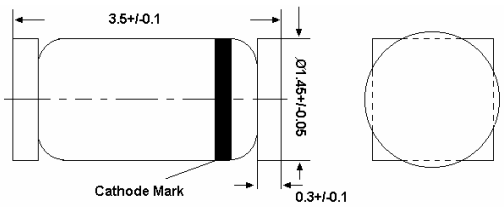
BZT55 Series

SILICON EPITAXIAL PLANAR ZENER DIODES

Features

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

LS-34



QuadroMELF
Dimensions in mm

Applications

- Voltage stabilization

Absolute Maximum Ratings (T_a = 25 °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	°C
Storage Temperature Range	T_S	- 65 to + 175	°C

Characteristics at T_a = 25 °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 mA	V_F	1.5	V

BZT55 Series

Type	Zener Voltage Range [1]		Dynamic Resistance			Reverse Leakage Current			Temp Coefficient of Zener Voltage
	I_{ZT} for	V_{ZT}	r_{zjT}	r_{zjK} at	I_{ZK}	T_a = 25 °C	T_a = 150 °C	I_R at V_R	TKvz
	mA	V	Ω	Ω	mA	µA	µA	V	%/K
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 tp = 20 ms.

[2] Additional measurement of Voltage group 9V1 to 75 at 95% Vzmin ≤ 35 nA

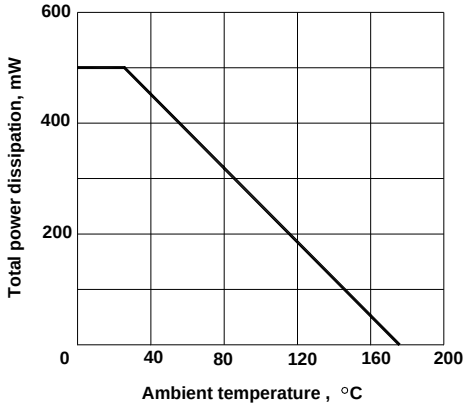
BZT55 Series

Type	Zener Voltage Range [1]		Dynamic Resistance			Reverse Leakage Current			Temp Coefficient of Zener Voltage
	I_{ZT} for	V_{ZT}	r_{zjT}	r_{zjK} at	I_{ZK}	T_a = 25 °C	T_a = 150 °C	I_R at V_R	TKvz
	mA	V	Ω	Ω	mA	µA	µA	V	%/K
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

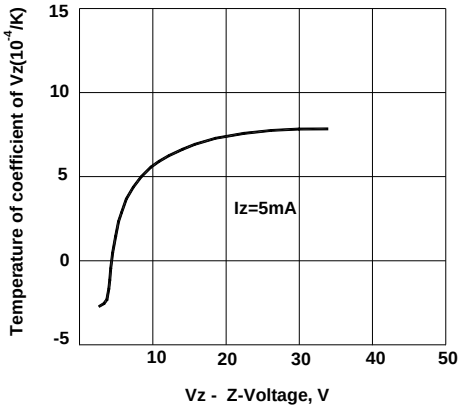
[1] Tested with pulses tp = 20 ms.

[2] Additional measurement of Voltage group 9V1 to 75 at 95% Vzmin ≤ 35 nA

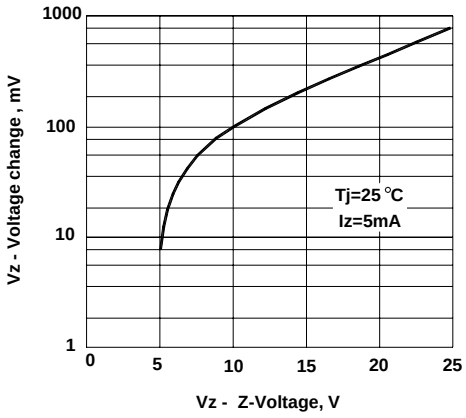
Total power dissipation vs. Ambient temperature



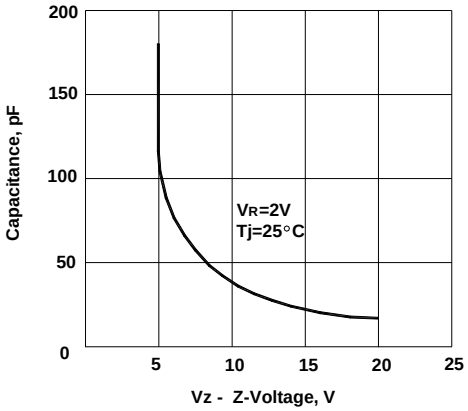
Temperature coefficient of Vz vs. Z-Voltage



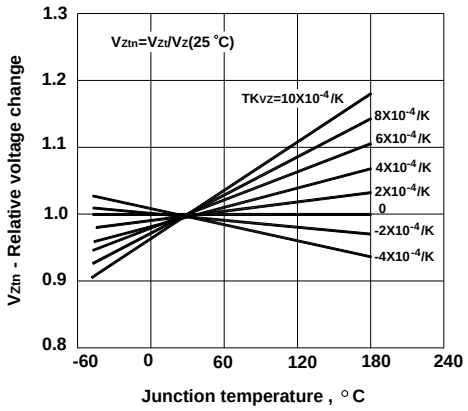
Typical change of working voltage under operating conditions at Ta=25°C



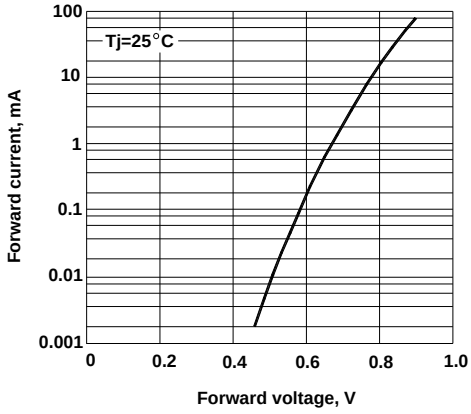
Capacitance vs. Z-Voltage



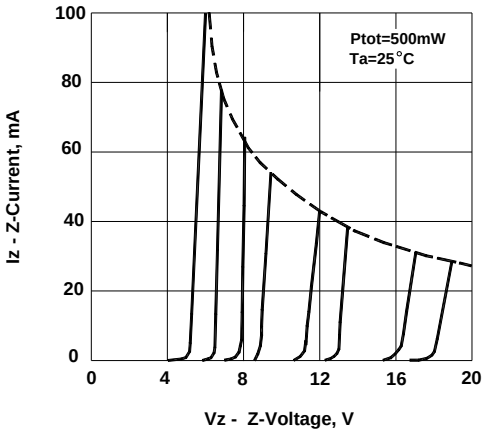
Typical change of working voltage vs. Junction temperature



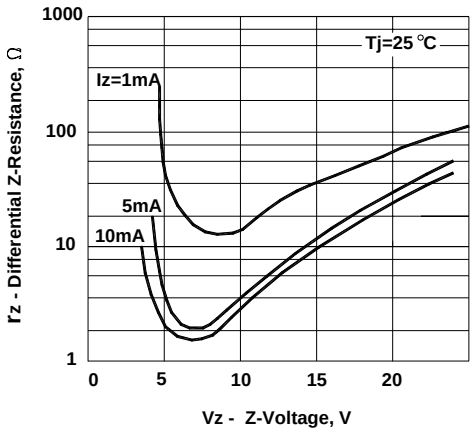
Forward current vs. Forward voltage



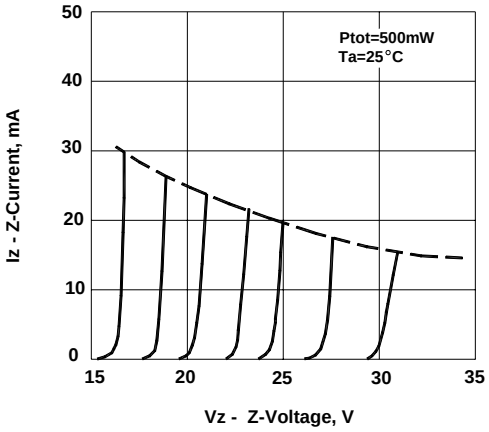
Z-Current vs. Z-Voltage



Differential Z-Resistance vs. Z-Voltage



Z-Current vs. Z-Voltage



Thermal Response