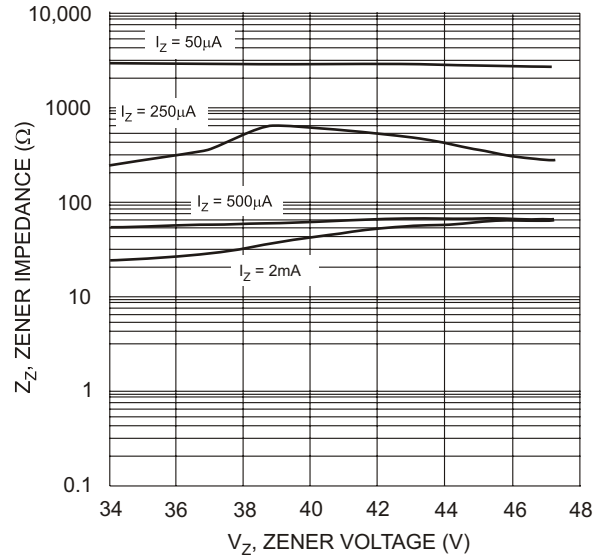


Fig. 14 Typical Zener Impedance Characteristics, DDZX36TS - DDZX47TS

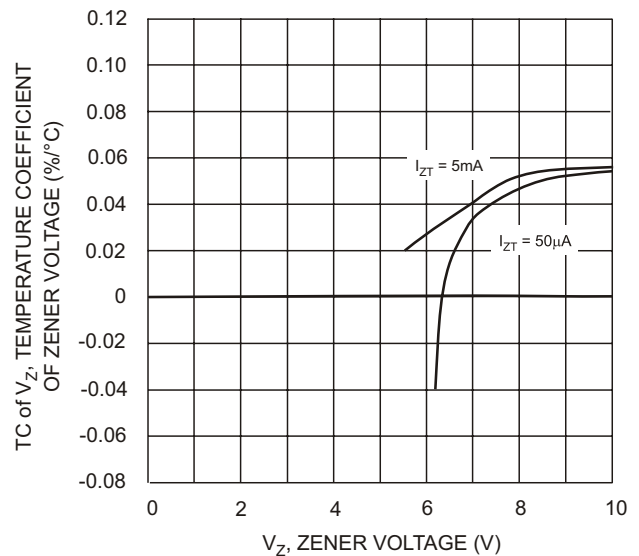


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX6V62TS-DDZX10CTS

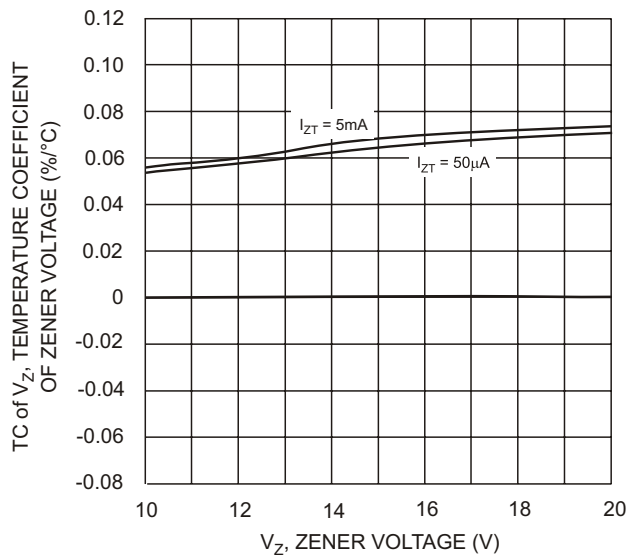


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX10CTS-DDZX20CTS

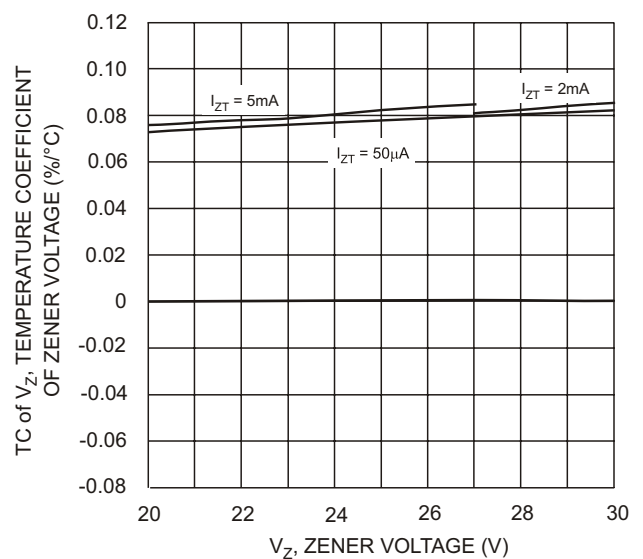


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZX20CTS-DDZX30DTS

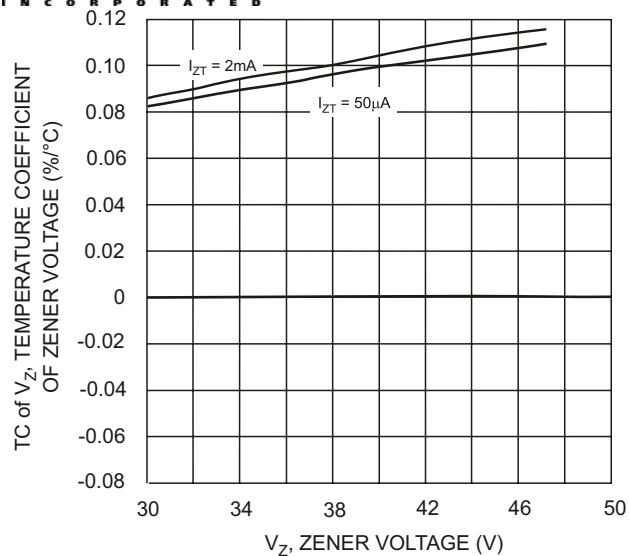


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX30DTS-DDZX47TS

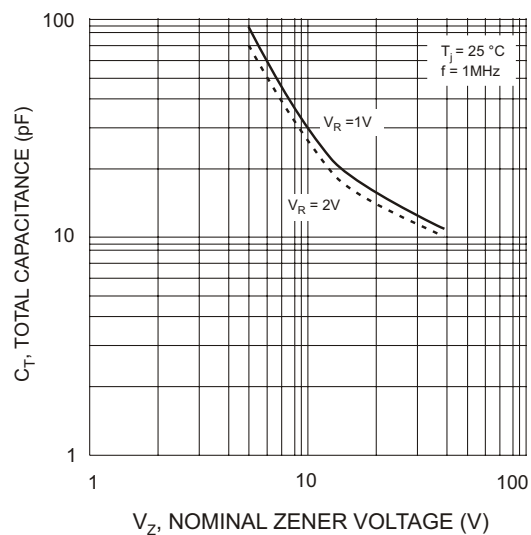


Fig. 19 Total Capacitance vs Nominal Zener Voltage