

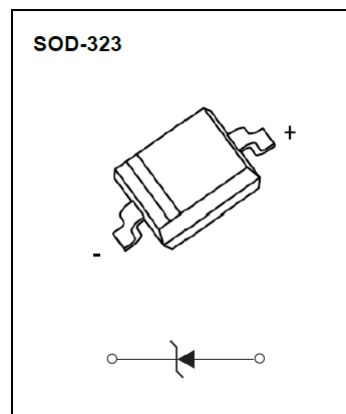


AD-BZT52B*S Series Plastic-Encapsulated Diode

AD-BZT52B*S series Zener diode

FEATURES

- Planar die construction
- General purpose, medium current
- AEC-Q101 qualified



MAXIMUM RATINGS ($T_j = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Forward voltage @ $I_F = 10\text{mA}$	$V_F^{1)}$	0.9	V
Power dissipation	$P_D^{2)}$	200	mW
Thermal resistance from junction to ambient	$R_{\theta JA}^{2)}$	625	$^{\circ}\text{C/W}$
Operating junction and storage temperature range	T_j, T_{stg}	-55 ~ 150	$^{\circ}\text{C}$

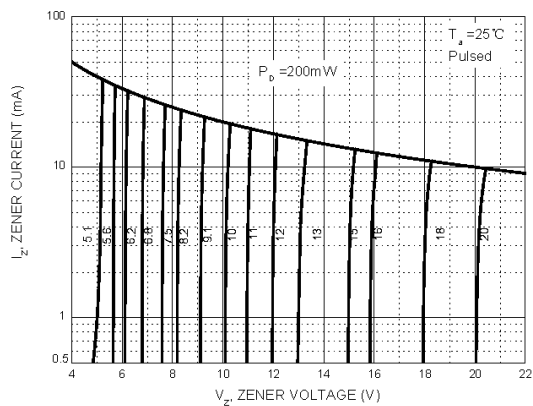
ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Type number	Marking	Zener voltage range ¹⁾				Maximum Zener impedance ³⁾			Maximum reverse current		Temperature coefficient of Zener voltage @ $I_{ZT} = 5\text{mA}$ (mV/°C)		Test current
		$V_Z @ I_{ZT}$ (V)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω)	$Z_{ZK} @ I_{ZK}$ (Ω)	I_{ZK} (mA)	I_R (μA)	V_R (V)			I_{ZTC} (mA)
		Min	Norm	Max								Min	Max
AD-BZT52B2V4S	$\bar{2}WX$	2.35	2.4	2.45	5	100	600	1.0	50	1.0	-3.5	0	5
AD-BZT52B2V7S	$\bar{2}W1$	2.65	2.7	2.75	5	100	600	1.0	20	1.0	-3.5	0	5
AD-BZT52B3V0S	$\bar{2}W2$	2.94	3.0	3.06	5	95	600	1.0	10	1.0	-3.5	0	5
AD-BZT52B3V3S	$\bar{2}W3$	3.23	3.3	3.37	5	95	600	1.0	5	1.0	-3.5	0	5
AD-BZT52B3V6S	$\bar{2}W4$	3.53	3.6	3.67	5	90	600	1.0	5	1.0	-3.5	0	5
AD-BZT52B3V9S	$\bar{2}W5$	3.82	3.9	3.98	5	90	600	1.0	3	1.0	-3.5	0	5
AD-BZT52B4V3S	$\bar{2}W6$	4.21	4.3	4.39	5	90	600	1.0	3	1.0	-3.5	0	5
AD-BZT52B4V7S	$\bar{2}W7$	4.61	4.7	4.79	5	80	500	1.0	3	2.0	-3.5	0.2	5
AD-BZT52B5V1S	$\bar{2}W8$	5.00	5.1	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
AD-BZT52B5V6S	$\bar{2}W9$	5.49	5.6	5.71	5	40	400	1.0	1	2.0	-2.0	2.5	5
AD-BZT52B6V2S	$\bar{2}WA$	6.08	6.2	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
AD-BZT52B6V8S	$\bar{2}WB$	6.66	6.8	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
AD-BZT52B7V5S	$\bar{2}WC$	7.35	7.5	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
AD-BZT52B8V2S	$\bar{2}WD$	8.04	8.2	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
AD-BZT52B9V1S	$\bar{2}WE$	8.92	9.1	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5
AD-BZT52B10S	$\bar{2}WF$	9.80	10	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
AD-BZT52B11S	$\bar{2}WG$	10.78	11	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
AD-BZT52B12S	$\bar{2}WH$	11.76	12	12.24	5	25	150	1.0	0.1	8.0	6.0	10.0	5
AD-BZT52B13S	$\bar{2}WI$	12.73	13	13.26	5	30	170	1.0	0.1	8.0	7.0	11.0	5
AD-BZT52B15S	$\bar{2}WJ$	14.70	15	15.30	5	30	200	1.0	0.1	10.5	9.2	13.0	5
AD-BZT52B16S	$\bar{2}WK$	15.68	16	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
AD-BZT52B18S	$\bar{2}WL$	17.64	18	18.36	5	45	225	1.0	0.1	12.6	12.4	16.0	5
AD-BZT52B20S	$\bar{2}WM$	19.60	20	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	5
AD-BZT52B22S	$\bar{2}WN$	21.56	22	22.44	5	55	250	1.0	0.1	15.4	16.4	20.0	5
AD-BZT52B24S	$\bar{2}WO$	23.52	24	24.48	5	70	250	1.0	0.1	16.8	18.4	22.0	5
AD-BZT52B27S	$\bar{2}WP$	26.46	27	27.54	2	80	300	0.5	0.1	18.9	21.4	25.3	2
AD-BZT52B30S	$\bar{2}WQ$	29.40	30	30.60	2	80	300	0.5	0.1	21.0	24.4	29.4	2
AD-BZT52B33S	$\bar{2}WR$	32.34	33	33.66	2	80	325	0.5	0.1	23.1	27.4	33.4	2
AD-BZT52B36S	$\bar{2}WS$	35.28	36	36.72	2	90	350	0.5	0.1	25.2	30.4	37.4	2
AD-BZT52B39S	$\bar{2}WT$	38.22	39	39.78	2	130	350	0.5	0.1	27.3	33.4	41.2	2

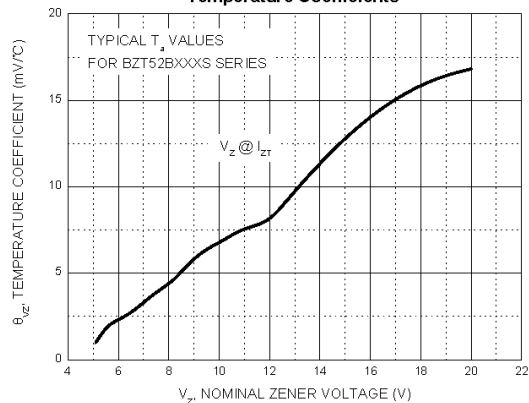
1) Short duration test pulse used to minimize self-heating effect.

2) Measured with the device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad area of 25mm².3) $f = 1\text{kHz}$.

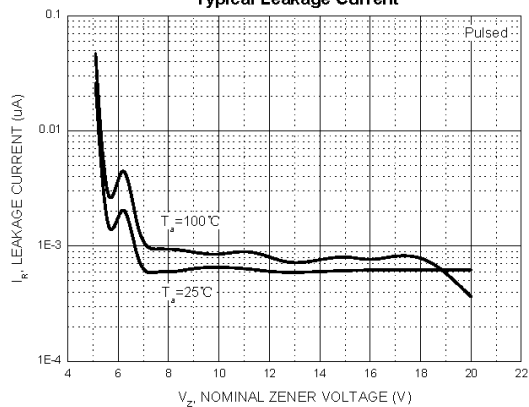
TYPICAL CHARACTERISTICS

Zener Characteristics (V_z 5.1V to 20 V)

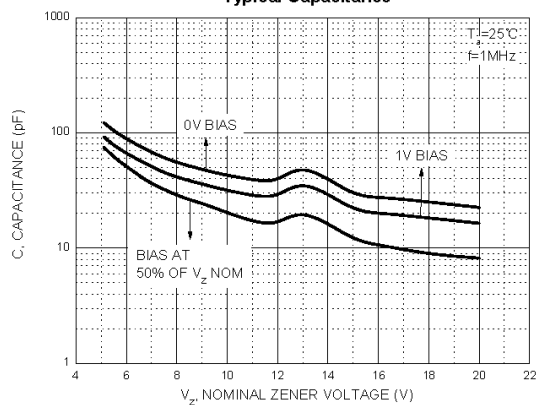
Temperature Coefficients



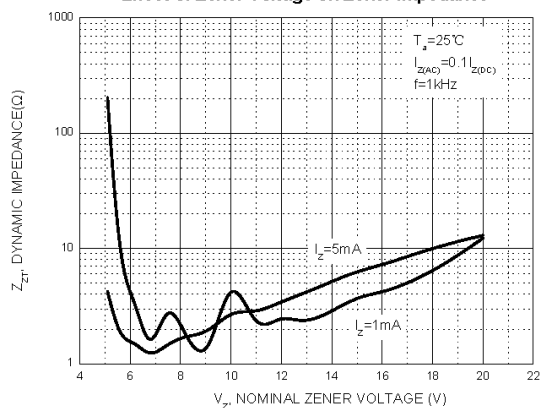
Typical Leakage Current



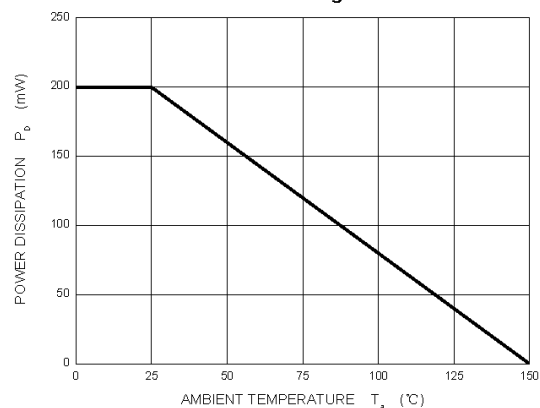
Typical Capacitance



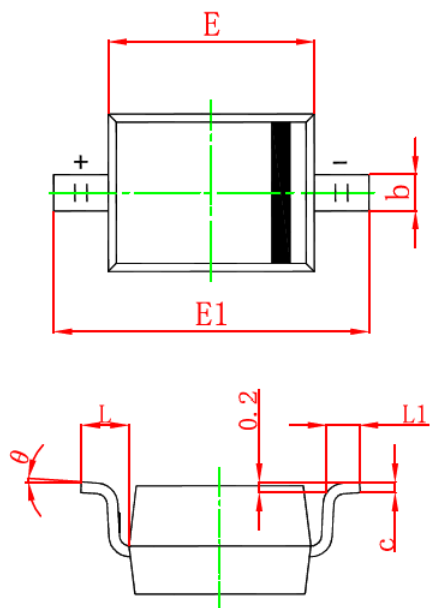
Effect of Zener Voltage on Zener Impedance



Power Derating Curve

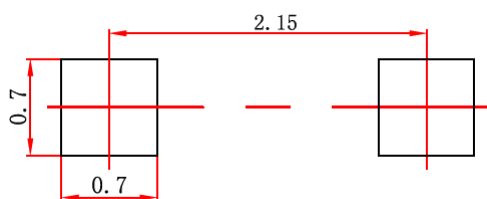


SOD-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A		1.100		0.043
A1	0.000	0.100	0.000	0.004
A2	0.800	1.000	0.031	0.039
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.500	2.750	0.098	0.108
L	0.475 REF		0.019 REF	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

SOD-323 SUGGESTED PAD LAYOUT

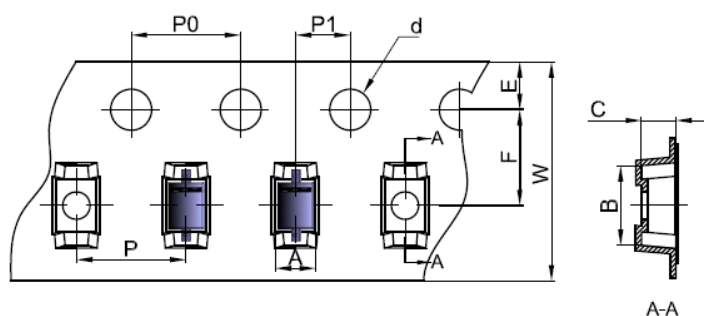


Note:

1. Controlling dimension in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purpose only.

SOD-323 TAPE AND REEL

SOD-323 Embossed Carrier Tape



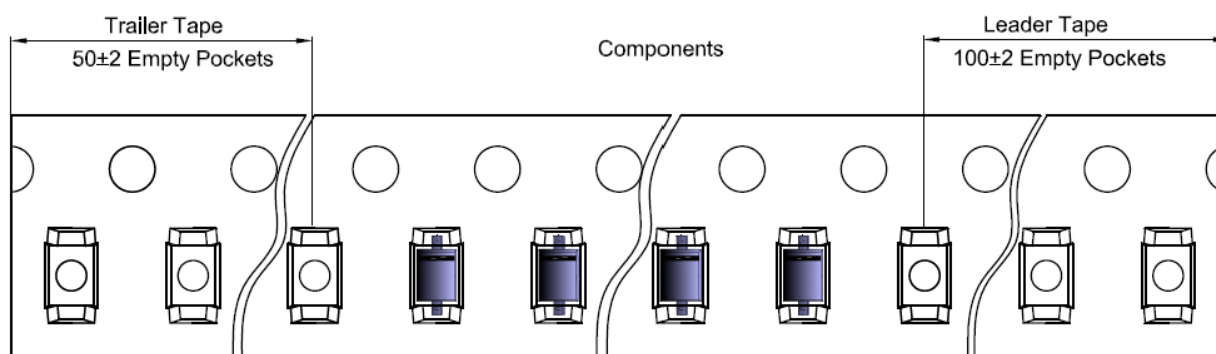
Packaging Description:

SOD-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

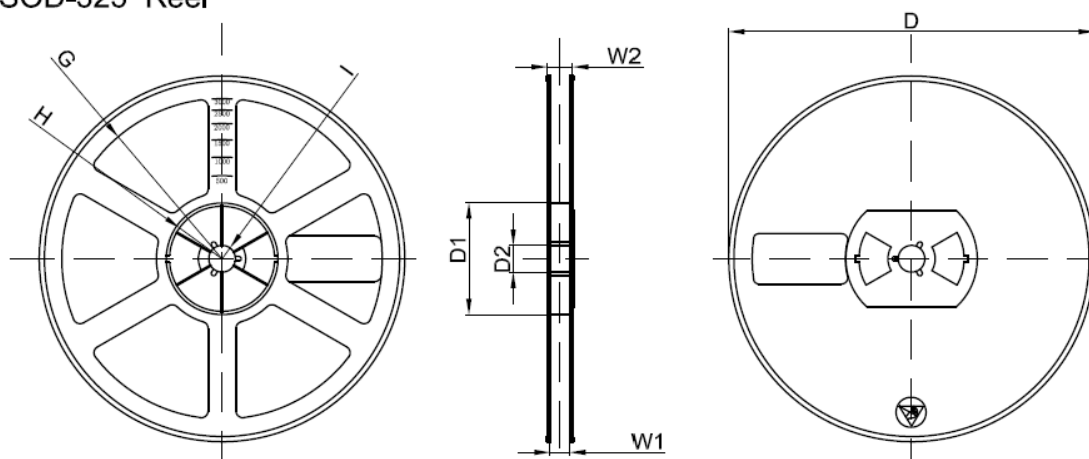
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.48	3.3	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOD-323 Tape Leader and Trailer



SOD-323 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	

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