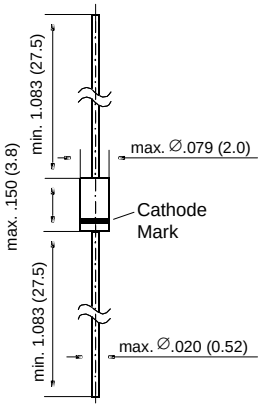
BZX55-C0V8 THRU BZX55-C75

ZENER DIODES

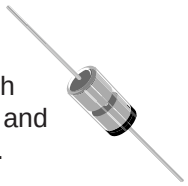
DO-35



Dimensions are in inches and (millimeters)

FEATURES

- Silicon Planar Power Zener Diodes
- The Zener voltages are graded according to the international E 24 standard. Standard Zener voltage tolerance is ±5%. Replace suffix “C” with “B” for ±2% tolerance. Other voltage tolerances and other Zener voltages are available upon request.



MECHANICAL DATA

Case: DO-35 Glass Case
Weight: approx. 0.13 g

MAXIMUM RATINGS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOL	*VALUE*	*UNIT*
Zener Current (see Table “Characteristics”)			
Power Dissipation at Tamb = 25°C	P_{tot}	500(1)	mW
Junction Temperature	T_j	175	°C
Storage Temperature Range	T_S	– 55 to +175	°C

	SYMBOL	*MIN.*	*TYP.*	*MAX.*	*UNIT*
Thermal Resistance Junction to Ambient Air	R_{thJA}	–	–	300(1)	°C/W
Forward Voltage at I_F = 100 mA	V_F	–	–	1.0	Volts

NOTES:
(1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

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BZX55-C0V8 THRU BZX55-C75

ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Type	Zener Voltage range[1] at I_Z = 5 mA	Dynamic resistance		Temp. coefficient of Zener Voltage at I_Z = 5 mA αV_Z %/K		Reverse leakage current			Admissible Zener current[2]
		at I_Z = 5 mA f = 1 kHz	at I_Z = 1mA f = 1 kHz			at T_{amb} = 25°C	at T_{amb} = 150°C	at V_R V	
	V_Z V	r_{zj} Ω	r_{zj} Ω	min	max	I_R nA	I_R µA		I_{ZM} mA
BZX55 – C0V8[3]	0.73 … 0.83	< 8	< 600	– 0.25	–	–	–	–	–
BZX55 – C2V7	2.5 … 2.9	< 85	< 600	– 0.08	– 0.06	< 10000	< 50	1	135
BZX55 – C3V0	2.8 … 3.2	< 85	< 600	– 0.08	– 0.06	< 4000	< 40	1	125
BZX55 – C3V3	3.1 … 3.5	< 85	< 600	– 0.08	– 0.05	< 2000	< 40	1	115
BZX55 – C3V6	3.4 … 3.9	< 85	< 600	– 0.08	– 0.04	< 2000	< 40	1	105
BZX55 – C3V9	3.7 … 4.1	< 85	< 600	– 0.07	– 0.03	< 2000	< 40	1	95
BZX55 – C4V3	4.0 … 4.6	< 75	< 600	– 0.04	– 0.01	< 1000	< 20	1	90
BZX55 – C4V7	4.4 … 5.0	< 60	< 600	– 0.03	+0.01	< 500	< 10	1	85
BZX55 – C5V1	4.8 … 5.4	< 35	< 550	– 0.02	+0.05	< 100	< 2	1	80
BZX55 – C5V6	5.2 … 6.0	< 25	< 450	– 0.01	+0.06	< 100	< 2	1	70
BZX55 – C6V2	5.8 … 6.6	< 10	< 200	0	+0.07	< 100	< 2	2	64
BZX55 – C6V8	6.4 … 7.2	< 8	< 150	+0.01	+0.08	< 100	< 2	3	58
BZX55 – C7V5	7.0 … 7.9	< 7	< 50	+0.01	+0.09	< 100	< 2	5	53
BZX55 – C8V2	7.7 … 8.7	< 7	< 50	+0.01	+0.09	< 100	< 2	6	47
BZX55 – C9V1	8.5 … 9.6	< 10	< 50	+0.02	+0.10	< 100	< 2	7	43
BZX55 – C10	9.4 … 10.6	< 15	< 70	+0.03	+0.11	< 100	< 2	7.5	40
BZX55 – C11	10.4 … 11.6	< 20	< 70	+0.03	+0.11	< 100	< 2	8.5	36
BZX55 – C12	11.4 … 12.7	< 20	< 90	+0.03	+0.11	< 100	< 2	9	32
BZX55 – C13	12.4 … 14.1	< 26	< 110	+0.03	+0.11	< 100	< 2	10	29
BZX55 – C15	13.8 … 15.6	< 30	< 110	+0.03	+0.11	< 100	< 2	11	27
BZX55 – C16	15.3 … 17.1	< 40	< 170	+0.03	+0.11	< 100	< 2	12	24
BZX55 – C18	16.8 … 19.1	< 50	< 170	+0.03	+0.11	< 100	< 2	14	21
BZX55 – C20	18.8 … 21.2	< 55	< 220	+0.03	+0.11	< 100	< 2	15	20
BZX55 – C22	20.8 … 23.3	< 55	< 220	+0.03	+0.11	< 100	< 2	17	18
BZX55 – C24	22.8 … 25.6	< 80	< 220	+0.04	+0.12	< 100	< 2	18	16
BZX55 – C27	25.1 … 28.9	< 80	< 220	+0.04	+0.12	< 100	< 2	20	14
BZX55 – C30	28 … 32	< 80	< 220	+0.04	+0.12	< 100	< 2	22	13
BZX55 – C33	31 … 35	< 80	< 220	+0.04	+0.12	< 100	< 2	24	12
BZX55 – C36	34 … 38	< 80	< 220	+0.04	+0.12	< 100	< 2	27	11
BZX55 – C39	37 … 41[4]	< 90[4]	< 500[5]	+0.04	+0.12	< 100	< 5	28	10
BZX55 – C43	40 … 46[4]	< 90[4]	< 600[5]	+0.04	+0.12	< 100	< 5	32	9.2
BZX55 – C47	44 … 50[4]	< 110[4]	< 700[5]	+0.04	+0.12	< 100	< 5	35	8.5
BZX55 – C51	48 … 54[4]	< 125[4]	< 700[5]	+0.04	+0.12	< 100	< 10	38	7.8
BZX55-C56	52.0 … 60.0[4]	< 135[4]	< 1000[5]	typ. +0.1[4]		< 100	< 10	42	7.0
BZX55-C62	58.0 … 66.0[4]	< 150[4]	< 1000[5]	typ. +0.1[4]		< 100	< 10	47	6.4
BZX55-C68	64.0 … 72.0[4]	< 200[4]	< 1000[5]	typ. +0.1[4]		< 100	< 10	51	5.9
BZX55-C75	70.0 … 79.0[4]	< 250[4]	< 1000[5]	typ. +0.1[4]		< 100	< 10	56	5.3

NOTES:

(1) Tested with pulses t_p = 5 ms

(2) Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case

(3) The BZX55–C0V8 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be “F” instead of “Z”. Connect the cathode lead to the negative pole

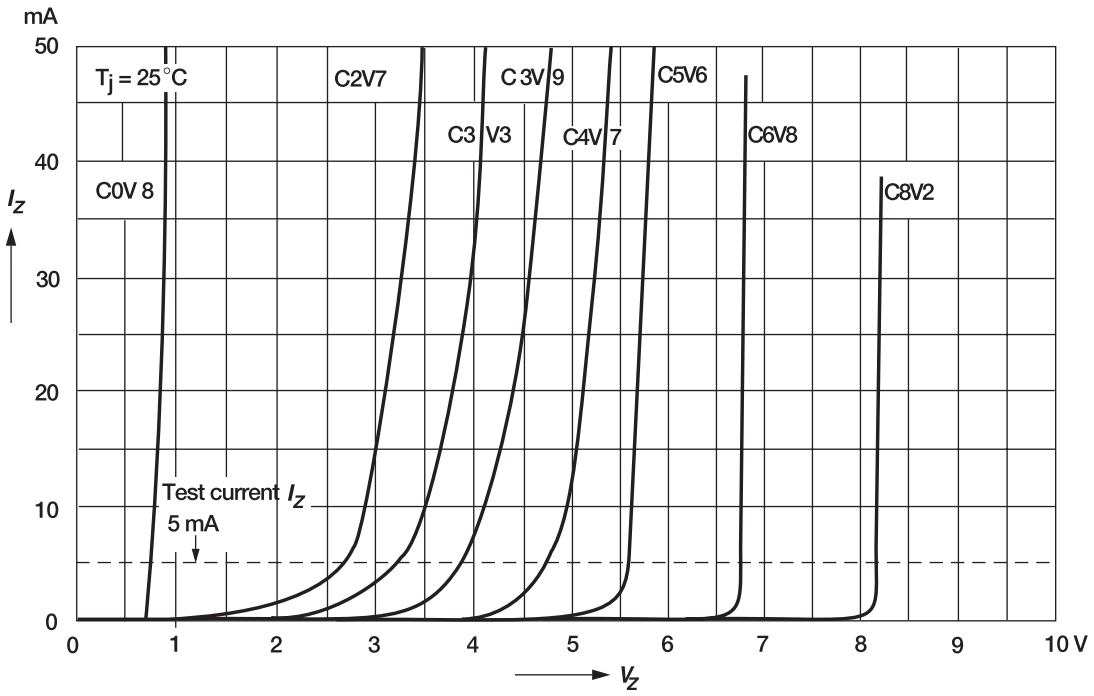
(4) at I_Z = 2.5 mA

(5) at I_Z = 0.5 mA

RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

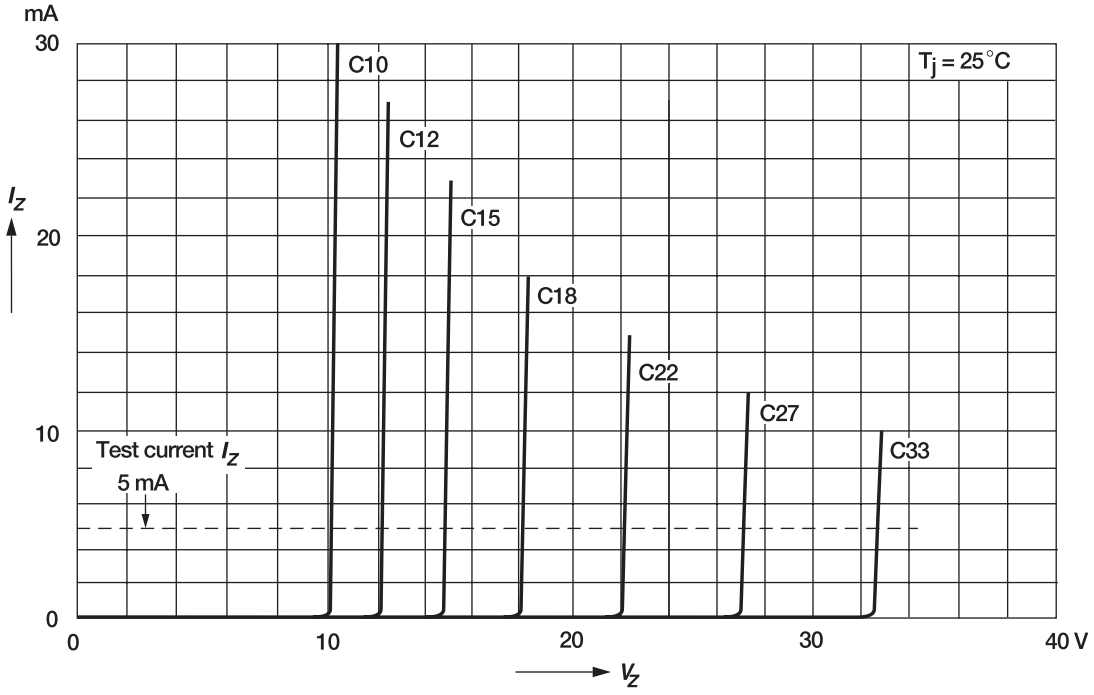
Breakdown characteristics

at T_j = constant (pulsed)



Breakdown characteristics

at T_j = constant (pulsed)



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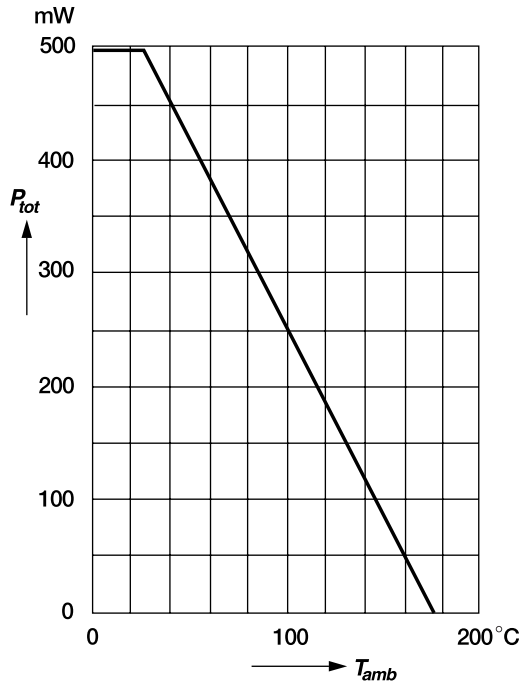
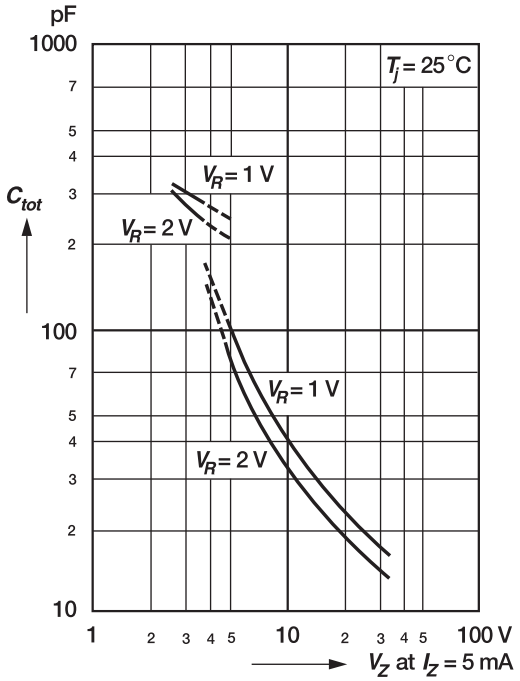
RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

Admissible power dissipation versus ambient temperature

Valid provided that leads are kept ambient temperature at a distance of 8 mm from case.

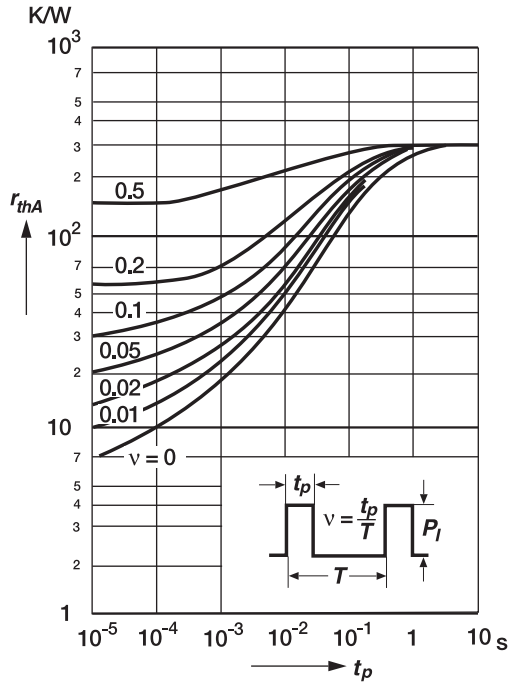


Capacitance versus Zener voltage

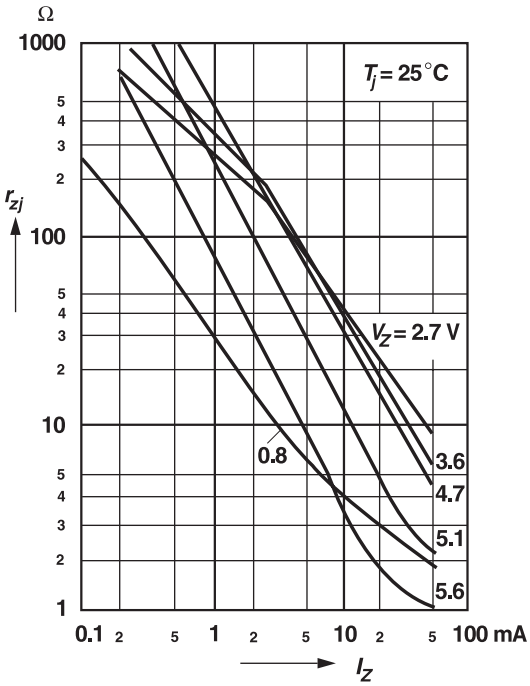


Pulse thermal resistance versus pulse duration

Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



Dynamic resistance versus Zener current



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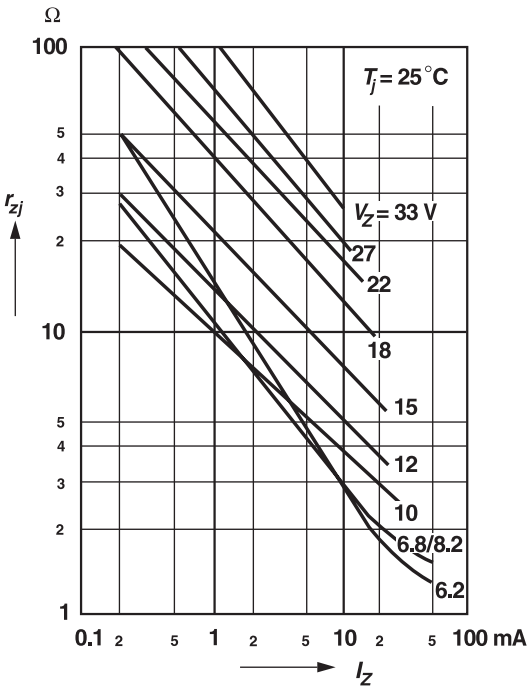
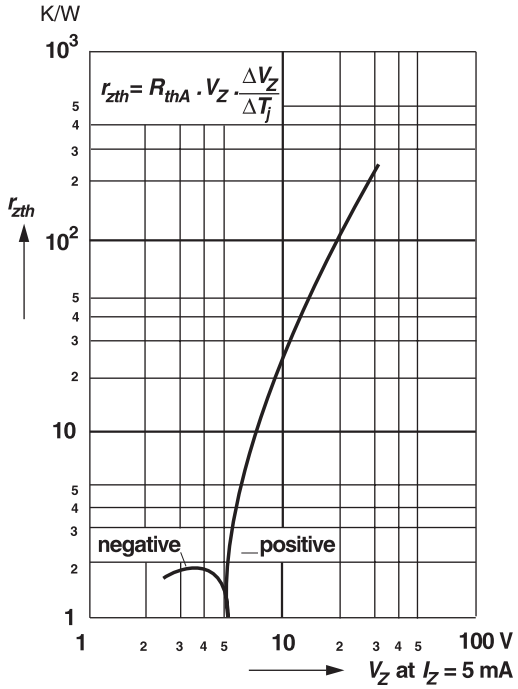
RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

Dynamic resistance versus Zener current

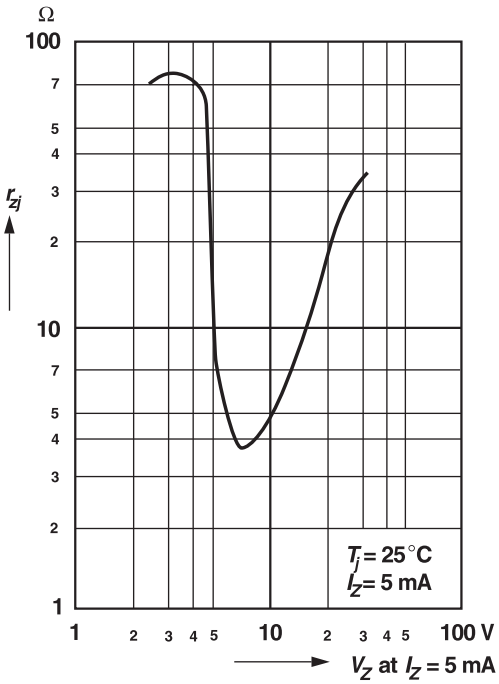


Thermal differential resistance versus Zener voltage

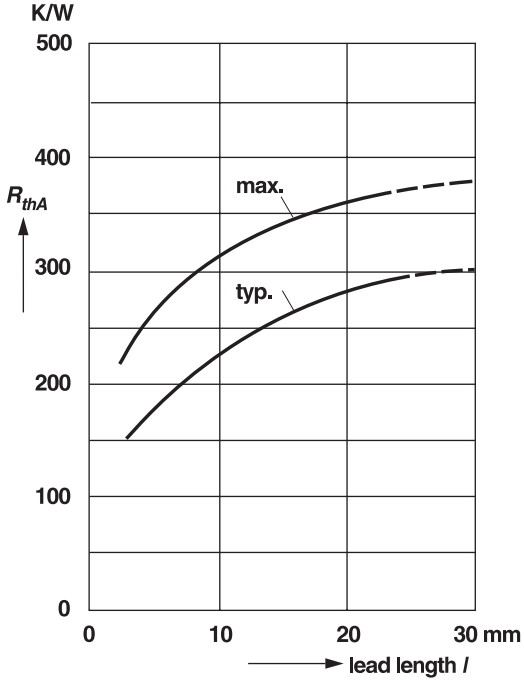
Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



Dynamic resistance versus Zener voltage



Thermal resistance versus lead length



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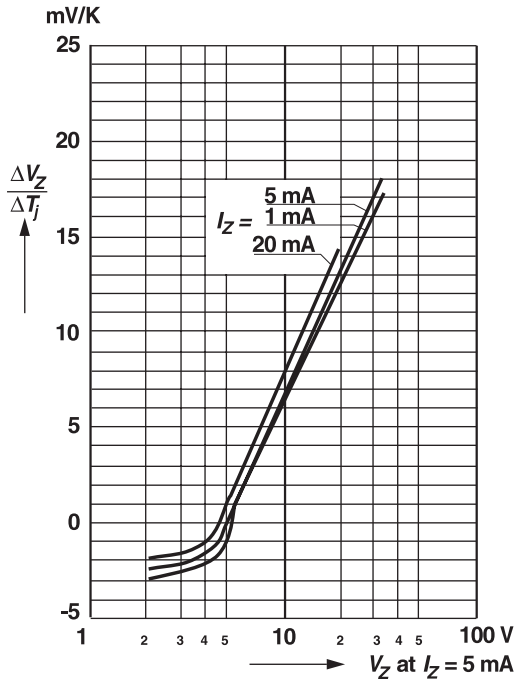
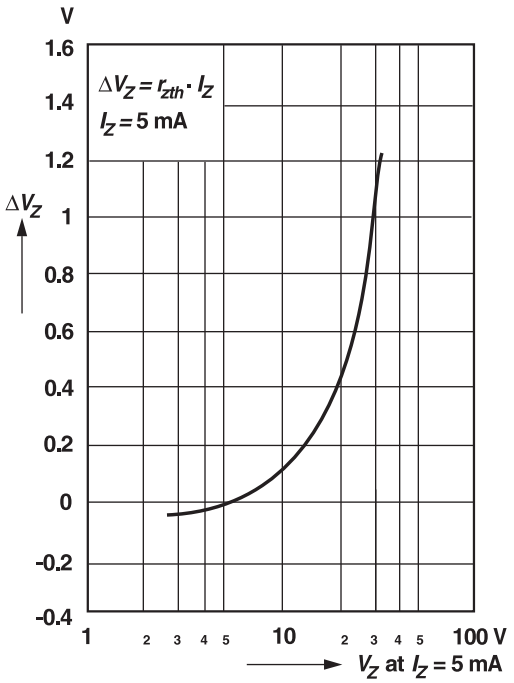
Temperature dependence of Zener voltage versus Zener voltage



Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



Change of Zener voltage versus junction temperature