

Zener Diodes, AEC-Q101

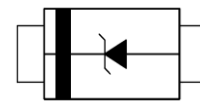
500mW SOD-123

BZT52B-A Series

MERITEK

FEATURE

- Zener Voltage Range: 2.4V to 43V
- Small Package Size for High Density Applications
- Application: Power Management Systems, Voltage Regulation
- AEC-Q101 Qualified

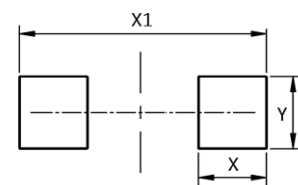
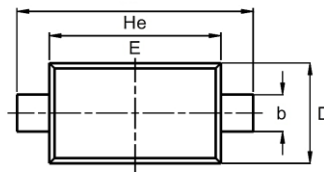
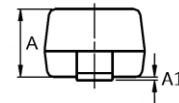
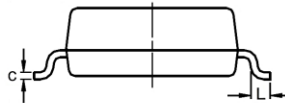


ABSOLUTE MAXIMUM RATINGS

Parameter, $T_A=25^\circ\text{C}$	Symbols	Value	Unit
Power Dissipation	P_D	500	mW
Forward Voltage at $I_F=10\text{mA}$	V_F	0.9	V
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	305	$^\circ\text{C/W}$
Thermal Resistance Junction to Case	$R_{\theta JC}$	200	$^\circ\text{C/W}$
Operating Junction and Storage Temperature	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

DIMENSIONS

Item	Min (mm)	Max (mm)
A	0.95	1.35
A1	-	-
b	0.45	0.65
C	-	0.20
D	1.40	1.80
E	2.50	2.80
He	3.55	3.85
L	-	-
X	0.91	
X1	4.18	
Y	1.22	



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ELECTRICAL CHARACTERISTICS

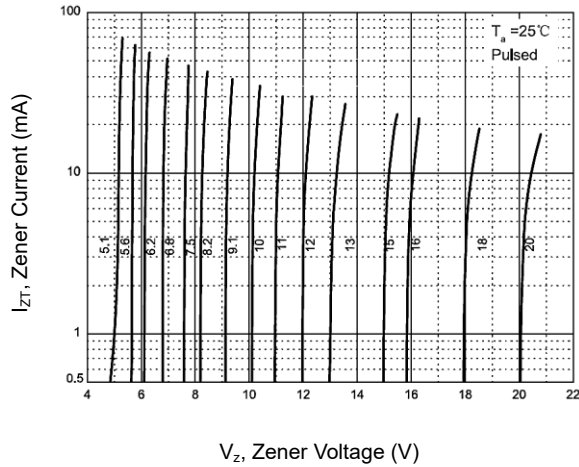
Part Number	Nominal Zener Voltage				Max Zener Impedance			Max Reverse Leakage Current		Typ Temperature Coefficient at I _{ZTC} (mV/°C)		Test Current I _{ZTC}
	V _Z (V)			I _{ZT}	Z _{ZT}	Z _{ZK}	I _{ZK}	I _R max	V _R			
	Nom	Min	Max	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	Min	Max	
BZT52B2V4-A	2.4	2.35	2.45	5	100	600	1.0	50	1.0	-3.5	0.0	5
BZT52B2V7-A	2.7	2.65	2.75	5	100	600	1.0	20	1.0	-3.5	0.0	5
BZT52B3V0-A	3.0	2.94	3.06	5	95	600	1.0	10	1.0	-3.5	0.0	5
BZT52B3V3-A	3.3	3.23	3.37	5	95	600	1.0	5	1.0	-3.5	0.0	5
BZT52B3V6-A	3.6	3.53	3.67	5	90	600	1.0	5	1.0	-3.5	0.0	5
BZT52B3V9-A	3.9	3.82	3.98	5	90	600	1.0	3	1.0	-3.5	0.0	5
BZT52B4V3-A	4.3	4.21	4.39	5	90	600	1.0	3	1.0	-3.5	0.0	5
BZT52B4V7-A	4.7	4.61	4.79	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52B5V1-A	5.1	5.00	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52B5V6-A	5.6	5.49	5.71	5	40	400	1.0	1	2.0	-2	2.5	5
BZT52B6V2-A	6.2	6.08	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52B6V8-A	6.8	6.66	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52B7V5-A	7.5	7.35	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52B8V2-A	8.2	8.04	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52B9V1-A	9.1	8.92	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52B10-A	10	9.80	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52B11-A	11	10.78	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52B12-A	12	11.76	12.24	5	25	150	1.0	0.1	8.0	6	10.0	5
BZT52B13-A	13	12.74	13.26	5	30	170	1.0	0.1	8.0	7	11.0	5
BZT52B15-A	15	14.70	15.30	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52B16-A	16	15.68	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52B18-A	18	17.64	18.36	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52B20-A	20	19.60	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52B22-A	22	21.56	22.44	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52B24-A	24	23.52	24.48	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52B27-A	27	26.46	27.54	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52B30-A	30	29.40	30.60	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52B33-A	33	32.34	33.66	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52B36-A	36	35.28	36.72	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52B39-A	39	38.22	39.78	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52B43-A	43	42.14	43.86	2	130	350	0.5	0.1	29.4	36.4	45.2	2

Note:

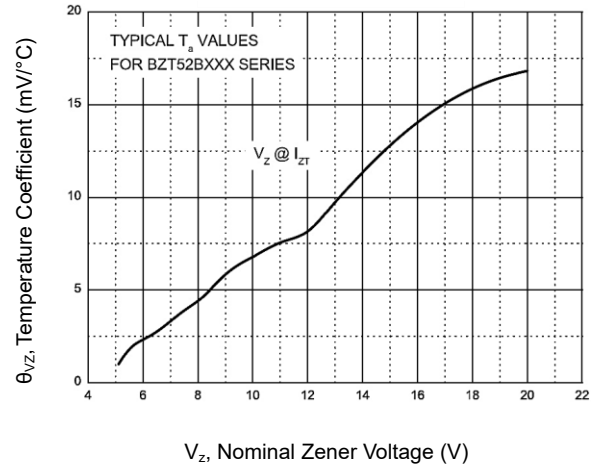
1. T_A = 25°C, unless otherwise noted
2. Device mounted on ceramic PCB: 7.6X9.4X0.87mm with pad areas 25mm²
3. Short duration test pulse used to minimize self-heating effect
4. f = 1KHz

CHARACTERISTIC CURVES

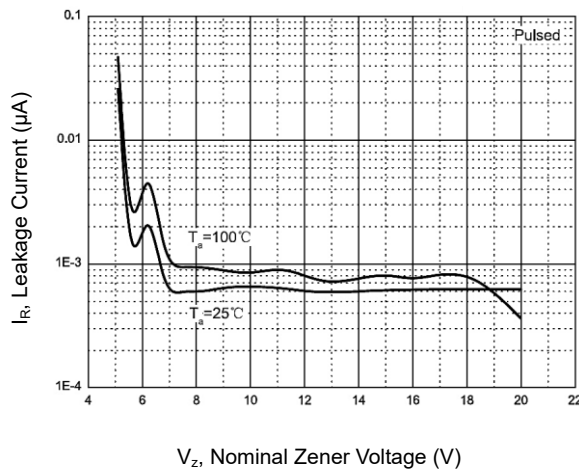
Zener Breakdown Characteristic



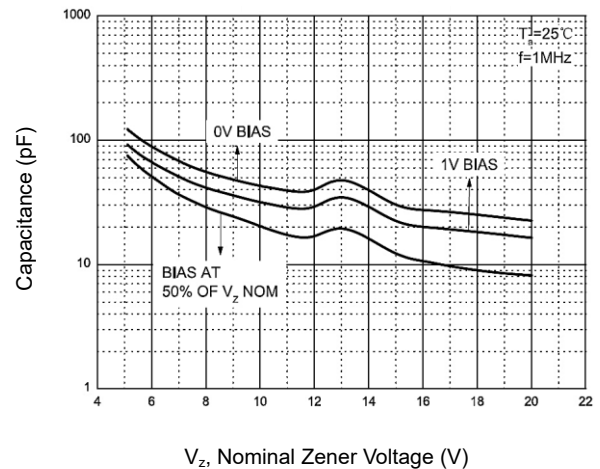
Temperature Coefficients



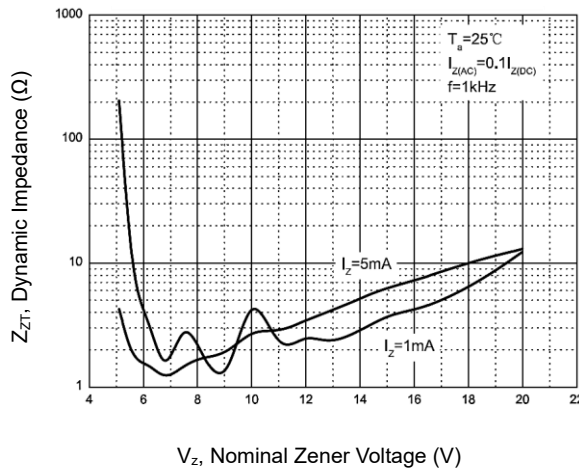
Typical Leakage Current



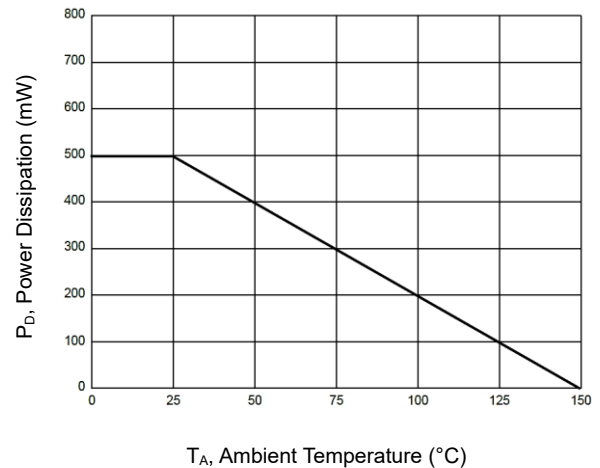
Typical Capacitance



Effect of Zener Voltage on Zener Impedance



Power Derating Curve



*Specifications subject to change without notice.