

BZX55C Series

Zener diode

Voltage Range
2.4 to 188 Volts

Features

1.High reliability

Applications

Voltage stabilization

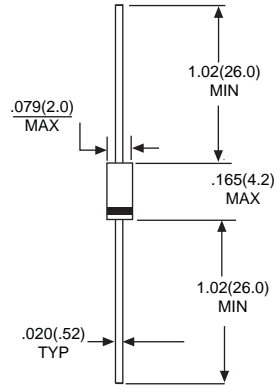
Construction

Silicon epitaxial planer

Absolute Maximum Ratings

$T_j=25^{\circ}\text{C}$

DO-35



Dimensions in inches and (millimeters)

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$I=4\text{mm } T_L=25^{\circ}\text{C}$		P_D	500	mW
Z-current			I_z	P_D/V_z	mA
Junction temperature			T_j	175	$^{\circ}\text{C}$
Storage temperature range			T_{stg}	-65~+175	$^{\circ}\text{C}$

Maximum Thermal Resistance

$T_j=25^{\circ}\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$I=4\text{mm } T_L=\text{constant}$	R_{thJA}	500	K/W

Electrcal Characteristics

$T_j=25^{\circ}\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=200\text{mA}$		V_F			1.5	V

BZX55C2V4 THRU BZX55C188V

RATING AND CHARACTERISTIC CURVES

500mW ZENER DIODES/DO-35

OPERATING AND STORAGE TEMPERATURE -55°C to +200°C

TYPE	Nominal Zener		Test Current I_{ZT}	Maximum Zener Impedance		I_{ZK}	Maximum Reverse Leakage Current		Maximum Surge Current	Maximum Regulation Current I_{ZM}
				$Z_{ZT} @ I_{ZT}$	$Z_{ZT} @ I_{ZK}$		I_R	@ V_R		
	Min	Max	mA	Ohms	Ohms	mA	μA	Volts	mA	mA
BZX55C2V4	2.28	2.56	5.0	85	600	1.0	50	1.0	-0.085	155
BZX55C2V7	2.50	2.90	5.0	85	600	1.0	10	1.0	-0.080	135
BZX55C3V0	2.80	3.20	5.0	85	600	1.0	4.0	1.0	-0.075	125
BZX55C3V3	3.10	3.50	5.0	85	600	1.0	2.0	1.0	-0.070	115
BZX55C3V6	3.40	3.80	5.0	85	600	1.0	2.0	1.0	-0.065	105
BZX55C3V9	3.70	4.10	5.0	85	600	1.0	2.0	1.0	-0.060	95
BZX55C4V3	4.00	4.60	5.0	75	600	1.0	1.0	1.0	± 0.055	90
BZX55C4V7	4.40	5.00	5.0	60	600	1.0	0.5	1.0	± 0.030	85
BZX55C5V1	4.80	5.40	5.0	35	550	1.0	0.1	1.0	± 0.030	80
BZX55C5V6	5.20	6.00	5.0	25	450	1.0	0.1	1.0	+0.038	70
BZX55C6V2	5.80	6.60	5.0	10	200	1.0	0.1	2.0	+0.045	64
BZX55C6V8	6.40	7.20	5.0	8	150	1.0	0.1	3.0	+0.050	58
BZX55C7V5	7.00	7.90	5.0	7	50	1.0	0.1	5.0	+0.058	53
BZX55C8V2	7.70	8.70	5.0	7	50	1.0	0.1	6.2	+0.062	74
BZX55C9V1	8.50	9.60	5.0	10	50	1.0	0.1	6.8	+0.068	43
BZX55C10	9.40	10.6	5.0	15	70	1.0	0.1	7.5	+0.075	40
BZX55C11	10.4	11.6	5.0	20	70	1.0	0.1	8.2	+0.076	36
BZX55C12	11.4	12.7	5.0	20	90	1.0	0.1	9.1	+0.077	32
BZX55C13	12.4	14.1	5.0	26	110	1.0	0.1	10	+0.079	29
BZX55C15	13.8	15.6	5.0	30	110	1.0	0.1	11	+0.082	27
BZX55C16	15.3	17.1	5.0	40	170	1.0	0.1	12	+0.083	24
BZX55C18	16.8	19.1	5.0	50	170	1.0	0.1	13	+0.085	21
BZX55C20	18.8	21.2	5.0	55	220	1.0	0.1	15	+0.086	20
BZX55C22	20.8	23.3	5.0	55	220	1.0	0.1	16	+0.087	18
BZX55C24	22.8	25.6	5.0	80	220	1.0	0.1	18	+0.088	16
BZX55C27	25.1	28.9	5.0	80	220	1.0	0.1	20	+0.090	14
BZX55C30	28.0	32.0	5.0	80	220	1.0	0.1	22	+0.091	13
BZX55C33	31.0	35.0	5.0	80	220	1.0	0.1	24	+0.092	12
BZX55C36	34.0	38.0	5.0	80	220	1.0	0.1	27	+0.093	11
BZX55C39	37.0	41.0	2.5	90	500	0.5	0.1	30	+0.094	10
BZX55C43	40.0	46.0	2.5	90	600	0.5	0.1	33	+0.095	9.2
BZX55C47	44.0	50.0	2.5	110	700	0.5	0.1	36	+0.095	8.5
BZX55C51	48.0	54.0	2.5	125	700	0.5	0.1	39	+0.096	7.8
BZX55C56	52.0	60.0	2.5	135	1000	0.5	0.1	43	+0.096	7.0
BZX55C62	58.0	66.0	2.5	150	1000	0.5	0.1	47	+0.096	6.4
BZX55C68	64.0	72.0	2.5	200	1000	0.5	0.1	51	+0.096	5.9
BZX55C75	70.0	80.0	2.5	250	1500	0.5	0.1	56	+0.096	5.3
BZX55C82	77.0	87.0	2.5	300	2000	0.5	0.1	62	+0.096	4.8
BZX55C91	85.0	96.0	1.0	450	5000	0.1	0.1	68	+0.096	4.4
BZX55C100	94.0	106	1.0	450	5000	0.1	0.1	75	+0.096	4.0
BZX55C110	104	116	1.0	600	5000	0.1	0.1	82	+0.096	3.6
BZX55C120	114	127	1.0	800	5000	0.1	0.1	91	+0.096	3.3
BZX55C130	124	141	1.0	1000	5000	0.1	0.1	100	+0.096	3.0
BZX55C150	138	156	1.0	1200	5000	0.1	0.1	110	+0.096	2.6
BZX55C160	153	171	1.0	1500	5000	0.1	0.1	120	+0.096	2.5
BZX55C180	168	191	1.0	1800	5000	0.1	0.1	130	+0.096	2.2
BZX55C188	188	212	1.0	2000	5000	0.1	0.1	150	+0.096	2.0

1) Tighter tolerances available request:

BZX55A...: 1% of V_{Znom}

BZ55B...: 2% of V_{Znom}

2) at $T_j = 150^\circ C$

BZX55C Series

Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise specified)

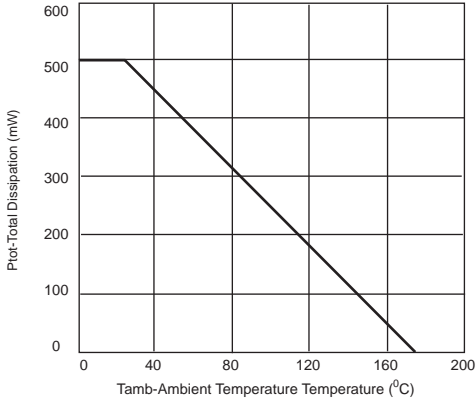


Figure 1. Total Power Dissipation vs. Ambient Temperature

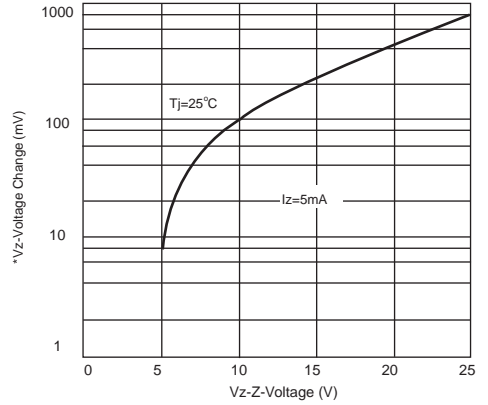


Figure 2. Typical Change of Working Voltage under Operating Conditions at $T_{\text{amb}}=25^{\circ}\text{C}$

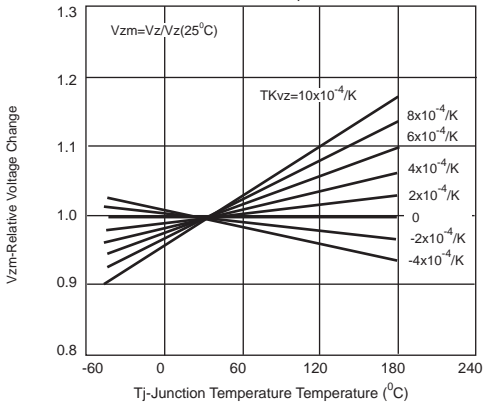


Figure 3. Typical of Working Voltage vs. Junction Temperature

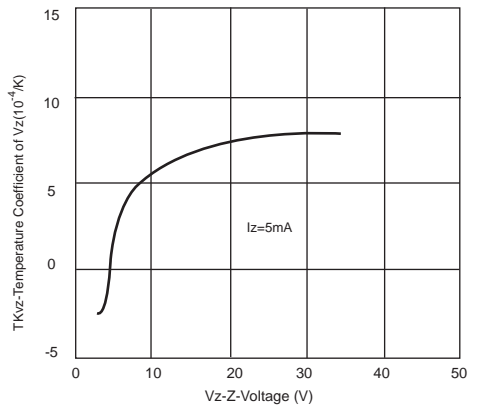


Figure 4. Temperature Coefficient of V_z vs. Z-Voltage

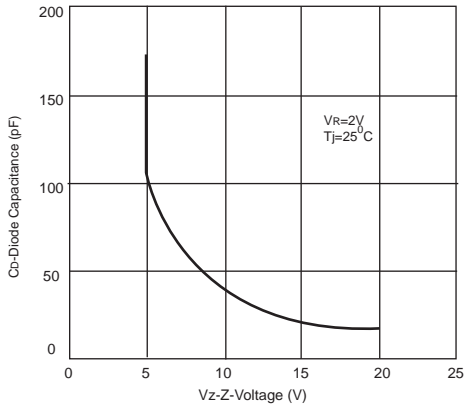


Figure 5. Diode Capacitance vs. Z-Voltage

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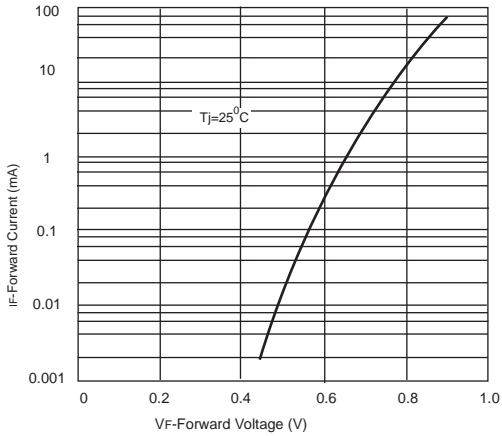


Figure 6. Forward Current vs. Forward Voltage

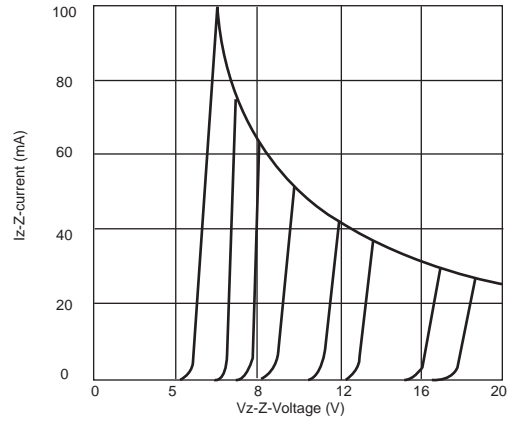


Figure 7. Z-Current vs. Z-Voltage

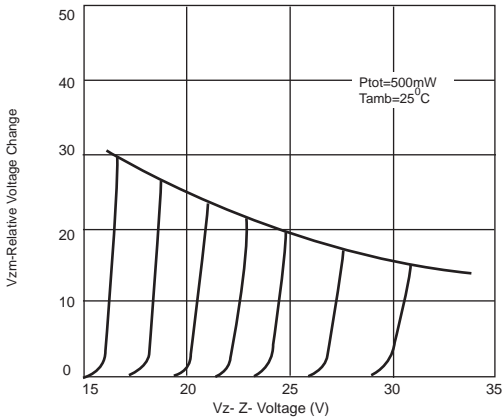


Figure 8. Z-Current vs. Z-Voltage

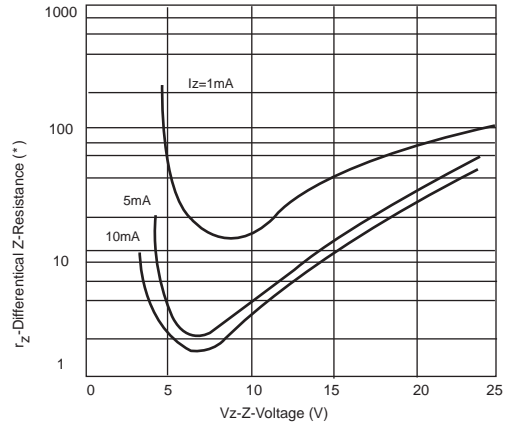


Figure 9. Differential Z-Resistance vs. Z-Voltage

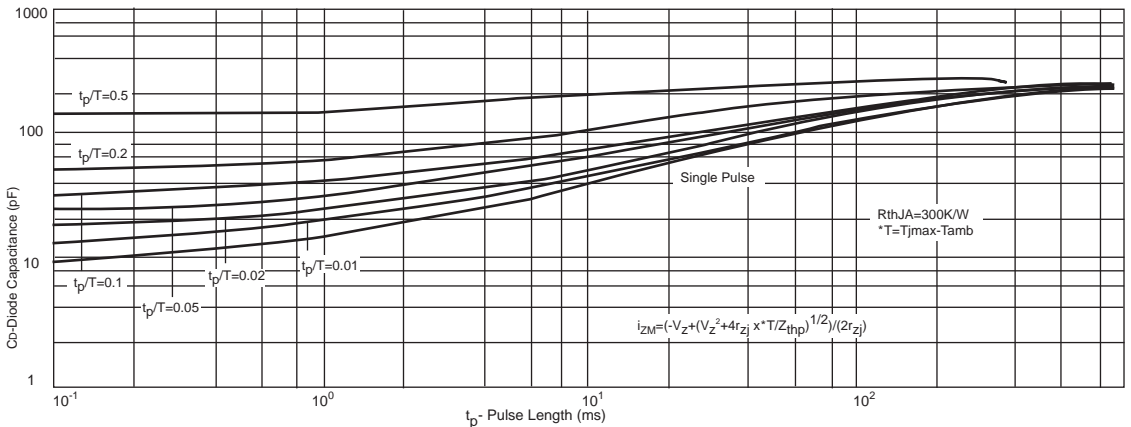


Figure 10. Thermal Response