

BZT55 Series

SILICON EPITAXIAL PLANAR ZENER DIODES

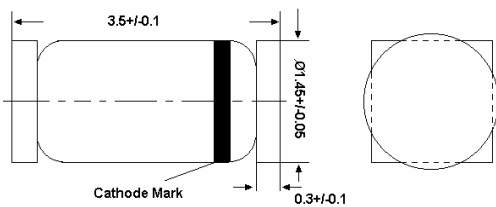
Features

- Very sharp reverse characteristic
- Low reverse current level
- Available with tighter tolerances
- Very high stability
- Low noise

Applications

- Voltage stabilization

LS-34



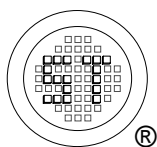
QuadromELF
Dimensions in mm

Absolute Maximum Ratings ($T_a = 25\text{ }^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Power Dissipation	P_{tot}	500	mW
Z-Current	I_Z	P_{tot} / V_Z	mA
Junction Temperature	T_j	175	$^{\circ}\text{C}$
Storage Temperature Range	T_s	- 65 to + 175	$^{\circ}\text{C}$

Characteristics at $T_a = 25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air On PC board 50 mm X 50 mm X 1.6 mm	R_{thJA}	500	K/W
Forward Voltage at $I_F = 100\text{ mA}$	V_F	1.5	V



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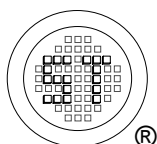
Dated : 12/01/2007

BZT55 Series

Type	Zener Voltage Range ¹⁾		Dynamic Resistance			Reverse Leakage Current			Temp Coefficient of Zener Voltage TKvz %/K
	I _{ZT} mA	for V _{ZT} V	r _{zT} Ω	r _{zK} at I _{ZK} Ω	I _{ZK} mA	T _a = 25 °C μA	T _a = 150 °C μA	I _R at V _R V	
BZT55C2V4	5	2.28...2.56	< 85	< 600	1	< 50	< 100	1	-0.09...-0.06
BZT55C2V7	5	2.5...2.9	< 85	< 600	1	< 10	< 50	1	-0.09...-0.06
BZT55C3V0	5	2.8...3.2	< 90	< 600	1	< 4	< 40	1	-0.08...-0.05
BZT55C3V3	5	3.1...3.5	< 90	< 600	1	< 2	< 40	1	-0.08...-0.05
BZT55C3V6	5	3.4...3.8	< 90	< 600	1	< 2	< 40	1	-0.08...-0.05
BZT55C3V9	5	3.7...4.1	< 90	< 600	1	< 2	< 40	1	-0.08...-0.05
BZT55C4V3	5	4.0...4.6	< 90	< 600	1	< 1	< 20	1	-0.06...-0.03
BZT55C4V7	5	4.4...5.0	< 80	< 600	1	< 0.5	< 10	1	-0.05...0.02
BZT55C5V1	5	4.8...5.4	< 60	< 550	1	< 0.1	< 2	1	-0.02...0.02
BZT55C5V6	5	5.2...6.0	< 40	< 450	1	< 0.1	< 2	1	-0.05...+0.05
BZT55C6V2	5	5.8...6.6	< 10	< 200	1	< 0.1	< 2	2	0.03...0.06
BZT55C6V8	5	6.4...7.2	< 8	< 150	1	< 0.1	< 2	3	0.03...0.07
BZT55C7V5	5	7.0...7.9	< 7	< 50	1	< 0.1	< 2	5	0.03...0.07
BZT55C8V2	5	7.7...8.7	< 7	< 50	1	< 0.1	< 2	6.2	0.03...0.08
BZT55C9V1 ²⁾	5	8.5...9.6	< 10	< 50	1	< 0.1	< 2	6.8	0.03...0.09
BZT55C10 ²⁾	5	9.4...10.6	< 15	< 70	1	< 0.1	< 2	7.5	0.03...0.10
BZT55C11 ²⁾	5	10.4...11.6	< 20	< 70	1	< 0.1	< 2	8.2	0.03...0.11
BZT55C12 ²⁾	5	11.4...12.7	< 20	< 90	1	< 0.1	< 2	9.1	0.03...0.11
BZT55C13 ²⁾	5	12.4...14.1	< 26	< 110	1	< 0.1	< 2	10	0.03...0.11
BZT55C15 ²⁾	5	13.8...15.6	< 30	< 110	1	< 0.1	< 2	11	0.03...0.11
BZT55C16 ²⁾	5	15.3...17.1	< 40	< 170	1	< 0.1	< 2	12	0.03...0.11
BZT55C18 ²⁾	5	16.8...19.1	< 50	< 170	1	< 0.1	< 2	13	0.03...0.11
BZT55C20 ²⁾	5	18.8...21.2	< 55	< 220	1	< 0.1	< 2	15	0.03...0.11
BZT55C22 ²⁾	5	20.8...23.3	< 55	< 220	1	< 0.1	< 2	16	0.04...0.12
BZT55C24 ²⁾	5	22.8...25.6	< 80	< 220	1	< 0.1	< 2	18	0.04...0.12
BZT55C27 ²⁾	5	25.1...28.9	< 80	< 220	1	< 0.1	< 2	20	0.04...0.12
BZT55C30 ²⁾	5	28...32	< 80	< 220	1	< 0.1	< 2	22	0.04...0.12
BZT55C33 ²⁾	5	31...35	< 80	< 220	1	< 0.1	< 2	24	0.04...0.12
BZT55C36 ²⁾	5	34...38	< 80	< 220	1	< 0.1	< 2	27	0.04...0.12
BZT55C39 ²⁾	2.5	37...41	< 90	< 500	0.5	< 0.1	< 5	30	0.04...0.12
BZT55C43 ²⁾	2.5	40...46	< 90	< 600	0.5	< 0.1	< 5	33	0.04...0.12
BZT55C47 ²⁾	2.5	44...50	< 110	< 700	0.5	< 0.1	< 5	36	0.04...0.12
BZT55C51 ²⁾	2.5	48...54	< 125	< 700	0.5	< 0.1	< 10	39	0.04...0.12
BZT55C56 ²⁾	2.5	52...60	< 135	< 1000	0.5	< 0.1	< 10	43	0.04...0.12
BZT55C62 ²⁾	2.5	58...66	< 150	< 1000	0.5	< 0.1	< 10	47	0.04...0.12
BZT55C68 ²⁾	2.5	64...72	< 200	< 1000	0.5	< 0.1	< 10	51	0.04...0.12
BZT55C75 ²⁾	2.5	70...79	< 250	< 1500	0.5	< 0.1	< 10	56	0.04...0.12

¹⁾ Tested with pulses t_p = 20 ms.

²⁾ Additional measurement of Voltage group 9V1 to 75 at 95% V_{Zmin} ≤ 35 nA



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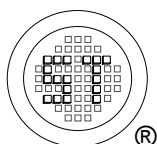
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Type	Zener Voltage Range ¹⁾		Dynamic Resistance			Reverse Leakage Current			Temp Coefficient of Zener Voltage TKvz %/K
	I _{ZT} mA	for V _{ZT} V	r _{zT} Ω	r _{zK} at I _{ZK} Ω	I _{ZK} mA	T _a = 25 °C μA	T _a = 150 °C μA	I _R at V _R V	
BZT55B2V4	5	2.35...2.45	< 85	< 600	1	< 50	< 100	1	-0.09...-0.06
BZT55B2V7	5	2.64...2.76	< 85	< 600	1	< 10	< 50	1	-0.09...-0.06
BZT55B3V0	5	2.94...3.06	< 90	< 600	1	< 4	< 40	1	-0.08...-0.05
BZT55B3V3	5	3.24...3.36	< 90	< 600	1	< 2	< 40	1	-0.08...-0.05
BZT55B3V6	5	3.52...3.68	< 90	< 600	1	< 2	< 40	1	-0.08...-0.05
BZT55B3V9	5	3.82...3.98	< 90	< 600	1	< 2	< 40	1	-0.08...-0.05
BZT55B4V3	5	4.22...4.38	< 90	< 600	1	< 1	< 20	1	-0.06...-0.03
BZT55B4V7	5	4.6...4.8	< 80	< 600	1	< 0.5	< 10	1	-0.05...0.02
BZT55B5V1	5	5.0...5.2	< 60	< 550	1	< 0.1	< 2	1	-0.02...0.02
BZT55B5V6	5	5.48...5.72	< 40	< 450	1	< 0.1	< 2	1	-0.05...+0.05
BZT55B6V2	5	6.08...6.32	< 10	< 200	1	< 0.1	< 2	2	0.03...0.06
BZT55B6V8	5	6.66...6.94	< 8	< 150	1	< 0.1	< 2	3	0.03...0.07
BZT55B7V5	5	7.35...7.65	< 7	< 50	1	< 0.1	< 2	5	0.03...0.07
BZT55B8V2	5	8.04...8.36	< 7	< 50	1	< 0.1	< 2	6.2	0.03...0.08
BZT55B9V1 ²⁾	5	8.92...9.28	< 10	< 50	1	< 0.1	< 2	6.8	0.03...0.09
BZT55B10 ²⁾	5	9.8...10.2	< 15	< 70	1	< 0.1	< 2	7.5	0.03...0.10
BZT55B11 ²⁾	5	10.78...11.22	< 20	< 70	1	< 0.1	< 2	8.2	0.03...0.11
BZT55B12 ²⁾	5	11.76...12.24	< 20	< 90	1	< 0.1	< 2	9.1	0.03...0.11
BZT55B13 ²⁾	5	12.74...13.26	< 26	< 110	1	< 0.1	< 2	10	0.03...0.11
BZT55B15 ²⁾	5	14.7...15.3	< 30	< 110	1	< 0.1	< 2	11	0.03...0.11
BZT55B16 ²⁾	5	15.7...16.3	< 40	< 170	1	< 0.1	< 2	12	0.03...0.11
BZT55B18 ²⁾	5	17.64...18.36	< 50	< 170	1	< 0.1	< 2	13	0.03...0.11
BZT55B20 ²⁾	5	19.6...20.4	< 55	< 220	1	< 0.1	< 2	15	0.03...0.11
BZT55B22 ²⁾	5	21.55...22.45	< 55	< 220	1	< 0.1	< 2	16	0.04...0.12
BZT55B24 ²⁾	5	23.5...24.5	< 80	< 220	1	< 0.1	< 2	18	0.04...0.12
BZT55B27 ²⁾	5	26.4...27.6	< 80	< 220	1	< 0.1	< 2	20	0.04...0.12
BZT55B30 ²⁾	5	29.4...30.6	< 80	< 220	1	< 0.1	< 2	22	0.04...0.12
BZT55B33 ²⁾	5	32.4...33.6	< 80	< 220	1	< 0.1	< 2	24	0.04...0.12
BZT55B36 ²⁾	5	35.3...36.7	< 80	< 220	1	< 0.1	< 2	27	0.04...0.12
BZT55B39 ²⁾	2.5	38.2...39.8	< 90	< 500	0.5	< 0.1	< 5	30	0.04...0.12
BZT55B43 ²⁾	2.5	42.1...43.9	< 90	< 600	0.5	< 0.1	< 5	33	0.04...0.12
BZT55B47 ²⁾	2.5	46.1...47.9	< 110	< 700	0.5	< 0.1	< 5	36	0.04...0.12
BZT55B51 ²⁾	2.5	50...52	< 125	< 700	0.5	< 0.1	< 10	39	0.04...0.12
BZT55B56 ²⁾	2.5	54.9...57.1	< 135	< 1000	0.5	< 0.1	< 10	43	0.04...0.12
BZT55B62 ²⁾	2.5	60.8...63.2	< 150	< 1000	0.5	< 0.1	< 10	47	0.04...0.12
BZT55B68 ²⁾	2.5	66.6...69.4	< 200	< 1000	0.5	< 0.1	< 10	51	0.04...0.12
BZT55B75 ²⁾	2.5	73.5...76.5	< 250	< 1500	0.5	< 0.1	< 10	56	0.04...0.12

¹⁾ Tested with pulses t_p = 20 ms.

²⁾ Additional measurement of Voltage group 9V1 to 75 at 95% V_{Zmin} ≤ 35 nA



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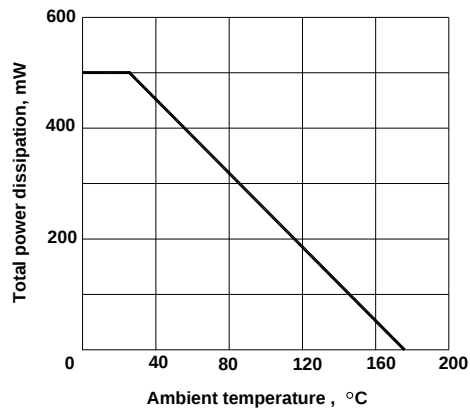


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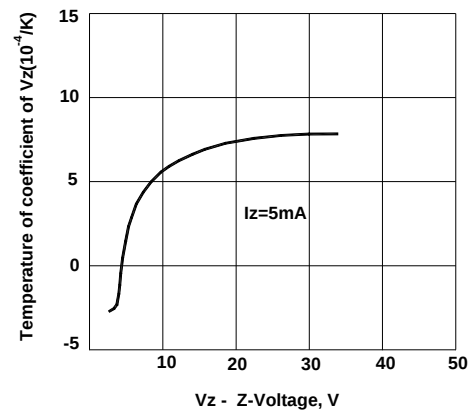
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BZT55 Series

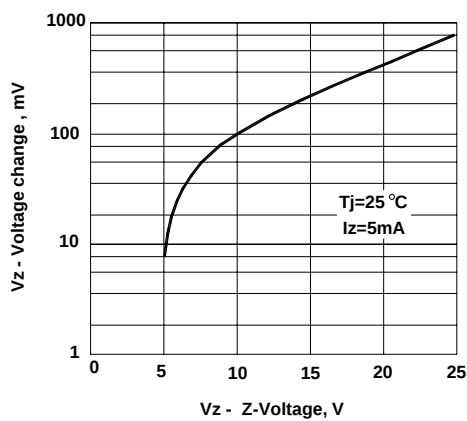
Total power dissipation vs.
Ambient temperature



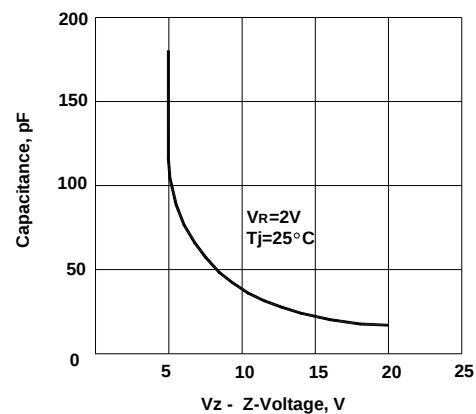
Temperature coefficient
of Vz vs. Z-Voltage



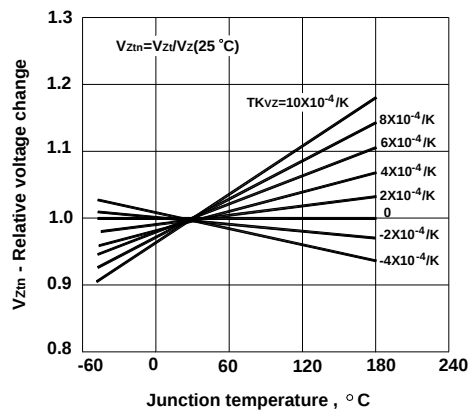
Typical change of working voltage
under operating conditions at Ta=25°C



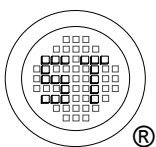
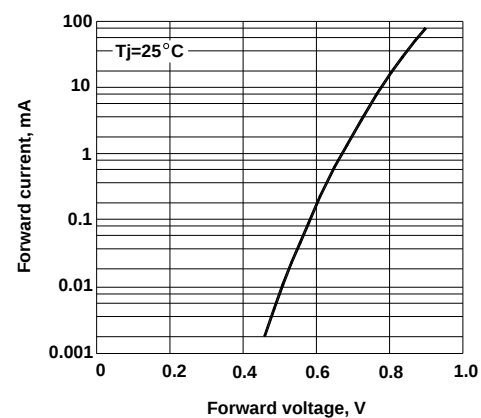
Capacitance vs. Z-Voltage



Typical change of working voltage
vs. Junction temperature



Forward current vs. Forward voltage



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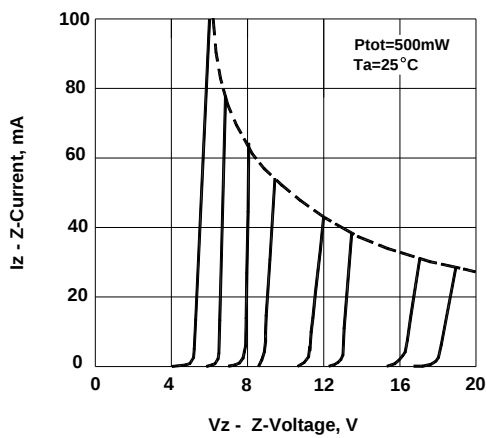


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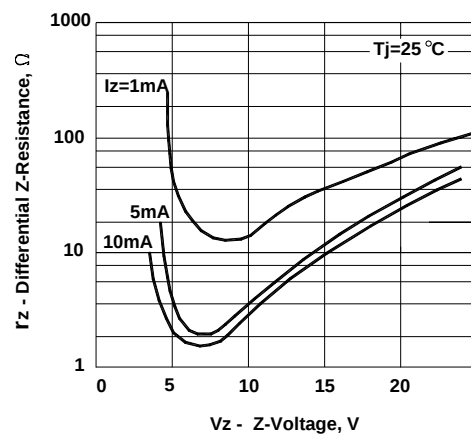
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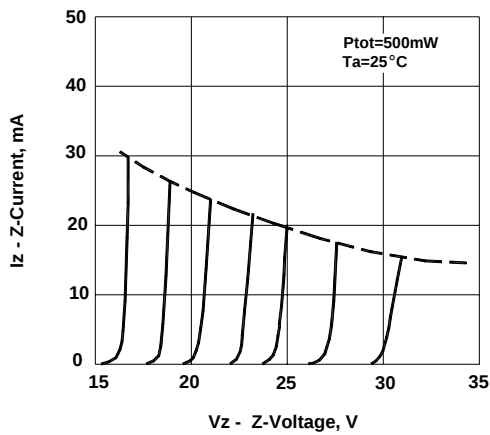
Z-Current vs. Z-Voltage



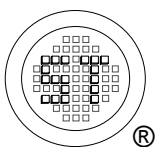
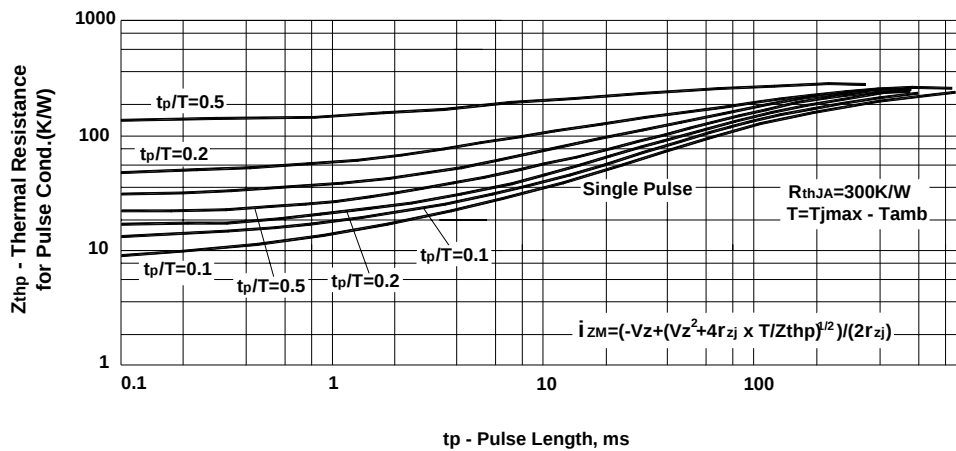
Differential Z-Resistance vs. Z-Voltage



Z-Current vs. Z-Voltage



Thermal Response



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