BZT52B2V4~BZT52B75 Series

SILICON PLANAR ZENER DIODES

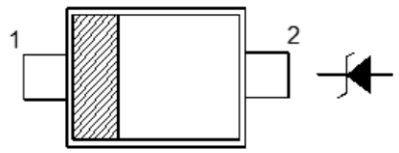
General description

General purpose Zener diode in an small SOD-123F flat-lead Surface-Mounted plastic package.

Approximately ± 2% tolerance range with nominal working voltage from 2.4V to 75V

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Top View
Simplified outline SOD-123F and symbol

Features

- AEC-Q101 Qualified
- Total power dissipation: 500 mW (max.)
- Working voltage range nominal 2.4 V to 75 V
- Zener voltage tolerance ± 2%
- Package designed for optimal automated board assembly
- Small package size for high density applications
- Halogen and Antimony Free(HAF), RoHS compliant

Applications

- General regulation functions

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Power Dissipation T_L = 75℃ [1]	P_{tot}	500	mW
Operating Junction Temperature Range	T_j	- 55 to + 150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

Characteristics at T_a = 25 ◦C

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient [2]	$R_{\theta JA}$	340	℃/W
Thermal Resistance Junction to Lead [1]	$R_{\theta JL}$	150	℃/W

[1] FR−4 PCB = 89 * 38 mm.

[2] Mounted on an FR-4 PCB 38 * 38 * 1.6 mm with single-sided Cu pad areas 25mm²(>70 µm thick).

Characteristics at T_a = 25℃ (V_F = 0.9 V Max. at I_F = 10 mA) **Table 1**

Type	Marking Code	Zener Voltage Range [1]				Dynamic Resistance		Reverse Current	
		V_{ZT}			at I_{ZT}	Z_{ZT}	at I_{ZT}	I_R	at V_R
		Nom. (V)	Min. (V)	Max. (V)	(mA)	Max. (Ω)	(mA)	Max. (μA)	(V)
BZT52B2V4	5Y1	2.4	2.35	2.45	5	100	5	120	1
BZT52B2V7	5Z1	2.7	2.65	2.75	5	110	5	120	1
BZT52B3V0	6A1	3	2.94	3.06	5	120	5	50	1
BZT52B3V3	6B1	3.3	3.23	3.37	5	130	5	20	1
BZT52B3V6	6C1	3.6	3.53	3.67	5	130	5	10	1
BZT52B3V9	6D1	3.9	3.82	3.98	5	130	5	5	1
BZT52B4V3	6E1	4.3	4.21	4.39	5	130	5	5	1
BZT52B4V7	6F1	4.7	4.61	4.79	5	130	5	2	1
BZT52B5V1	6G1	5.1	5	5.2	5	130	5	2	1.5
BZT52B5V6	6H1	5.6	5.49	5.71	5	80	5	1	2.5
BZT52B6V2	6J1	6.2	6.08	6.32	5	50	5	1	3
BZT52B6V8	6K1	6.8	6.66	6.94	5	30	5	0.5	3.5
BZT52B7V5	6L1	7.5	7.35	7.65	5	30	5	0.5	4
BZT52B8V2	6M1	8.2	8.04	8.36	5	30	5	0.5	5
BZT52B9V1	6N1	9.1	8.92	9.28	5	30	5	0.5	6
BZT52B10	6P1	10	9.8	10.2	5	30	5	0.1	7
BZT52B11	6Q1	11	10.8	11.2	5	30	5	0.1	8
BZT52B12	6R1	12	11.8	12.2	5	35	5	0.1	9
BZT52B13	6S1	13	12.7	13.3	5	35	5	0.1	10
BZT52B15	6T1	15	14.7	15.3	5	40	5	0.1	11
BZT52B16	6U1	16	15.7	16.3	5	40	5	0.1	12
BZT52B18	6W1	18	17.6	18.4	5	45	5	0.1	13
BZT52B20	6X1	20	19.6	20.4	5	50	5	0.1	15
BZT52B22	6Y1	22	21.6	22.4	5	55	5	0.1	17
BZT52B24	6Z1	24	23.5	24.5	5	60	5	0.1	19
BZT52B27	7A1	27	26.5	27.5	5	70	2	0.1	21
BZT52B30	7B1	30	29.4	30.6	5	80	2	0.1	23
BZT52B33	7C1	33	32.3	33.7	5	80	2	0.1	25
BZT52B36	7D1	36	35.3	36.7	5	90	2	0.1	27
BZT52B39	7E1	39	38.2	39.8	2.5	100	2	2	30
BZT52B43	7F1	43	42.1	43.9	2.5	130	2	2	33
BZT52B47	7G1	47	46.1	47.9	2.5	150	2	2	36
BZT52B51	7H1	51	50	52	2.5	180	2	1	39
BZT52B56	7J1	56	54.9	57.1	2.5	180	2	1	43
BZT52B62	7K1	62	60.8	63.2	2.5	200	2	0.2	47
BZT52B68	7L1	68	66.6	69.4	2.5	250	2	0.2	52
BZT52B75	7M1	75	73.5	76.5	2.5	300	2	0.2	57

[1] V_Z is tested with pulses (20 ms).

Electrical Characteristics Curves

Fig 1. Zener Characteristics Curve

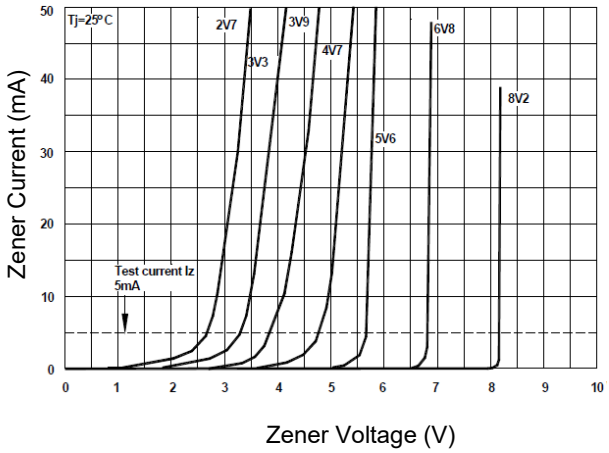


Fig 2. Zener Characteristics Curve

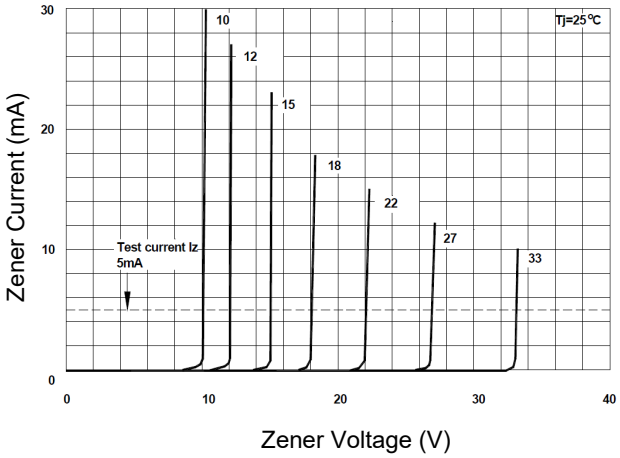
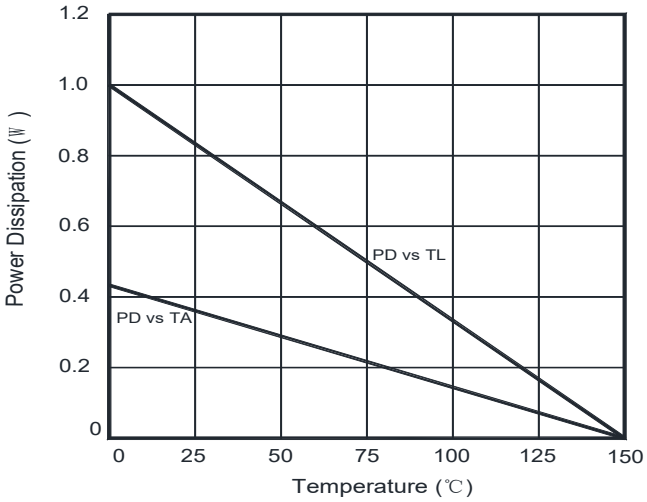
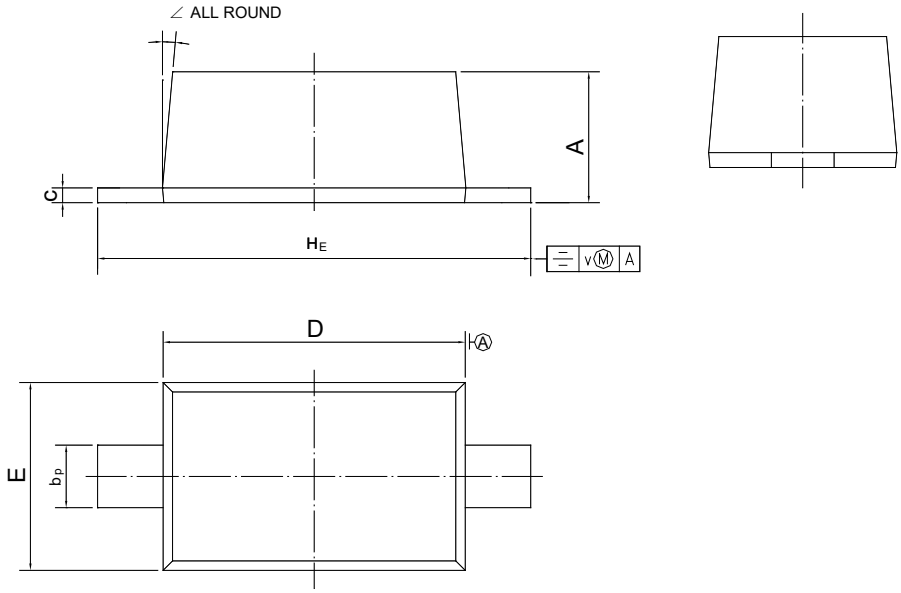


Fig 3. Power Derating Curve



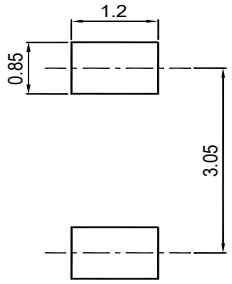
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads **SOD-123F**



UNIT	A	b_p	c	D	E	H_E	v	∠
mm	1.15 1.05	0.6 0.5	0.135 0.100	2.7 2.6	1.65 1.55	3.85 3.55	0.2	5°

Recommended Soldering Footprint

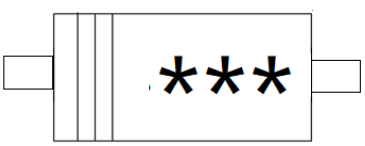


Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	(inch)	mm	(inch)	
SOD-123F	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

"***" = Part No (See table 1 of Marking Code)

"III" = Cathode line

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