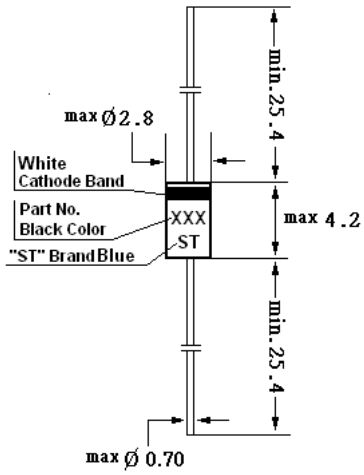
BZX85...

SILICON PLANAR POWER ZENER DIODES

for use in stabilizing and clipping circuits with high power rating.

The Zener voltages are graded according to the international E 24 standard. Other tolerances and higher Zener voltages are upon request.



Glass Case JEDEC DO-41

Dimensions in mm

Absolute Maximum Ratings (T_a = 25 °C)

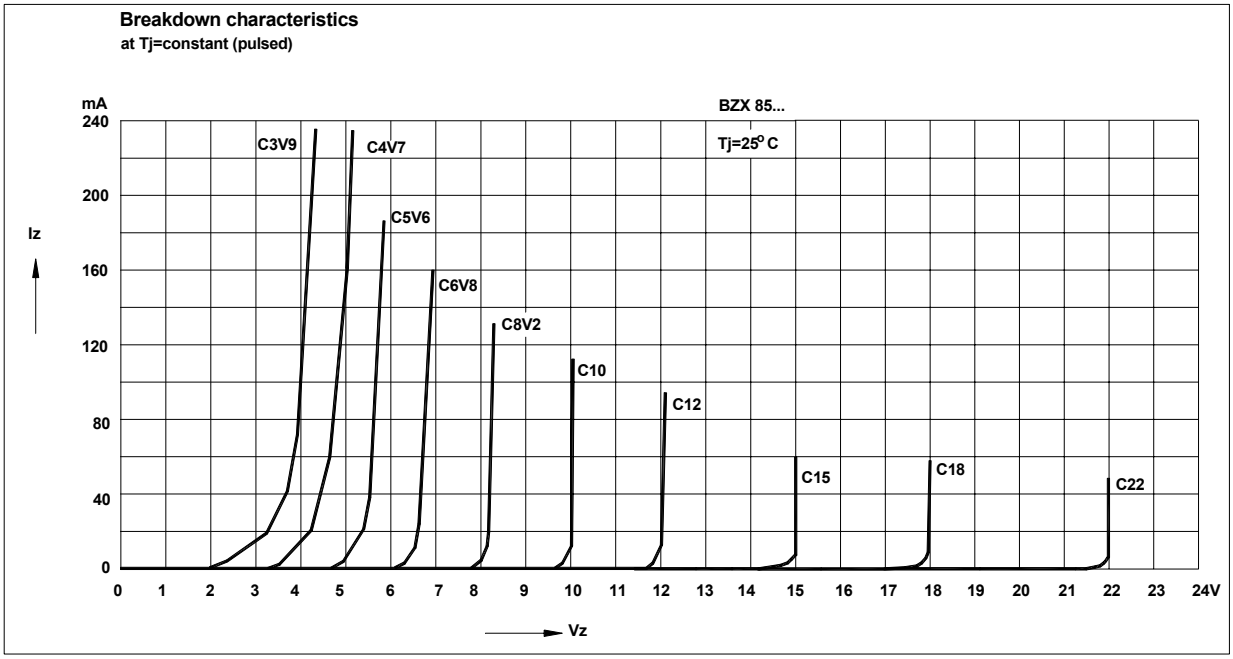
Parameter	Symbol	Value	Unit
Power Dissipation	P_{tot}	1.3 [1)]	W
Junction Temperature	T_j	200	°C
Storage Temperature Range	T_S	- 55 to + 200	°C
[1)] Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.			

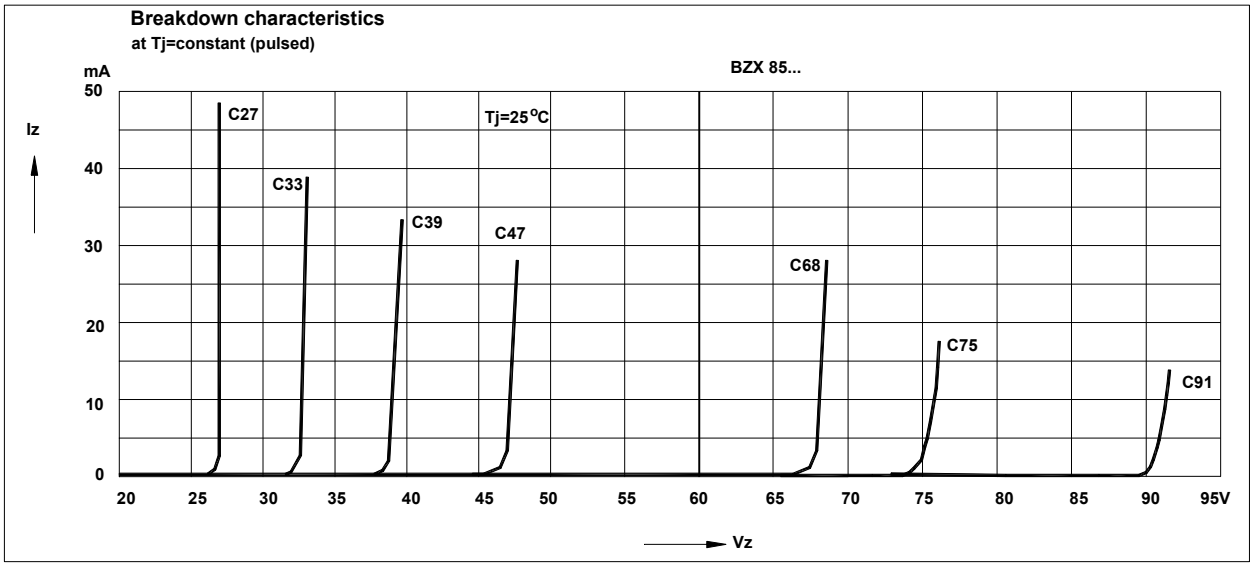
Characteristics at T_{amb} = 25 °C

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air	R_{thA}	130 [1)]	K/W
Forward Voltage at I_F = 200 mA	V_F	1.2	V
[1)] Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.			

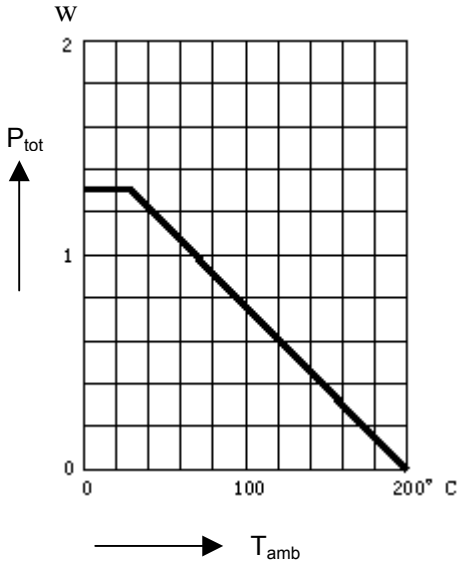
Type	Zener Voltage Range [1]			Dynamic Resistance			Reverse Leakage Current		Temp . coefficient of Zener Voltage
	Vznom	I_{ZT}	for V_{ZT}	r_{ZJT}	r_{ZJK} at	I_{ZK}	I_R at	V_R	TKvz
	V	mA	V	Ω	Ω	mA	µA	V	%/K
BZX85/C2V7	2.7	80	2.5...2.9	< 20	< 400	1	< 150	1	-0.08...-0.05
BZX85/C3V0	3.0	80	2.8...3.2	< 20	< 400	1	< 100	1	-0.08...-0.05
BZX85/C3V3	3.3	70	3.1...3.5	< 20	< 400	1	< 40	1	-0.08...-0.05
BZX85/C3V6	3.6	60	3.4...3.8	< 15	< 500	1	< 20	1	-0.08...-0.05
BZX85/C3V9	3.9	60	3.7...4.1	< 15	< 500	1	< 10	1	-0.07...-0.02
BZX85/C4V3	4.3	50	4...4.6	< 13	< 500	1	< 3	1	-0.07...+0.01
BZX85/C4V7	4.7	45	4.4...5	< 13	< 600	1	< 3	1	-0.03...+0.04
BZX85/C5V1	5.1	45	4.8...5.4	< 10	< 500	1	< 1	1.5	-0.01...+0.04
BZX85/C5V6	5.6	45	5.2...6	< 7	< 400	1	< 1	2	0...+0.045
BZX85/C6V2	6.2	35	5.8...6.6	< 4	< 300	1	< 1	3	+0.01...+0.055
BZX85/C6V8	6.8	35	6.4...7.2	< 3.5	< 300	1	< 1	4	+0.015...+0.06
BZX85/C7V5	7.5	35	7.0...7.9	< 3	< 200	0.5	< 1	4.5	+0.02...+0.065
BZX85/C8V2	8.2	25	7.7...8.7	< 5	< 200	0.5	< 1	6.2	0.03...0.07
BZX85/C9V1	9.1	25	8.5...9.6	< 5	< 200	0.5	< 1	6.8	0.035...0.075
BZX85/C10	10	25	9.4...10.6	< 7	< 200	0.5	< 0.5	7	0.04...0.08
BZX85/C11	11	20	10.4...11.6	< 8	< 300	0.5	< 0.5	8.2	0.045...0.08
BZX85/C12	12	20	11.4...12.7	< 9	< 350	0.5	< 0.5	9.1	0.045...0.085
BZX85/C13	13	20	12.4...14.1	< 10	< 400	0.5	< 0.5	10	0.05...0.085
BZX85/C15	15	15	13.8...15.6	< 15	< 500	0.5	< 0.5	11	0.055...0.09
BZX85/C16	16	15	15.3...17.1	< 15	< 500	0.5	< 0.5	12	0.055...0.09
BZX85/C18	18	15	16.8...19.1	< 20	< 500	0.5	< 0.5	13	0.06...0.09
BZX85/C20	20	10	18.8...21.2	< 24	< 600	0.5	< 0.5	15	0.06...0.09
BZX85/C22	22	10	20.8...23.3	< 25	< 600	0.5	< 0.5	16	0.06...0.095
BZX85/C24	24	10	22.8...25.6	< 25	< 600	0.5	< 0.5	18	0.06...0.095
BZX85/C27	27	8	25.1...28.9	< 30	< 750	0.25	< 0.5	20	0.06...0.095
BZX85/C30	30	8	28...32	< 30	< 1000	0.25	< 0.5	22	0.06...0.095
BZX85/C33	33	8	31...35	< 35	< 1000	0.25	< 0.5	24	0.06...0.095
BZX85/C36	36	8	34...38	< 40	< 1000	0.25	< 0.5	27	0.06...0.095
BZX85/C39	39	6	37...41	< 50	< 1000	0.25	< 0.5	30	0.06...0.095
BZX85/C43	43	6	40...46	< 50	< 1000	0.25	< 0.5	33	0.06...0.095
BZX85/C47	47	4	44...50	< 90	< 1500	0.25	< 0.5	36	0.06...0.095
BZX85/C51	51	4	48...54	< 115	< 1500	0.25	< 0.5	39	0.06...0.095
BZX85/C56	56	4	52...60	< 120	< 2000	0.25	< 0.5	43	0.06...0.095
BZX85/C62	62	4	58...66	< 125	< 2000	0.25	< 0.5	47	0.06...0.095
BZX85/C68	68	4	64...72	< 130	< 2000	0.25	< 0.5	51	0.06...0.095
BZX85/C75	75	4	70...79	< 135	< 2000	0.25	< 0.5	56	0.06...0.095
BZX85/C82	82	2.7	77...87	< 200	< 3000	0.25	< 0.5	62	0.07...0.10
BZX85/C91	91	2.7	85...96	< 250	< 3000	0.25	< 0.5	68	0.07...0.10
BZX85/C100	100	2.7	94...106	< 350	< 3000	0.25	< 0.5	75	0.07...0.11
BZX85/C110	110	2.7	104...116	< 450	< 4000	0.25	< 0.5	82	0.07...0.11
BZX85/C120	120	2	114...127	< 550	< 4500	0.25	< 0.5	91	0.07...0.11
BZX85/C130	130	2	124...141	< 700	< 5000	0.25	< 0.5	100	0.07...0.11
BZX85/C150	150	2	138...156	< 1000	< 6000	0.25	< 0.5	110	0.07...0.11
BZX85/C160	160	1.5	153...171	< 1100	< 6500	0.25	< 0.5	120	0.07...0.11
BZX85/C180	180	1.5	168...191	< 1200	< 7000	0.25	< 0.5	130	0.07...0.11
BZX85/C200	200	1.5	188...212	< 1500	< 8000	0.25	< 0.5	150	0.07...0.11

[1] Tested with pulses t_p = 20 ms.

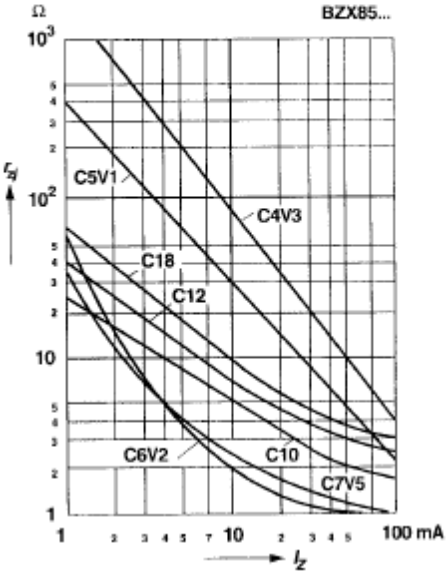

Breakdown characteristics
at Tj=constant (pulsed)
mA
BZX 85...
Tj=25°C
Iz
C3V9
C4V7
C5V6
C6V8
C8V2
C10
C12
C15
C18
C22
240
200
160
120
80
40
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24V
Vz


Breakdown characteristics
at Tj=constant (pulsed)
mA
BZX 85...
Iz
Tj=25°C
C27
C33
C39
C47
C68
C75
C91
50
40
30
20
10
0
20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95V
Vz

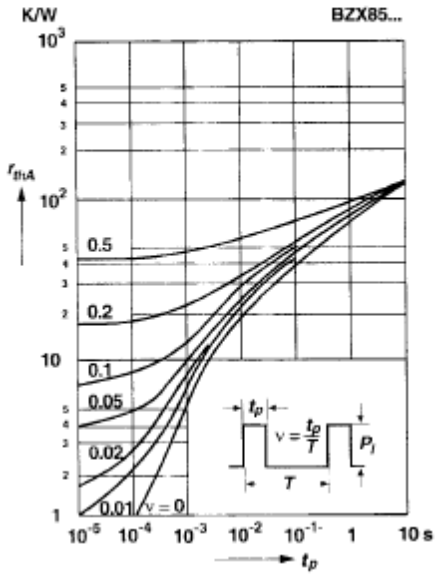
Admissible power dissipation
Versus ambient temperature
Valid provided that leads are kept at ambient
Temperature at a distance of 10 mm from case



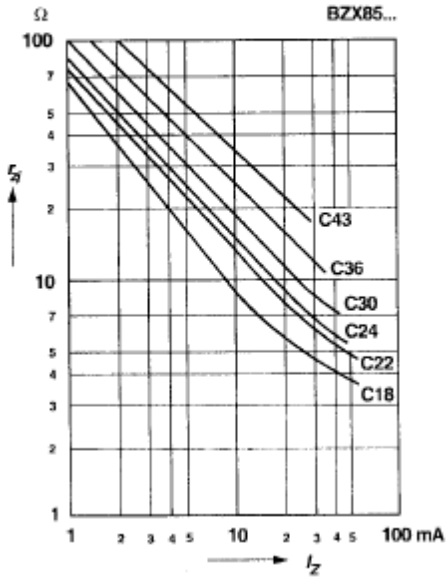
Dynamic resistance
versus Zener current



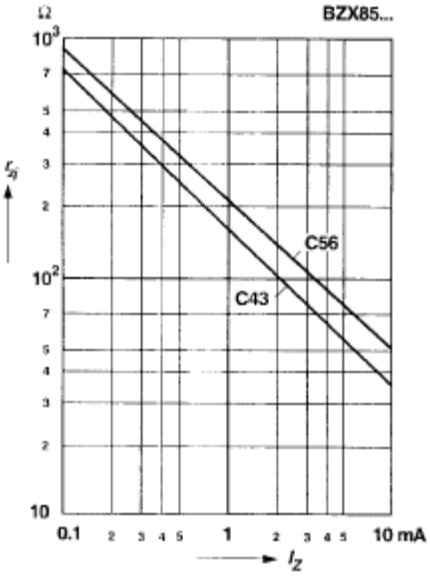
Pulse thermal resistance
versus pulse duration
Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case.



Dynamic resistance
versus Zener current



Dynamic resistance
versus Zener current



Thermal resistance
versus lead length