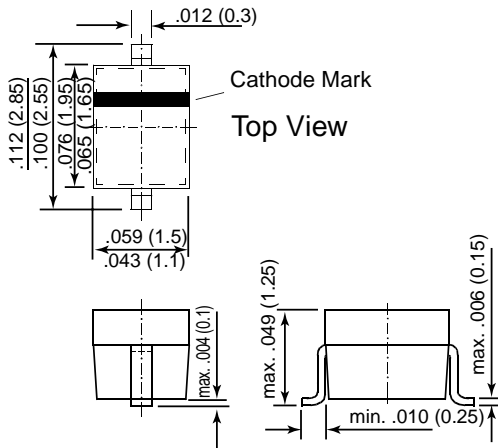


# BZX384-C2V4 THRU BZX384-C75

## ZENER DIODES

### SOD-323



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 "C" with "B" for  $\pm 2\%$  tolerance. Other voltage tolerances and other Zener voltages are available upon request.



### MECHANICAL DATA

Case: SOD-323 Plastic Package

Weight: approx. 0.004 g

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNIT
Zener Current	I <sub>ZM</sub>	250	mA
Power Dissipation at T <sub>amb</sub> = 25°C	P <sub>tot</sub>	200 <sup>(1)</sup>	mW
Junction Temperature	T <sub>j</sub>	175	°C
Storage Temperature Range	T <sub>s</sub>	- 65 to +175	°C

**NOTES:**

(1) Device on fiberglass substrate, see layout.

	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance Junction to Ambient Air	R <sub>thJA</sub>	-	-	650 <sup>(1)</sup>	K/W
Forward Voltage at I <sub>F</sub> = 10 mA	-	-	-	0.9	Volts

**NOTES:**

(1) Valid provided that electrodes are kept at ambient temperature

# BZX384-C2V4 THRU BZX384-C75

## ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Type	Marking	Zener Voltage <sup>(1)</sup> at I <sub>ZT1</sub> V <sub>Z</sub> (V)	Dynamic Resistance at I <sub>ZT1</sub> r <sub>Zj</sub> (Ω)	Temp. Coefficient of Zener Voltage at I <sub>ZT1</sub> α <sub>VZ</sub> (10 <sup>-4</sup> /K)	Test Current I <sub>ZT1</sub> (mA)	Dynamic Resistance at I <sub>ZT2</sub> r <sub>Zj</sub> (Ω)	Test Current I <sub>ZT2</sub> (mA)	Reverse Leakage Current	
								I <sub>R</sub> (μA)	at V <sub>R</sub> (V)
BZX384-C2V4	W1	2.20 ... 2.60	70 (≤100)	-3.5 ... 0.0	5	275	1.0	50.0	1.0
BZX384-C2V7	W2	2.50 ... 2.90	75 (≤100)	-9.0 ... -4.0	5	300 (≤600)	1.0	20.0	1.0
BZX384-C3	W3	2.80 ... 3.20	80 (≤95)	-9.0 ... -3.0	5	325 (≤600)	1.0	10.0	1.0
BZX384-C3V3	W4	3.10 ... 3.50	85 (≤95)	-8.0 ... -3.0	5	350 (≤600)	1.0	5.00	1.0
BZX384-C3V6	W5	3.40 ... 3.80	85 (≤90)	-8.0 ... -3.0	5	375 (≤600)	1.0	5.00	1.0
BZX384-C3V9	W6	3.70 ... 4.10	85 (≤90)	-7.0 ... -3.0	5	400 (≤600)	1.0	3.00	1.0
BZX384-C4V3	W7	4.00 ... 4.60	80 (≤90)	-6.0 ... -1.0	5	410 (≤600)	1.0	3.00	1.0
BZX384-C4V7	W8	4.40 ... 5.00	50 (≤80)	-5.0 ... +2.0	5	425 (≤500)	1.0	3.00	2.0
BZX384-C5V1	W9	4.80 ... 5.40	40 (≤60)	-3.0 ... +4.0	5	400 (≤480)	1.0	2.00	2.0
BZX384-C5V6	WA	5.20 ... 6.00	15 (≤40)	-2.0 ... +6.0	5	80 (≤400)	1.0	1.00	2.0
BZX384-C6V2	WB	5.80 ... 6.60	6.0 (≤10)	-1.0 ... +7.0	5	40 (≤150)	1.0	3.00	4.0
BZX384-C6V8	WC	6.40 ... 7.20	6.0 (≤15)	+2.0 ... +7.0	5	30 (≤80)	1.0	2.00	4.0
BZX384-C7V5	WD	7.00 ... 7.90	6.0 (≤15)	+3.0 ... +7.0	5	30 (≤80)	1.0	1.00	5.0
BZX384-C8V2	WE	7.70 ... 8.70	6.0 (≤15)	+4.0 ... +7.0	5	40 (≤80)	1.0	0.70	5.0
BZX384-C9V1	WF	8.50 ... 9.60	6.0 (≤15)	+5.0 ... +8.0	5	40 (≤100)	1.0	0.50	6.0
BZX384-C10	WG	9.40 ... 10.6	8.0 (≤20)	+5.0 ... +8.0	5	50 (≤150)	1.0	0.20	7.0
BZX384-C11	WH	10.4 ... 11.6	10 (≤20)	+5.0 ... +9.0	5	50 (≤150)	1.0	0.10	8.0
BZX384-C12	WI	11.4 ... 12.7	10 (≤25)	+6.0 ... +9.0	5	50 (≤150)	1.0	0.10	8.0
BZX384-C13	WK	12.4 ... 14.1	10 (≤30)	+7.0 ... +9.0	5	50 (≤170)	1.0	0.10	8.0
BZX384-C15	WL	13.8 ... 15.6	10 (≤30)	+7.0 ... +9.0	5	50 (≤200)	1.0	0.05	0.7 V <sub>Znom.</sub>
BZX384-C16	WM	15.3 ... 17.1	10 (≤40)	+8.0 ... +9.5	5	50 (≤200)	1.0	0.05	0.7 V <sub>Znom.</sub>
BZX384-C18	WN	16.8 ... 19.1	10 (≤45)	+8.0 ... +9.5	5	50 (≤225)	1.0	0.05	0.7 V <sub>Znom.</sub>
BZX384-C20	WO	18.8 ... 21.2	15 (≤55)	+8.0 ... +10	5	60 (≤225)	1.0	0.05	0.7 V <sub>Znom.</sub>
BZX384-C22	WP	20.8 ... 23.3	20 (≤55)	+8.0 ... +10	5	60 (≤250)	1.0	0.05	0.7 V <sub>Znom.</sub>
BZX384-C24	WR	22.8 ... 25.6	25 (≤70)	+8.0 ... +10	5	60 (≤250)	1.0	0.05	0.7 V <sub>Znom.</sub>
BZX384-C27	WS	25.1 ... 28.9	25 (≤80)	+8.0 ... +10	2	65 (≤300)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C30	WT	28.0 ... 32.0	30 (≤80)	+8.0 ... +10	2	70 (≤300)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C33	WU	31.0 ... 35.0	35 (≤80)	+8.0 ... +10	2	75 (≤325)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C36	WW	34.0 ... 38.0	35 (≤90)	+8.0 ... +10	2	80 (≤350)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C39	WX	37.0 ... 41.0	40 (≤130)	+10.0 ... +12	2	80 (≤350)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C43	WY	40.0 ... 46.0	45 (≤150)	+10.0 ... +12	2	85 (≤375)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C47	WZ	44.0 ... 50.0	50 (≤170)	+10.0 ... +12	2	85 (≤375)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C51	X1	48.0 ... 54.0	60 (≤180)	+10.0 ... +12	2	85 (≤400)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C56	X2	52.0 ... 60.0	70 (≤200)	+9.0 ... +11	2	100 (≤425)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C62	X3	58.0 ... 66.0	80 (≤215)	+9.0 ... +12	2	100 (≤450)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C68	X4	64.0 ... 72.0	90 (≤240)	+10.0 ... +12	2	150 (≤475)	0.5	0.05	0.7 V <sub>Znom.</sub>
BZX384-C75	X5	70.0 ... 79.0	95 (≤255)	+10.0 ... +12	2	170 (≤500)	0.5	0.05	0.7 V <sub>Znom.</sub>

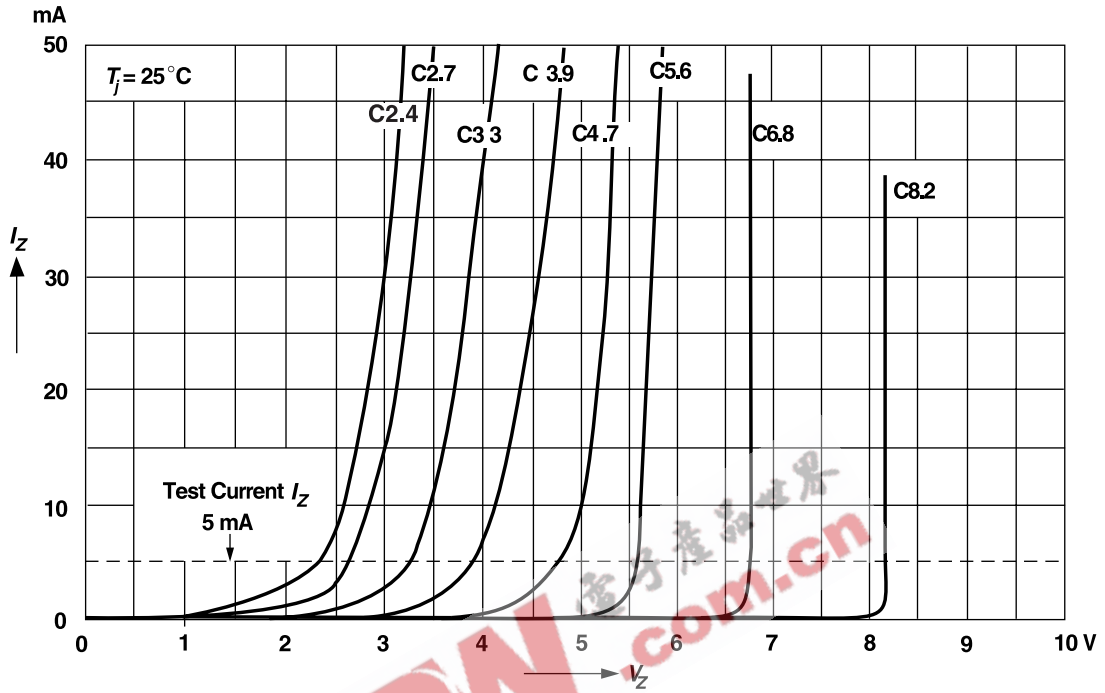
### NOTES:

(1) Measured with pulses t<sub>p</sub> = 5 ms

# RATINGS AND CHARACTERISTICS CURVES BZX384-C2V4 THRU BZX384-C75

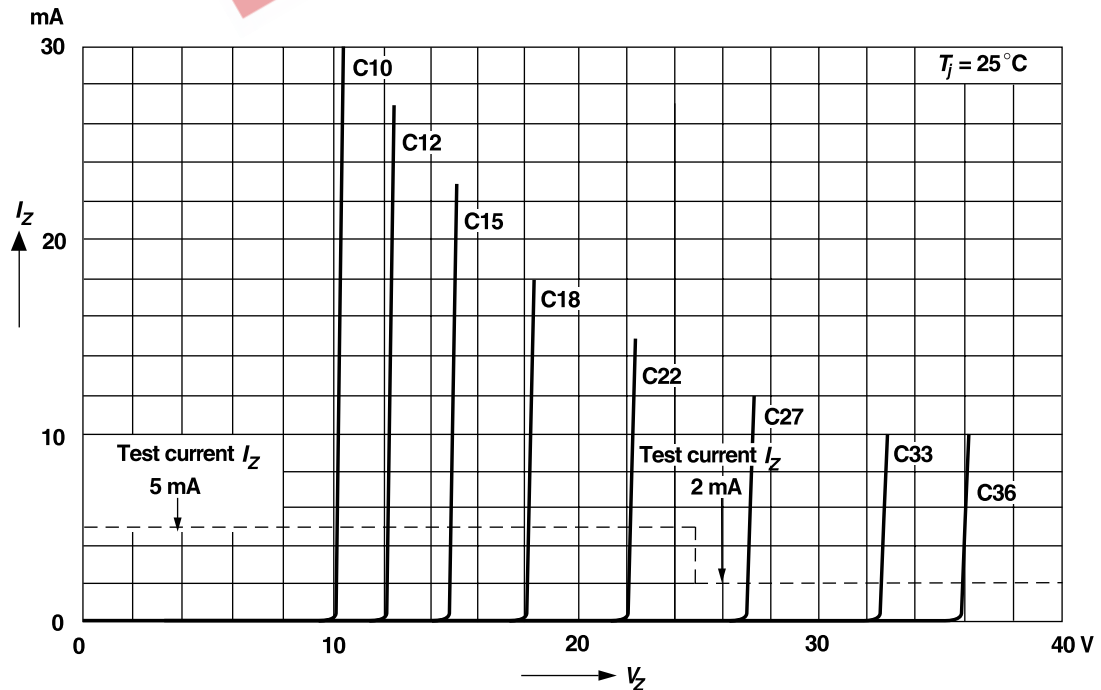
## Breakdown characteristics

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



## Breakdown characteristics

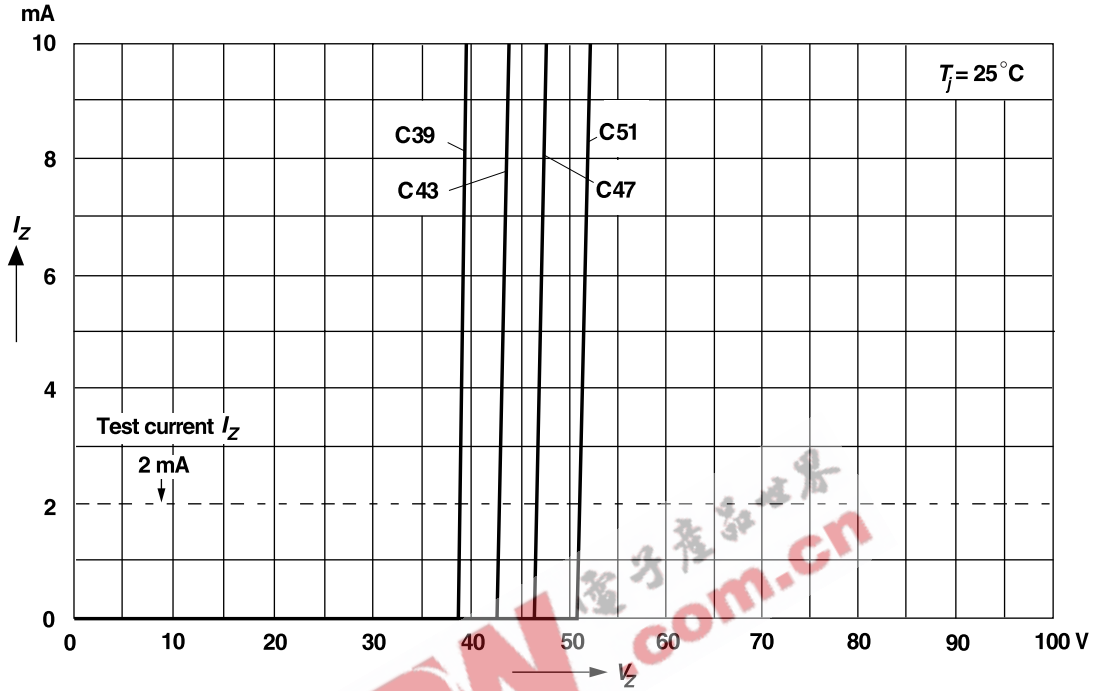
$T_j = \text{constant (pulsed)}$



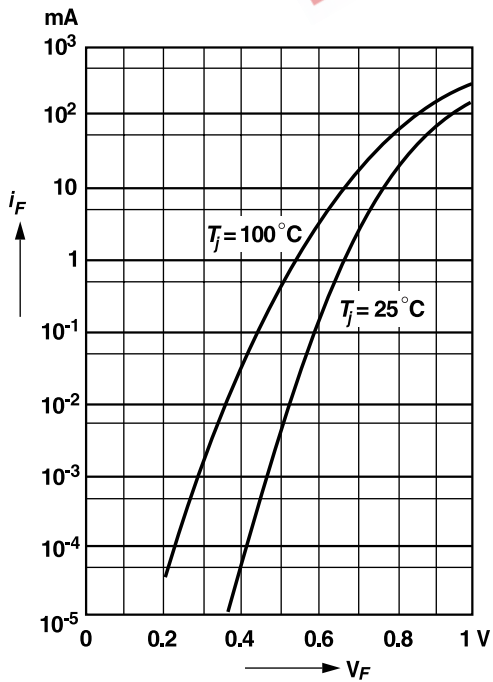
# RATINGS AND CHARACTERISTICS CURVES BZX384-C2V4 THRU BZX384-C75

## Breakdown characteristics

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

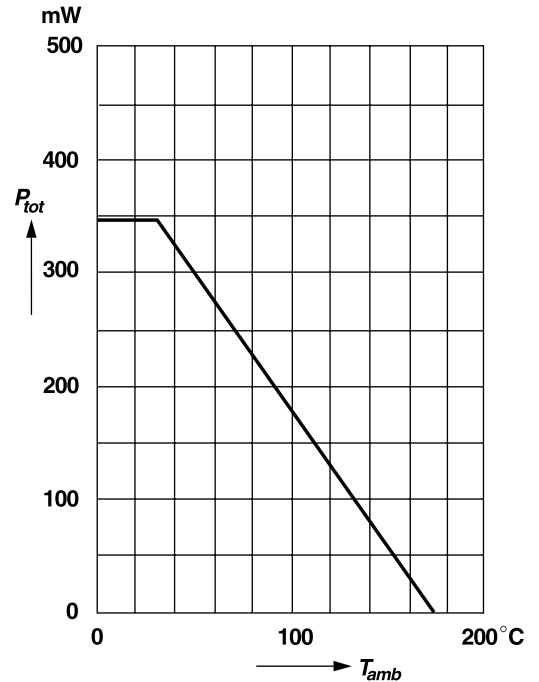


## Forward characteristics



## Admissible power dissipation versus ambient temperature

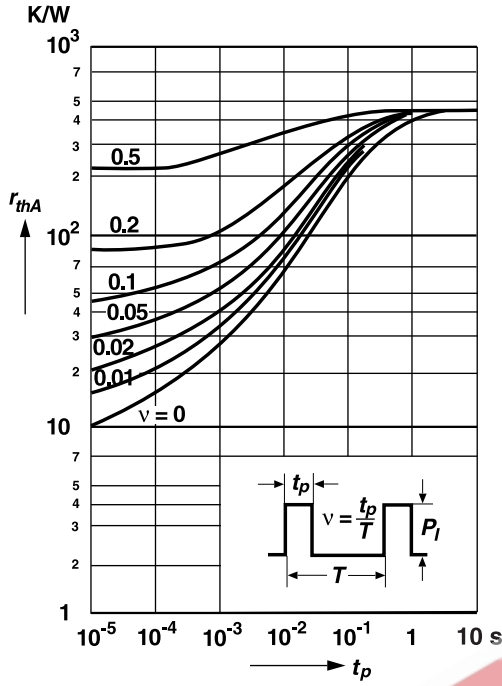
For conditions, see footnote in table "Absolute Maximum Ratings"



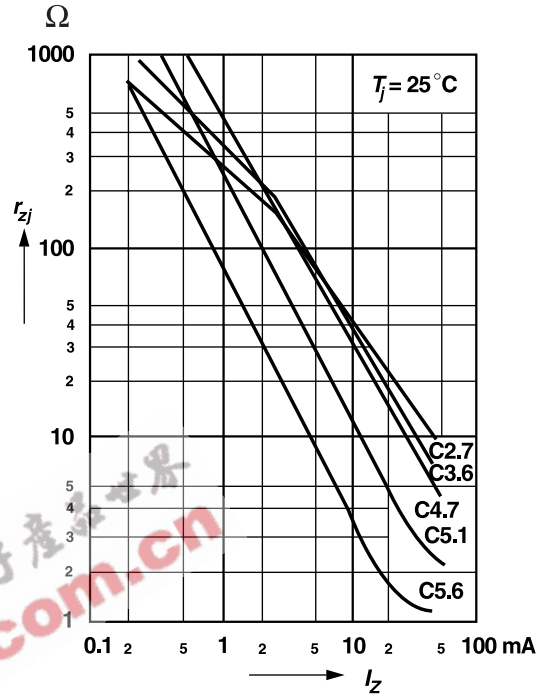
# RATINGS AND CHARACTERISTICS CURVES BZX384-C2V4 THRU BZX384-C75

**Pulse thermal resistance versus pulse duration**

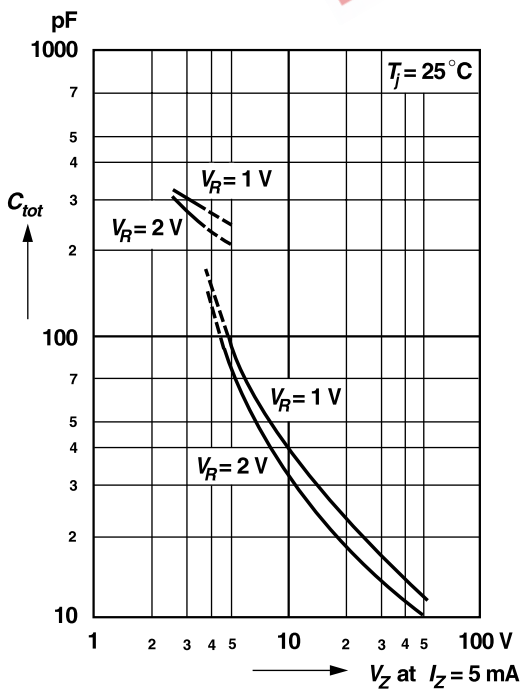
For conditions, see footnote in table "Absolute Maximum Ratings"



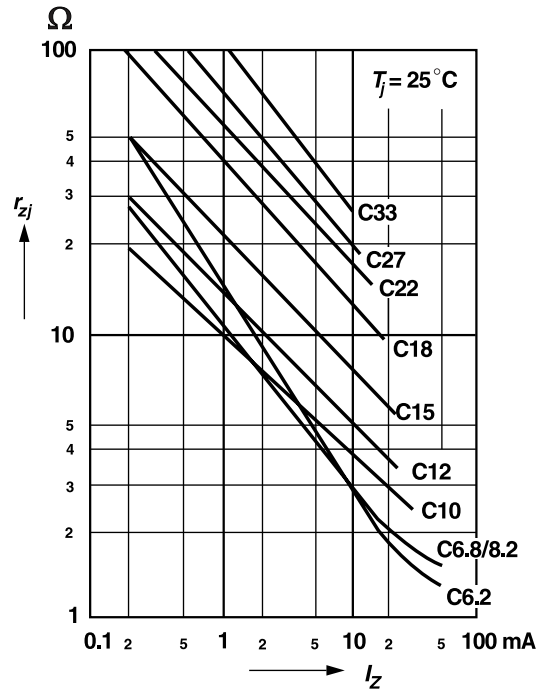
**Dynamic resistance versus Zener current**



**Capacitance versus Zener voltage**

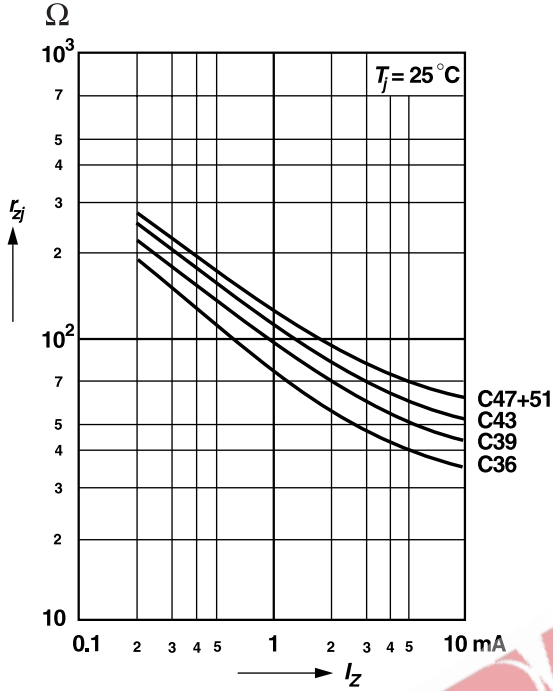


**Dynamic resistance versus Zener current**



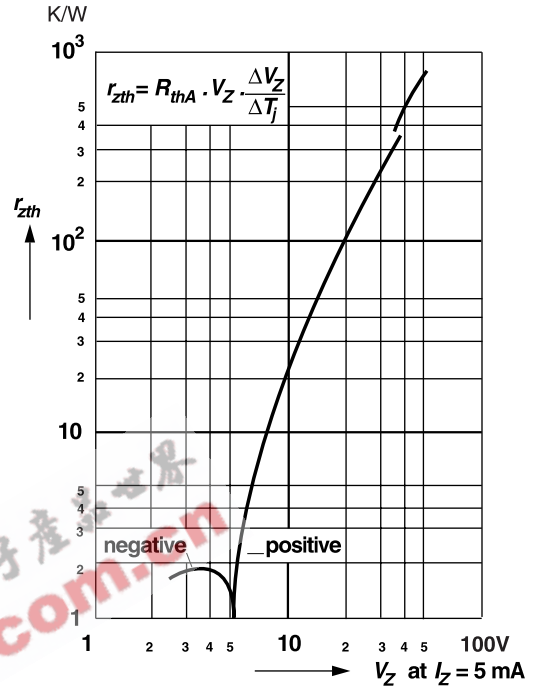
# RATINGS AND CHARACTERISTICS CURVES BZX384-C2V4 THRU BZX384-C75

**Dynamic resistance versus Zener current**

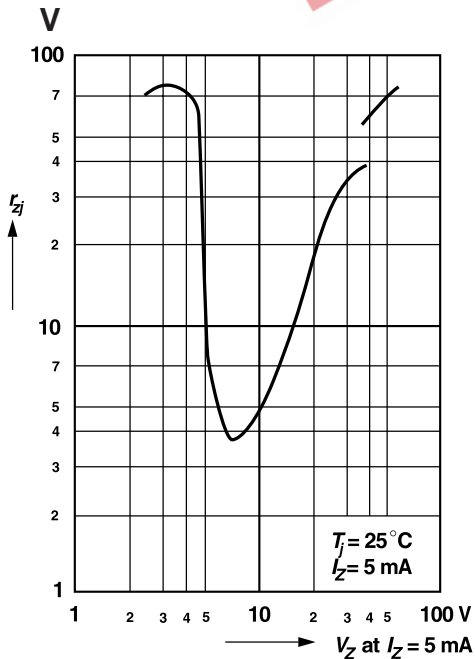


**Thermal differential resistance versus Zener voltage**

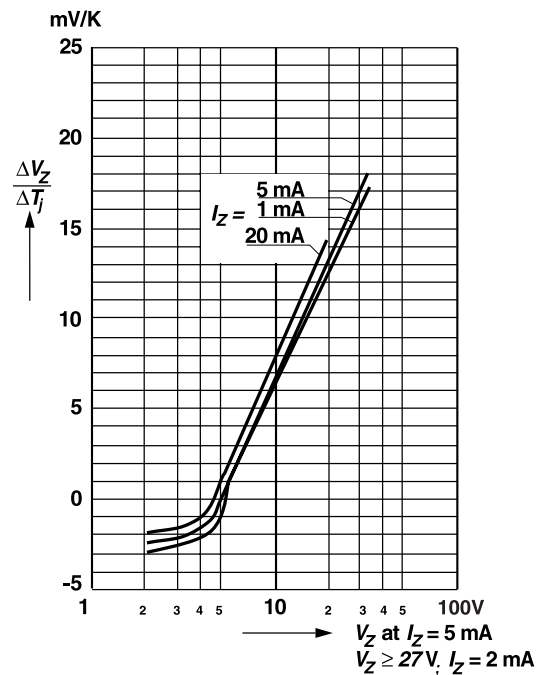
For conditions, see footnote in table "Absolute Maximum Ratings"



**Dynamic resistance versus Zener voltage**

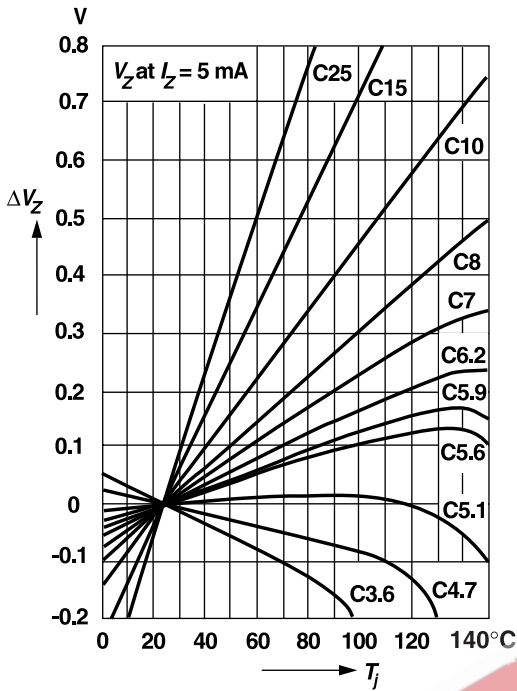


**Temperature dependence of Zener voltage versus Zener voltage**

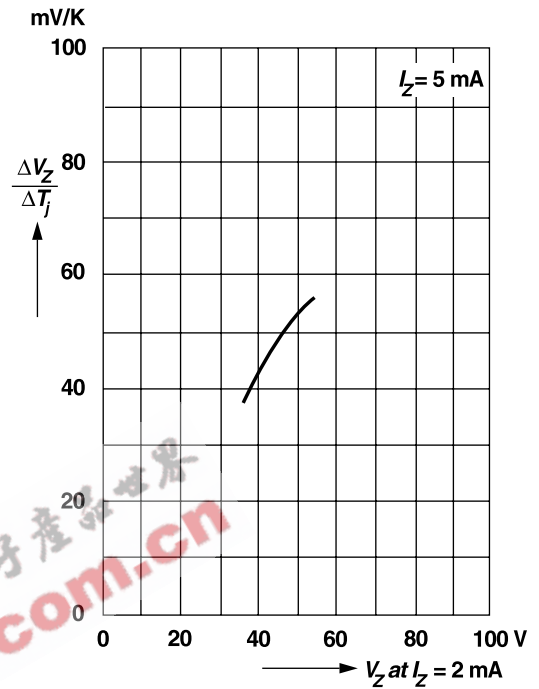


# RATINGS AND CHARACTERISTICS CURVES BZX384-C2V4 THRU BZX384-C75

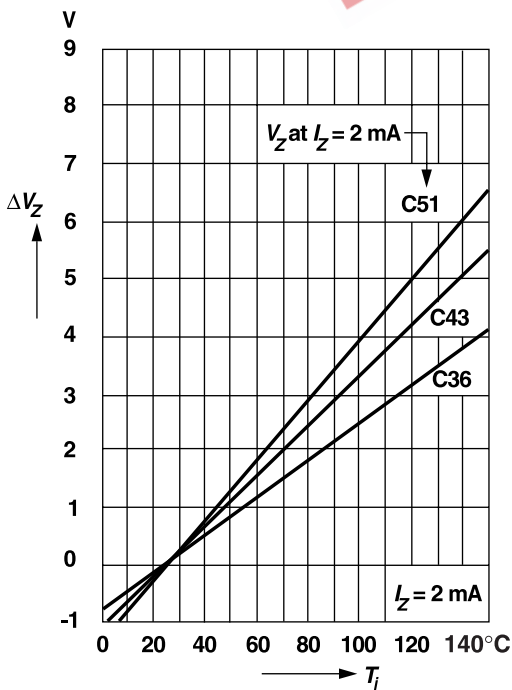
Change of Zener voltage versus junction temperature



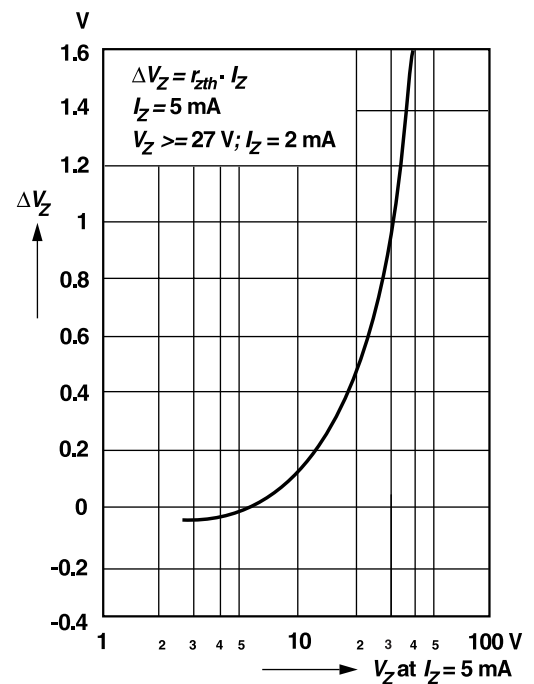
Temperature dependence of Zener voltage versus Zener voltage



Change of Zener voltage versus junction temperature

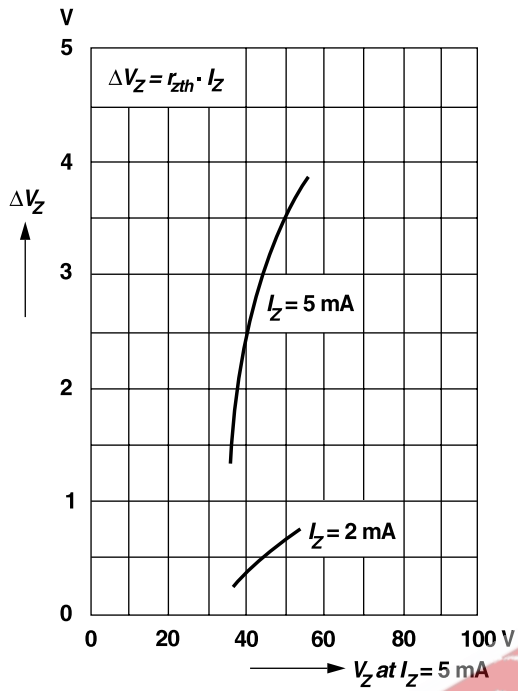


Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



## RATINGS AND CHARACTERISTICS CURVES BZX384-C2V4 THRU BZX384-C75

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



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