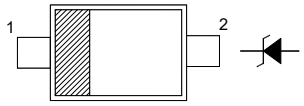
MM1ZB Series-HAF

Silicon Planar Zener Diodes

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Top View
Simplified outline SOD-123 and symbol

Features

- Power Dissipation: 500 mW
- Zener Voltage Tolerance: ± 2%
- Halogen and Antimony Free(HAF), RoHS compliant

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Power Dissipation T_L = 75℃ [1]	P_D	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 25mm^2(>70 μm thick).

Dated: 05/08/2024 Rev: 02

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_{znom}	V_{ZT}	at I_{ZT}	Z_{ZT}	at I_{ZT}	I_R	at V_R
		(V)	(V)	(mA)	Max. (Ω)	(mA)	Max. (μA)	(V)
MM1Z2B4	5Y1	2.4	2.352…2.448	5	100	5	120	1
MM1Z2B7	5Z1	2.7	2.646…2.754	5	110	5	120	1
MM1Z3B0	6A1	3.0	2.94…3.06	5	120	5	50	1
MM1Z3B3	6B1	3.3	3.234…3.366	5	130	5	20	1
MM1Z3B6	6C1	3.6	3.528…3.672	5	130	5	10	1
MM1Z3B9	6D1	3.9	3.822…3.978	5	130	5	5	1
MM1Z4B3	6E1	4.3	4.214…4.386	5	130	5	5	1
MM1Z4B7	6F1	4.7	4.606…4.794	5	130	5	2	1
MM1Z5B1	6G1	5.1	4.998…5.202	5	130	5	2	1.5
MM1Z5B6	6H1	5.6	5.488…5.712	5	80	5	1	2.5
MM1Z6B2	6J1	6.2	6.076…6.324	5	50	5	1	3
MM1Z6B8	6K1	6.8	6.664…6.936	5	30	5	0.5	3.5
MM1Z7B5	6L1	7.5	7.35…7.65	5	30	5	0.5	4
MM1Z8B2	6M1	8.2	8.036…8.364	5	30	5	0.5	5
MM1Z9B1	6N1	9.1	8.918…9.282	5	30	5	0.5	6
MM1ZB10	6P1	10	9.8…10.2	5	30	5	0.1	7
MM1ZB11	6Q1	11	10.78…11.22	5	30	5	0.1	8
MM1ZB12	6R1	12	11.76…12.24	5	35	5	0.1	9
MM1ZB13	6S1	13	12.74…13.26	5	35	5	0.1	10
MM1ZB15	6T1	15	14.7…15.3	5	40	5	0.1	11
MM1ZB16	6U1	16	15.68…16.32	5	40	5	0.1	12
MM1ZB18	6W1	18	17.64…18.36	5	45	5	0.1	13
MM1ZB20	6X1	20	19.6…20.4	5	50	5	0.1	15
MM1ZB22	6Y1	22	21.56…22.44	5	55	5	0.1	17
MM1ZB24	6Z1	24	23.52…24.48	5	60	5	0.1	19
MM1ZB27	7A1	27	26.46…27.54	5	70	2	0.1	21
MM1ZB30	7B1	30	29.4…30.6	5	80	2	0.1	23
MM1ZB33	7C1	33	32.34…33.66	5	80	2	0.1	25
MM1ZB36	7D1	36	35.28…36.72	5	90	2	0.1	27
MM1ZB39	7E1	39	38.22…39.78	2.5	100	2	2	30
MM1ZB43	7F1	43	42.14…43.86	2.5	130	2	2	33
MM1ZB47	7G1	47	46.06…47.94	2.5	150	2	2	36
MM1ZB51	7H1	51	49.98…52.02	2.5	180	2	1	39
MM1ZB56	7J1	56	54.88…57.12	2.5	180	2	1	43
MM1ZB62	7K1	62	60.76…63.24	2.5	200	2	0.2	47
MM1ZB68	7L1	68	66.64…69.36	2.5	250	2	0.2	52
MM1ZB75	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

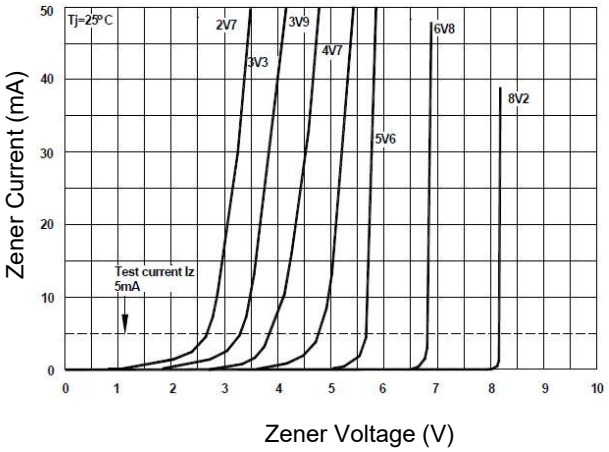


Fig 2. Zener Characteristics Curve

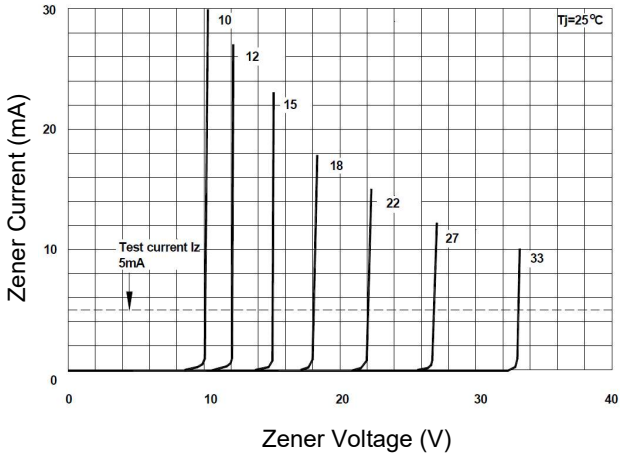
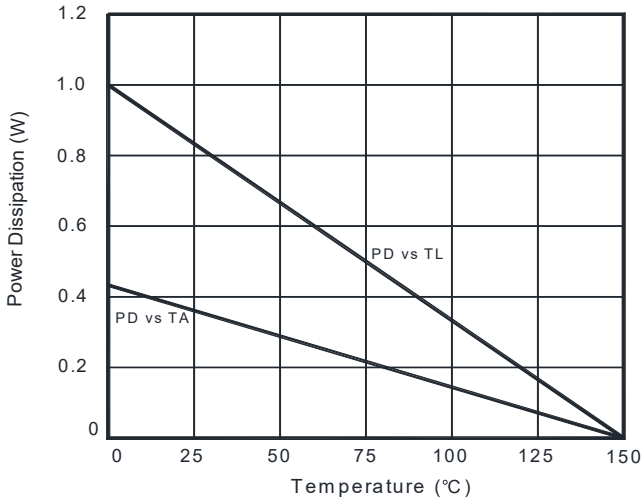
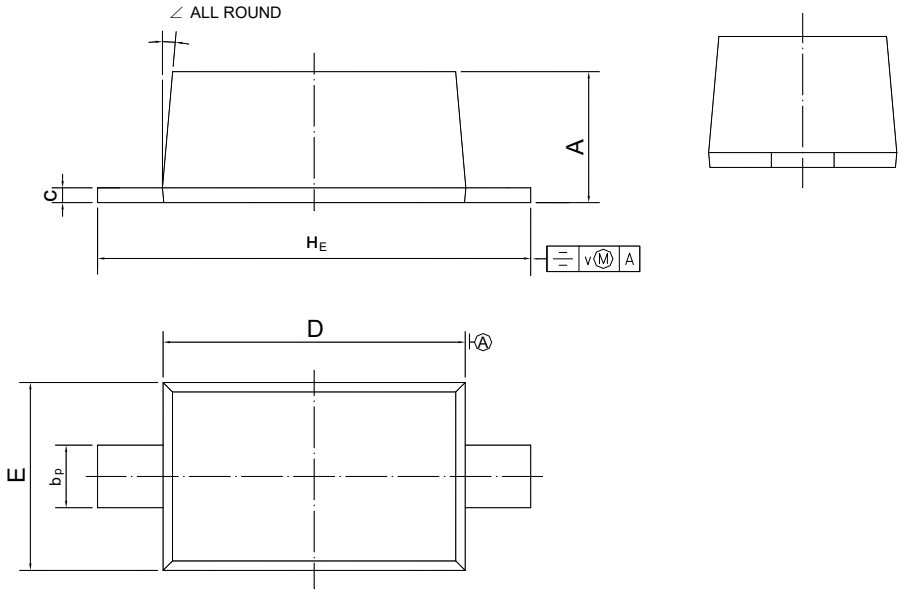


Fig 3. Power Derating Curve



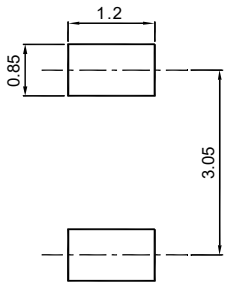
PACKAGE OUTLINE

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



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-123	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
" • "= HAF (Halogen and Antimony Free(HAF)
Font type: Arial



Disclaimer: Our company reserve the right to make modifications, enhancements, improvements, corrections or other changes to improve product design, functions and reliability, anytime without notice. Semtech Electronics Limited makes no warranties, representations or warranties regarding the suitability of its products for any particular purpose, and does not accept any liability arising from the application or use of any product or circuit such as: Apply to medical, military, aircraft, space or life support equipment and expressly waive any and all liability, including but not limited to special, consequential or collateral damage.

Dated: 05/08/2024 Rev: 02