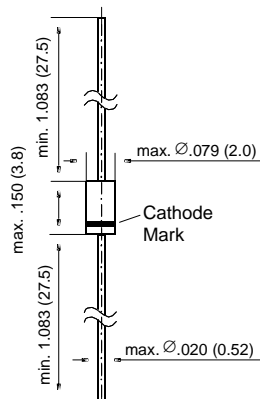


# BZX55-C0V8 THRU BZX55-C75

## 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  $\pm 5\%$ . Replace suffix "C" with "B" for  $\pm 2\%$  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 $T_{amb} = 25^{\circ}\text{C}$	$P_{tot}$	500 <sup>(1)</sup>	mW
Junction Temperature	$T_j$	175	$^{\circ}\text{C}$
Storage Temperature Range	$T_s$	- 55 to +175	$^{\circ}\text{C}$

	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance Junction to Ambient Air	$R_{thJA}$	-	-	300 <sup>(1)</sup>	$^{\circ}\text{C}/\text{W}$
Forward Voltage at $I_F = 100 \text{ mA}$	$V_F$	-	-	1.0	Volts

**NOTES:**

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

# BZX55-C0V8 THRU BZX55-C75

## ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Type	Zener Voltage range <sup>(1)</sup> at I <sub>Z</sub> = 5 mA  V <sub>Z</sub> V	Dynamic resistance		Temp. coefficient of Zener Voltage at I <sub>Z</sub> = 5 mA αV <sub>Z</sub> %/K		Reverse leakage current			Admissible Zener current <sup>(2)</sup>  I <sub>ZM</sub> mA
		at I <sub>Z</sub> = 5 mA f = 1 kHz	at I <sub>Z</sub> = 1mA f = 1 kHz	min	max	at T <sub>amb</sub> = 25°C	at T <sub>amb</sub> = 150°C	at V <sub>R</sub> V	
		r <sub>Zj</sub> Ω	r <sub>Zj</sub> Ω			I <sub>R</sub> nA	I <sub>R</sub> μA		
BZX55 – C0V8 <sup>(3)</sup>	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 <sup>(4)</sup>	< 90 <sup>(4)</sup>	< 500 <sup>(5)</sup>	+0.04	+0.12	< 100	< 5	28	10
BZX55 – C43	40 ... 46 <sup>(4)</sup>	< 90 <sup>(4)</sup>	< 600 <sup>(5)</sup>	+0.04	+0.12	< 100	< 5	32	9.2
BZX55 – C47	44 ... 50 <sup>(4)</sup>	< 110 <sup>(4)</sup>	< 700 <sup>(5)</sup>	+0.04	+0.12	< 100	< 5	35	8.5
BZX55 – C51	48 ... 54 <sup>(4)</sup>	< 125 <sup>(4)</sup>	< 700 <sup>(5)</sup>	+0.04	+0.12	< 100	< 10	38	7.8
BZX55-C56	52.0 ... 60.0 <sup>(4)</sup>	< 135 <sup>(4)</sup>	< 1000 <sup>(5)</sup>	typ. +0.1 <sup>(4)</sup>		< 100	< 10	42	7.0
BZX55-C62	58.0 ... 66.0 <sup>(4)</sup>	< 150 <sup>(4)</sup>	< 1000 <sup>(5)</sup>	typ. +0.1 <sup>(4)</sup>		< 100	< 10	47	6.4
BZX55-C68	64.0 ... 72.0 <sup>(4)</sup>	< 200 <sup>(4)</sup>	< 1000 <sup>(5)</sup>	typ. +0.1 <sup>(4)</sup>		< 100	< 10	51	5.9
BZX55-C75	70.0 ... 79.0 <sup>(4)</sup>	< 250 <sup>(4)</sup>	< 1000 <sup>(5)</sup>	typ. +0.1 <sup>(4)</sup>		< 100	< 10	56	5.3

### NOTES:

(1) Tested with pulses t<sub>p</sub> = 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

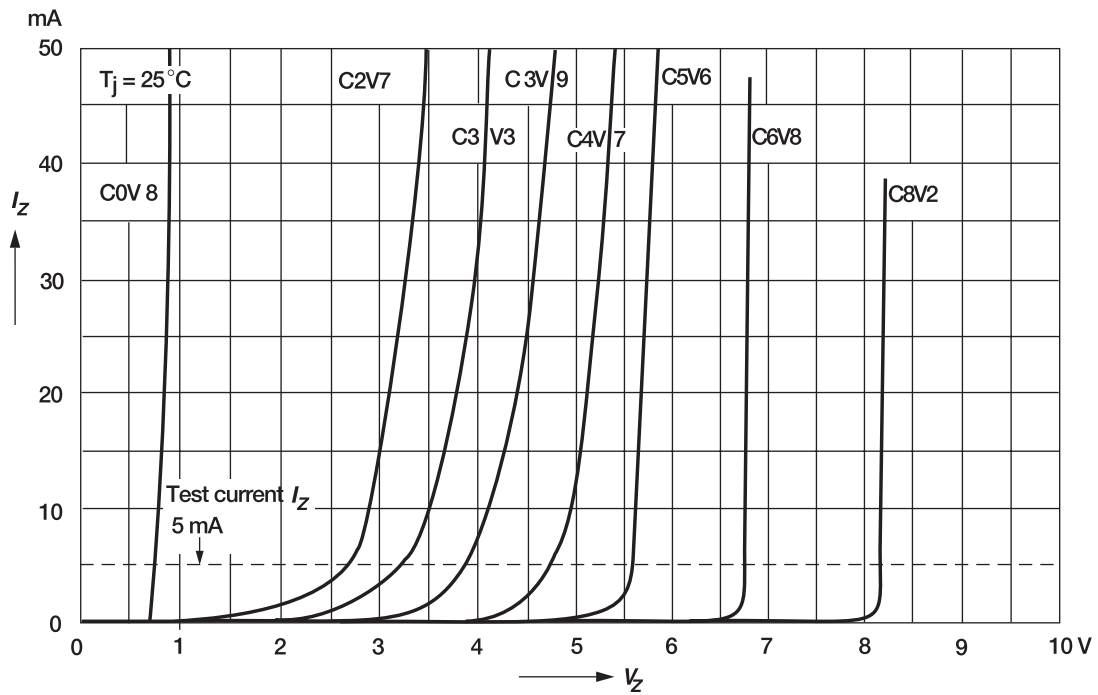
(4) at I<sub>Z</sub> = 2.5 mA

(5) at I<sub>Z</sub> = 0.5 mA

# RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

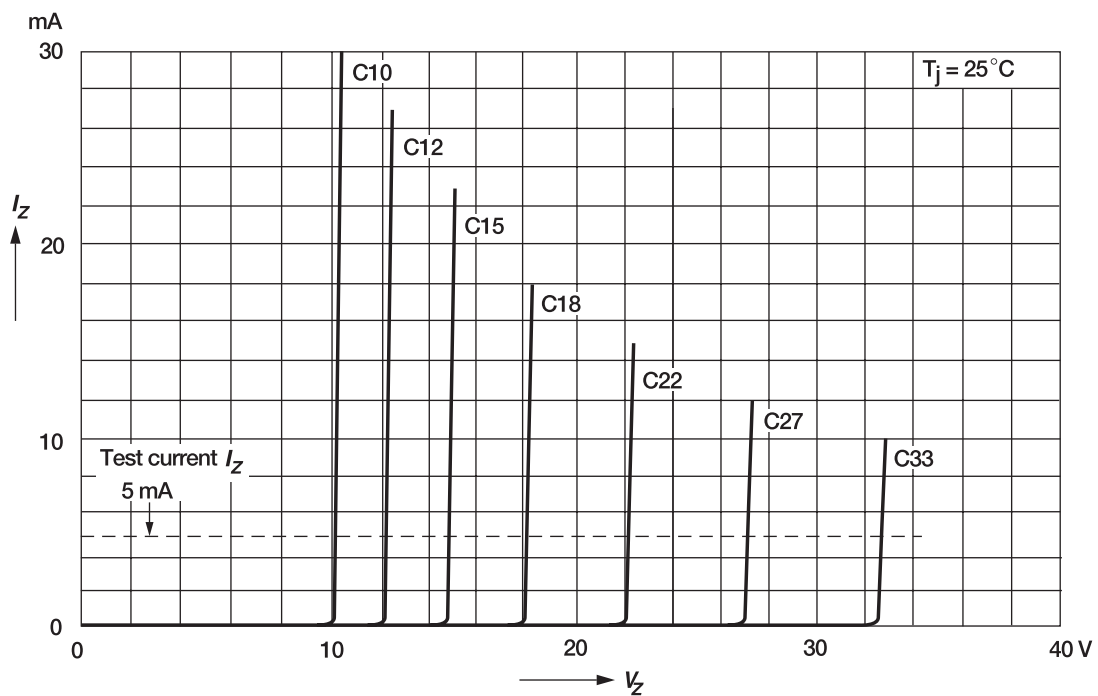
## Breakdown characteristics

at  $T_j = \text{constant}$  (pulsed)



## Breakdown characteristics

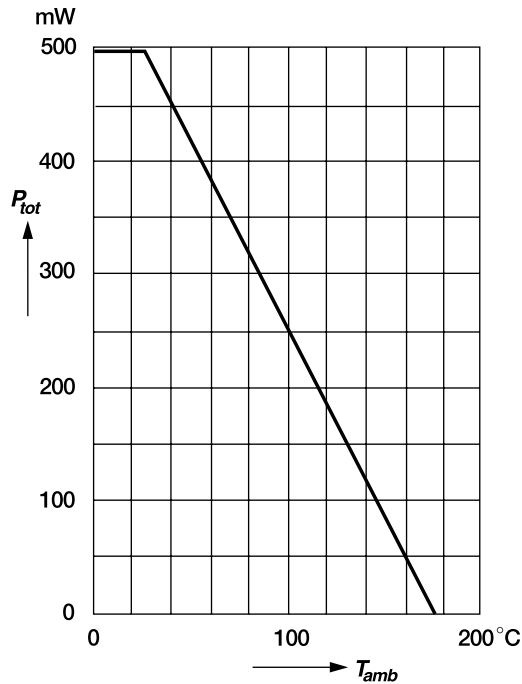
at  $T_j = \text{constant}$  (pulsed)



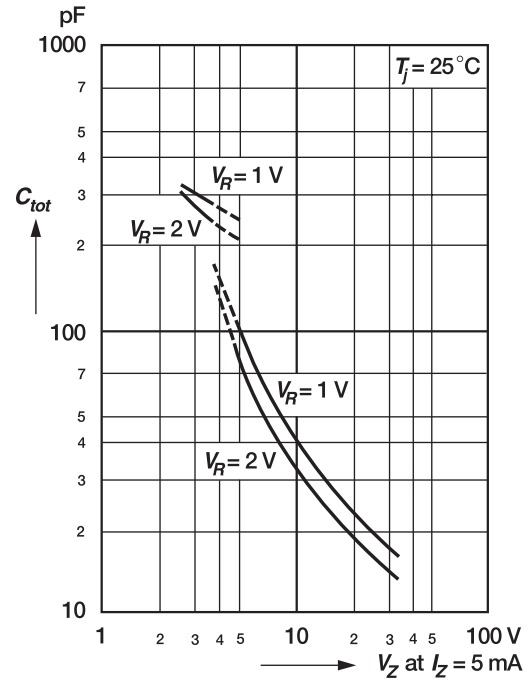
# RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

## Admissible power dissipation versus ambient temperature

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

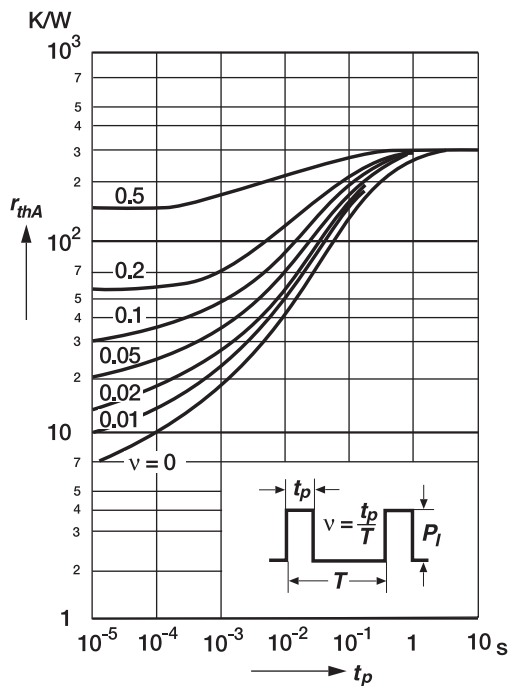


## Capacitance versus Zener voltage

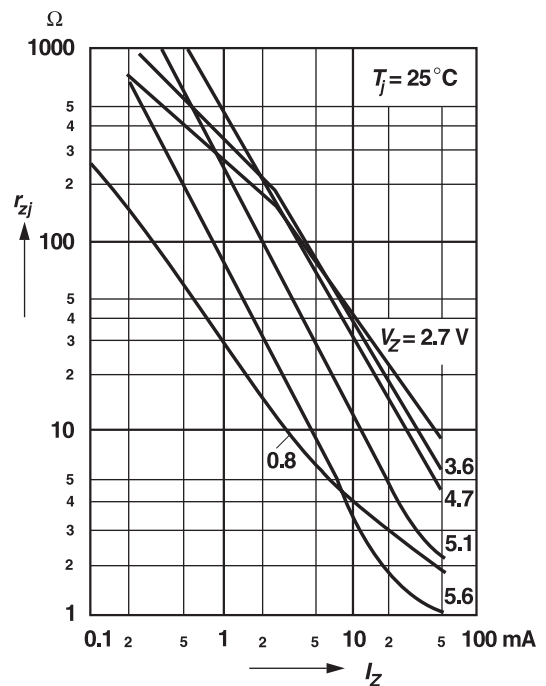


## Pulse thermal resistance versus pulse duration

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

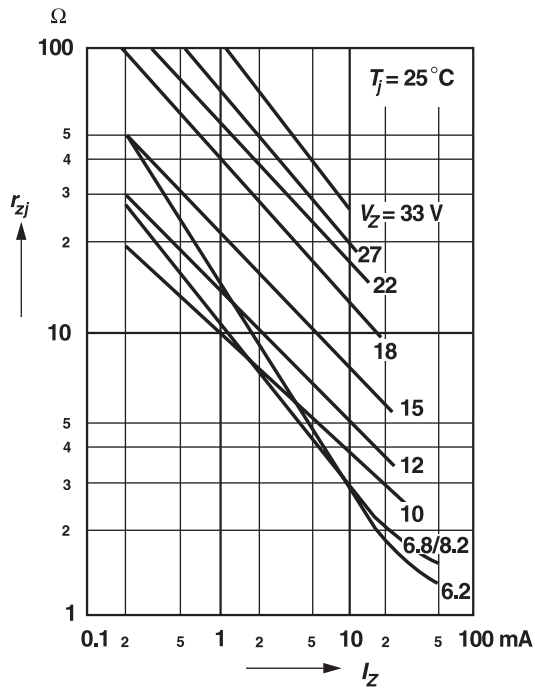


## Dynamic resistance versus Zener current



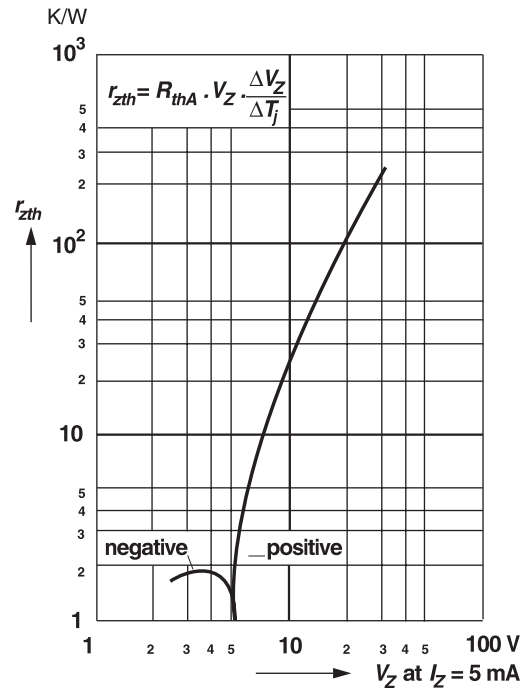
# RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

Dynamic resistance versus Zener current

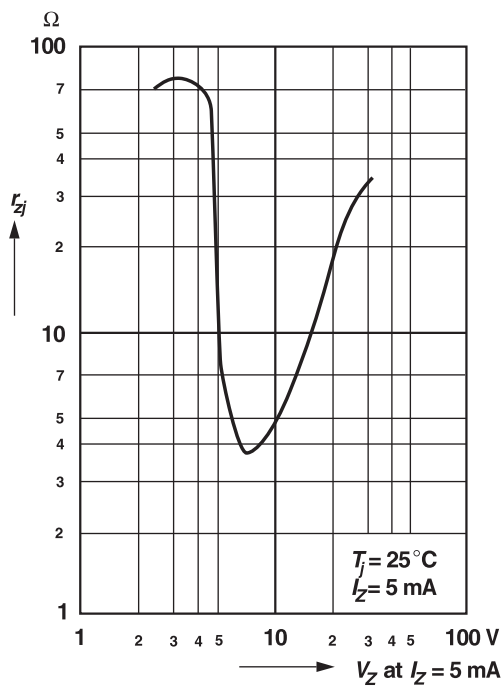


Thermal differential resistance versus Zener voltage

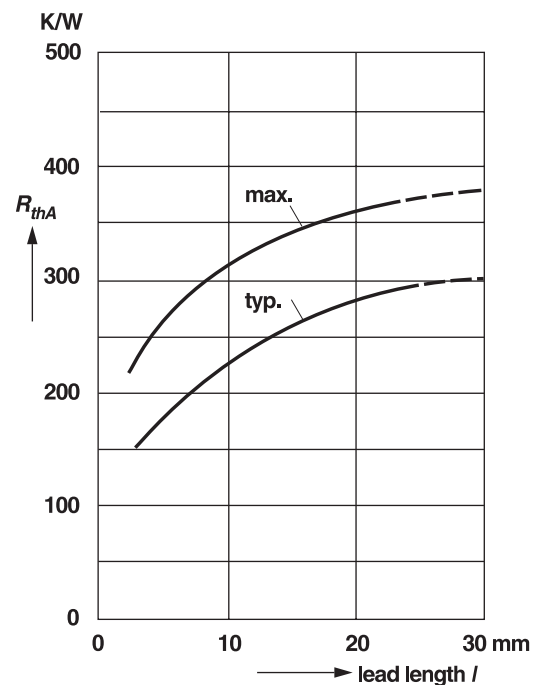
Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



Dynamic resistance versus Zener voltage

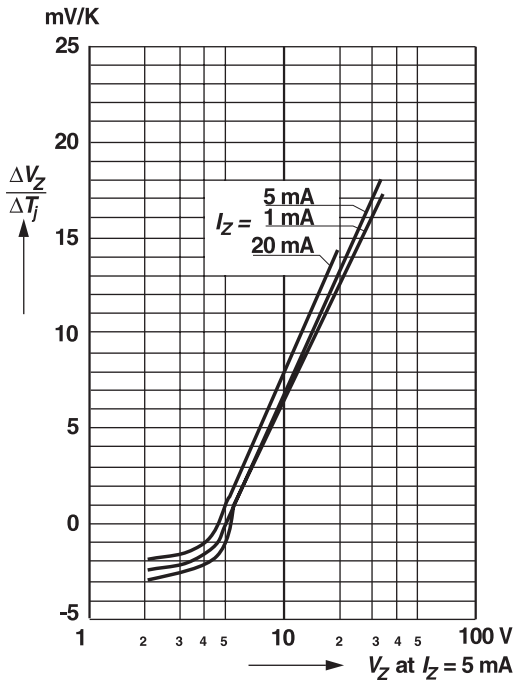


Thermal resistance versus lead length

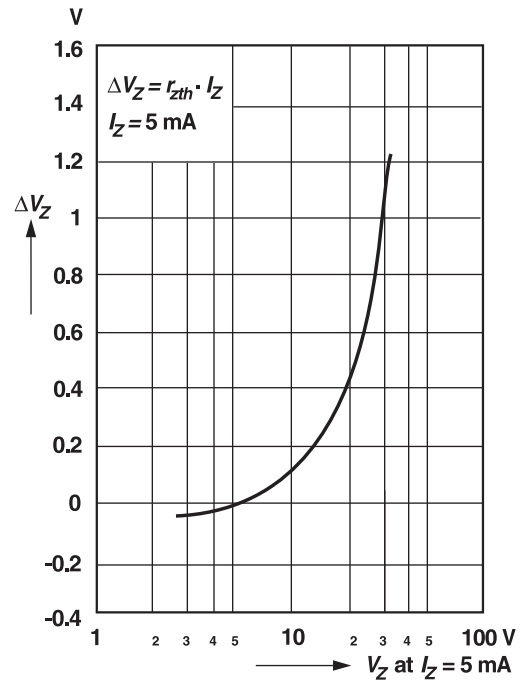


# RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

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

