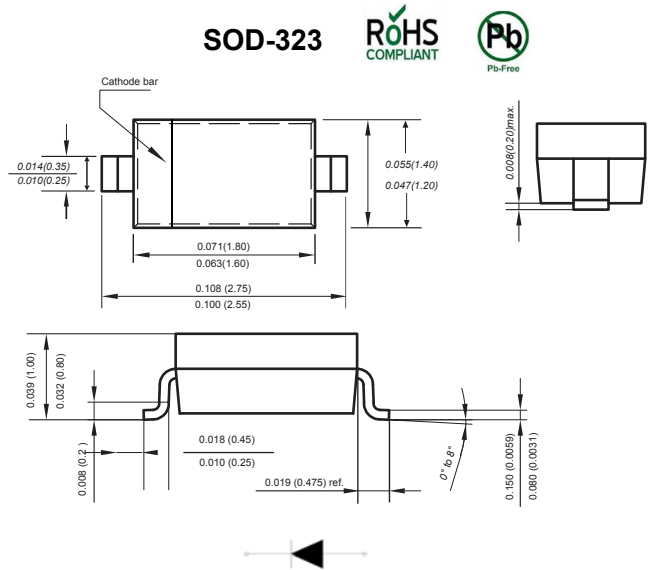


Features

1. Planar die construction.
2. Total power dissipation: Max.300mW.
3. zener reverse voltage range 2.0V to 75V.
4. General purpose, medium current .
5. Small plastic package suitable for surface mounted design.
6. Tolerance approximately±5%



Mechanical Data

Terminals : Solderable per MIL-STD-750,Method 2026

Polarity : Polarity symbol marking on body

Mounting Position : Any

Weight : 0.00019 ounce, 0.00548 grams

Maximum Ratings(Ta=25°C unless otherwise specified)

Characteristic	Symbol	Value	Unit
Forward Voltage at $I_F = 10\text{mA}$ (Note 2)	V_F	0.9	V
Power Dissipation(Note 1)	P_d	2€0	mW
Typical thermal resistance from junction to ambient(Note 1)	$R_{\theta JA}$	1 17	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

Notes: 1. Thermal resistance from junction to ambient at P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper areas pads.

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

3. $f = \sqrt{\text{KHz}}$



BZT52C2V0S ~ BZT52C51S

Small Signal Zener Diodes

Electrical Characteristics (@T_A=25°C unless otherwise specified) Table 1

Type Number	Device Marking Code	Zener Voltage Range (Note 3)			Maximum Zener Impedance (Note 4)				Max Reverse Leakage Current		Temp. Coefficient of Zener Voltage @ I _{ZT} (mV/°C)	
		V _Z @ I _{ZT}			Z _{ZT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R	@ V _R	Min	Max
		Nom (V)	Min (V)	Max (V)	()	(mA)	()	(mA)	(μA)	(V)		
BZT52C2V0S	WY	2.0	1.91	2.09	85	5.0	600	1.0	150	1.0	-9	-4
BZT52C2V4S	WX	2.4	2.2	2.6	85	5.0	600	1.0	100	1.0	-9	-4
BZT52C2V7S	W1	2.7	2.5	2.9	83	5.0	500	1.0	75	1.0	-9	-4
BZT52C3V0S	W2	3.0	2.8	3.2	95	5.0	500	1.0	50	1.0	-9	-3
BZT52C3V3S	W3	3.3	3.1	3.5	95	5.0	500	1.0	25	1.0	-8	-3
BZT52C3V6S	W4	3.6	3.4	3.8	95	5.0	500	1.0	15	1.0	-8	-3
BZT52C3V9S	W5	3.9	3.7	4.1	95	5.0	500	1.0	10	1.0	-7	-3
BZT52C4V3S	W6	4.3	4.0	4.6	95	5.0	500	1.0	5.0	1.0	-6	-1
BZT52C4V7S	W7	4.7	4.4	5.0	78	5.0	500	1.0	5.0	1.0	-5	+2
BZT52C5V1S	W8	5.1	4.8	5.4	60	5.0	480	1.0	0.1	0.8	-3	+4
BZT52C5V6S	W9	5.6	5.2	6.0	40	5.0	400	1.0	0.1	1.0	-2	+6
BZT52C6V2S	WA	6.2	5.8	6.6	10	5.0	200	1.0	0.1	2.0	-1	+7
BZT52C6V8S	WB	6.8	6.4	7.2	8	5.0	150	1.0	0.1	3.0	+2	+7
BZT52C7V5S	WC	7.5	7.0	7.9	7	5.0	50	1.0	0.1	5.0	+3	+7
BZT52C8V2S	WD	8.2	7.7	8.7	7	5.0	50	1.0	0.1	6.0	+4	+7
BZT52C9V1S	WE	9.1	8.5	9.6	10	5.0	50	1.0	0.1	7.0	+5	+8
BZT52C10S	WF	10	9.4	10.6	15	5.0	70	1.0	0.1	7.5	+5	+8
BZT52C11S	WG	11	10.4	11.6	20	5.0	70	1.0	0.1	8.5	+5	+9
BZT52C12S	WH	12	11.4	12.7	20	5.0	90	1.0	0.1	9.0	+6	+9
BZT52C13S	WI	13	12.4	14.1	25	5.0	110	1.0	0.1	10	+7	+9
BZT52C15S	WJ	15	13.8	15.6	30	5.0	110	1.0	0.1	11	+7	+9
BZT52C16S	WK	16	15.3	17.1	40	5.0	170	1.0	0.1	12	+8	+9.5
BZT52C18S	WL	18	16.8	19.1	50	5.0	170	1.0	0.1	14	+8	+9.5
BZT52C20S	WM	20	18.8	21.2	50	5.0	220	1.0	0.1	15	+8	+10
BZT52C22S	WN	22	20.8	23.3	55	5.0	220	1.0	0.1	17	+8	+10
BZT52C24S	WO	24	22.8	25.6	80	5.0	220	1.0	0.1	18	+8	+10
BZT52C27S	WP	27	25.1	28.9	80	5.0	250	1.0	0.1	20	+8	+10
BZT52C30S	WQ	30	28.0	32.0	80	5.0	250	1.0	0.1	22.5	+8	+10
BZT52C33S	WR	33	31.0	35.0	80	5.0	250	1.0	0.1	25	+8	+10
BZT52C36S	WS	36	34.0	38.0	90	5.0	250	1.0	0.1	27	+8	+10
BZT52C39S	WT	39	37.0	41.0	90	5.0	300	1.0	0.1	29	+10	+12
BZT52C43S	WU	43	40.0	46.0	100	5.0	700	1.0	0.1	32	+10	+12
BZT52C47S	WV	47	44.0	50.0	100	5.0	750	1.0	0.1	35	+10	+12
BZT52C51S	WW	51	48.0	54.0	100	5.0	750	1.0	0.1	38	+10	+12

- Note: 1. Type numbers listed have standard tolerance on the nominal zener voltage of ±5%.
 2. TW: Marking code for Taiwan plant. CN: Marking code for China plant.
 3. Measured with pulses t_p = 5ms.
 4. f = 1KHz

Typical Characteristics

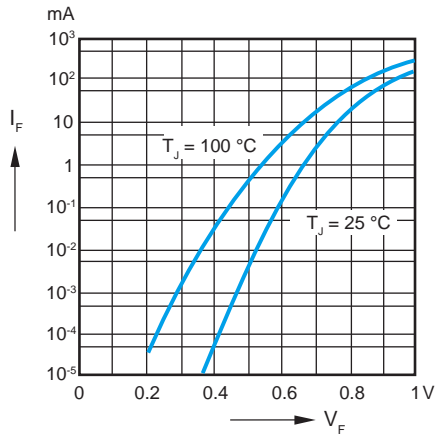


Fig. 1 - Forward characteristics

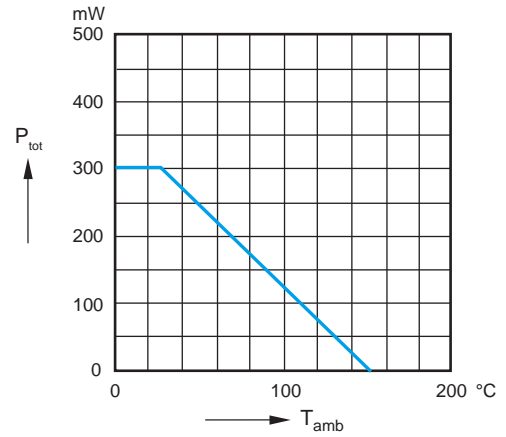


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

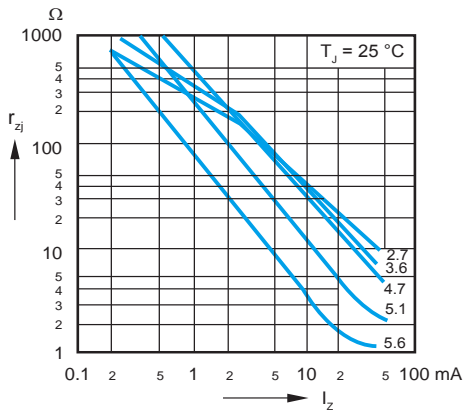


Fig. 3 - Dynamic Resistance vs. Zener Current

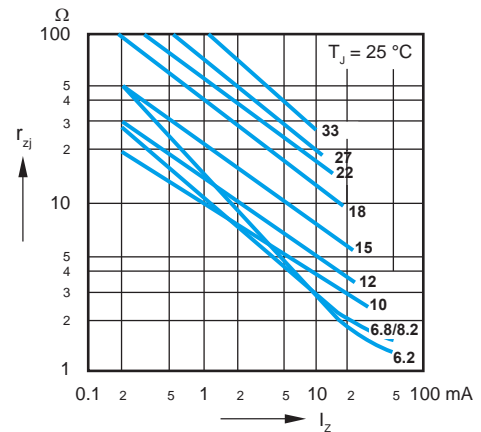


Fig. 4 - Dynamic Resistance vs. Zener Current

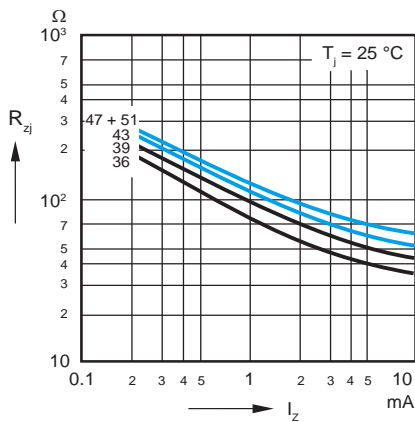


Fig. 5 - Dynamic Resistance vs. Zener Current

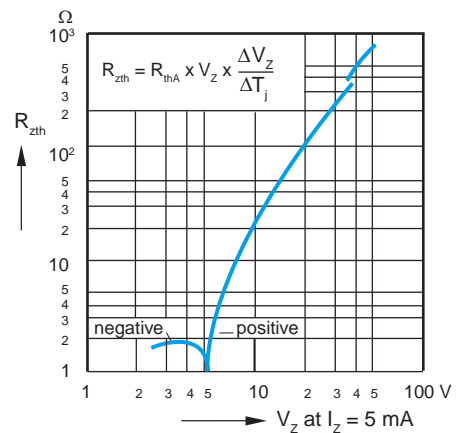


Fig. 6 - Thermal Differential Resistance vs. Zener Voltage

Typical Characteristics

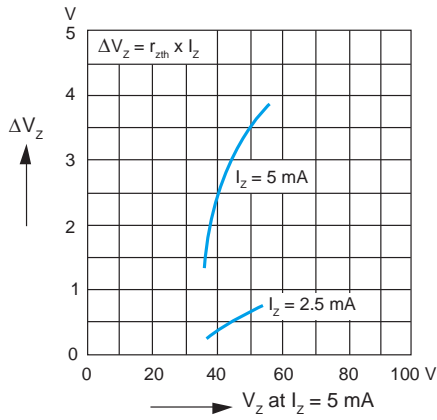


Fig. 13 - Change of Zener Voltage from Turn-on up to the Point of Thermal Equilibrium vs. Zener Voltage

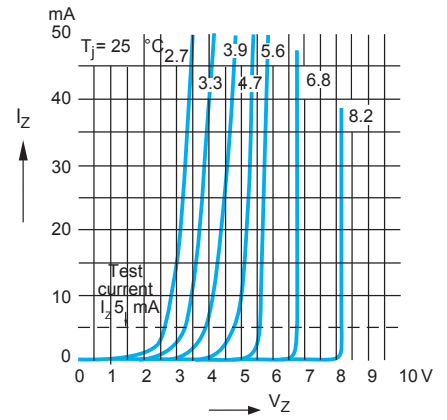


Fig. 14 - Breakdown Characteristics

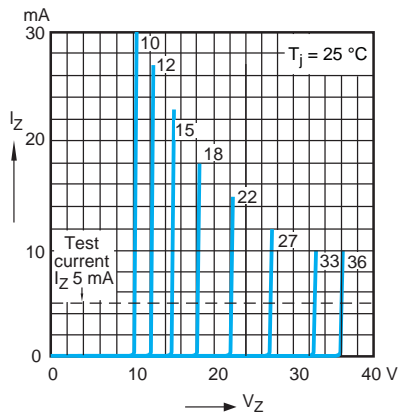


Fig. 15 - Breakdown Characteristics

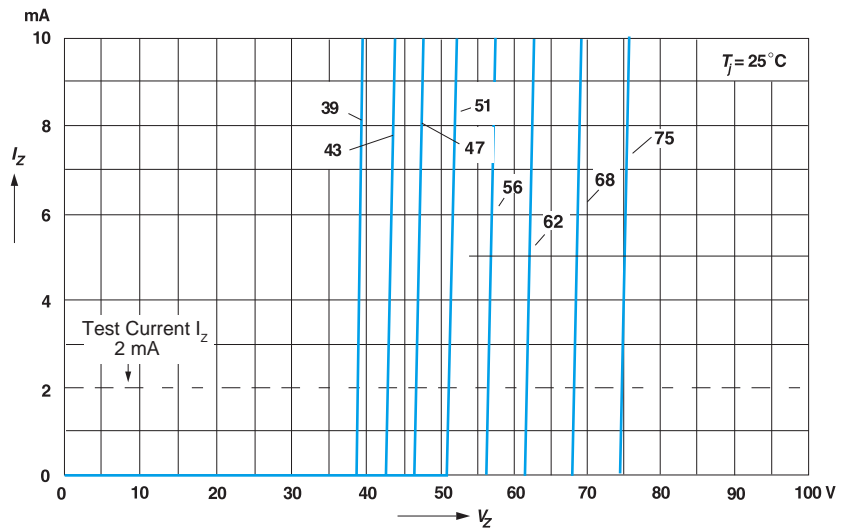
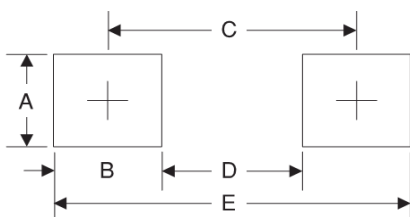


Fig. 16 - Breakdown Characteristics

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	0.7	0.028
B	0.7	0.028
C	2.15	0.085
D	1.8	0.071
E	2.85	0.112