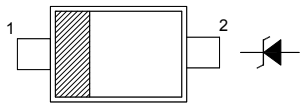
MM1Z2B4~MM1ZB75

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%

Absolute Maximum Ratings (T_a = 25 °C)

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

Characteristics at T_a = 25 °C

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient [2)]	$R_{\theta JA}$	340	°C/W
Thermal Resistance Junction to Lead [2)]	$R_{\theta JL}$	150	°C/W
Forward Voltage at I_F = 10 mA	V_F	0.9	V

[1)] FR−4 PCB = 89 * 38 mm.

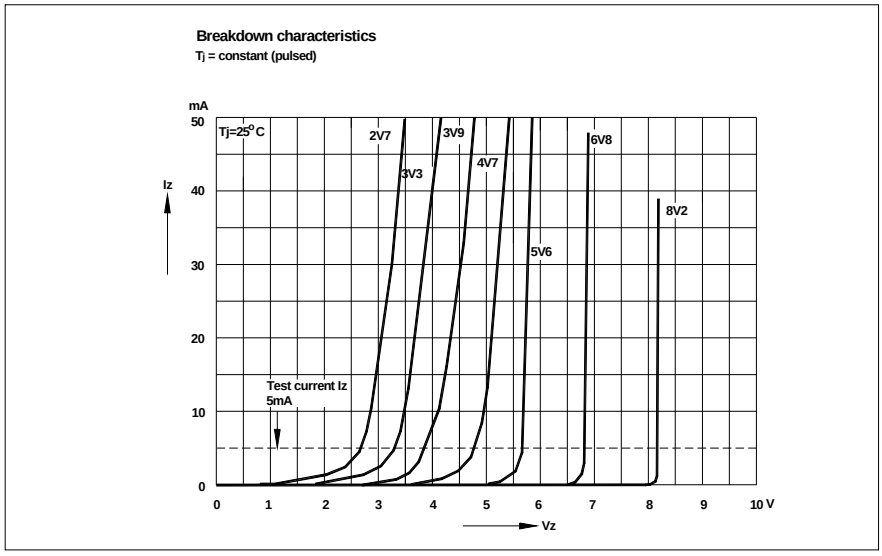
[2)] Mounted on an FR-4 PCB 38 * 38 * 1.6 mm with single-sided Cu pad areas 25mm^2(>70 µm thick).

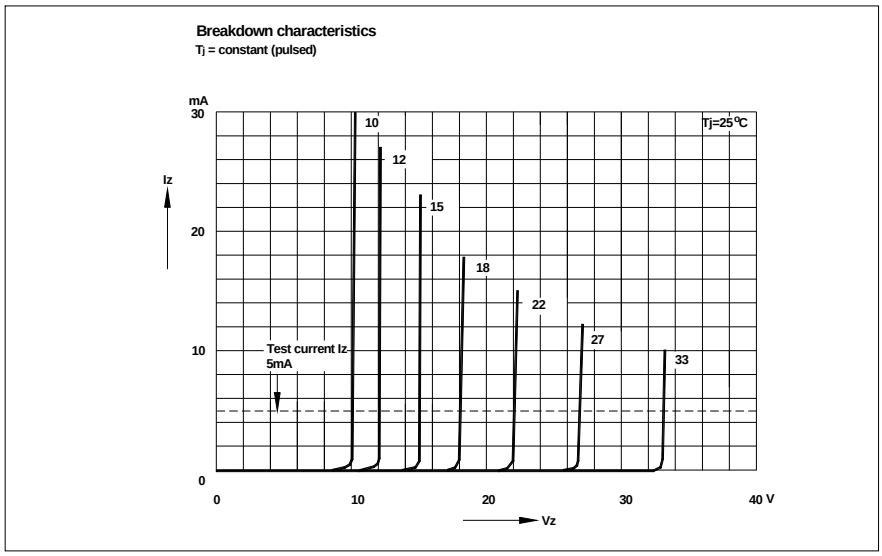
Dated : 26/02/2020 Rev : 01

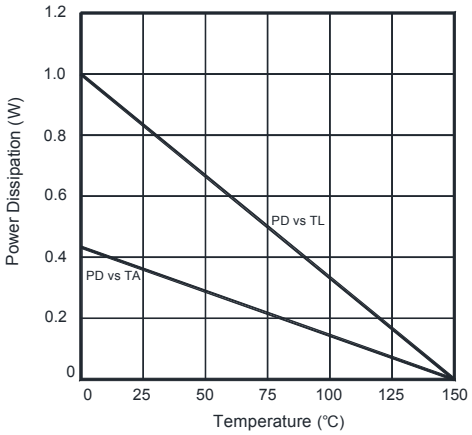
Characteristics at T_a = 25 °C

Type	Marking Code	Zener Voltage Range [1]			Dynamic Impedance		Reverse Leakage Current	
		V_{znom}	V_{ZT}	I_{ZT}	Z_{ZT} (Max.)	at I_Z	I_R (Max.)	at V_R
		V	V	mA	Ω	mA	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	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).

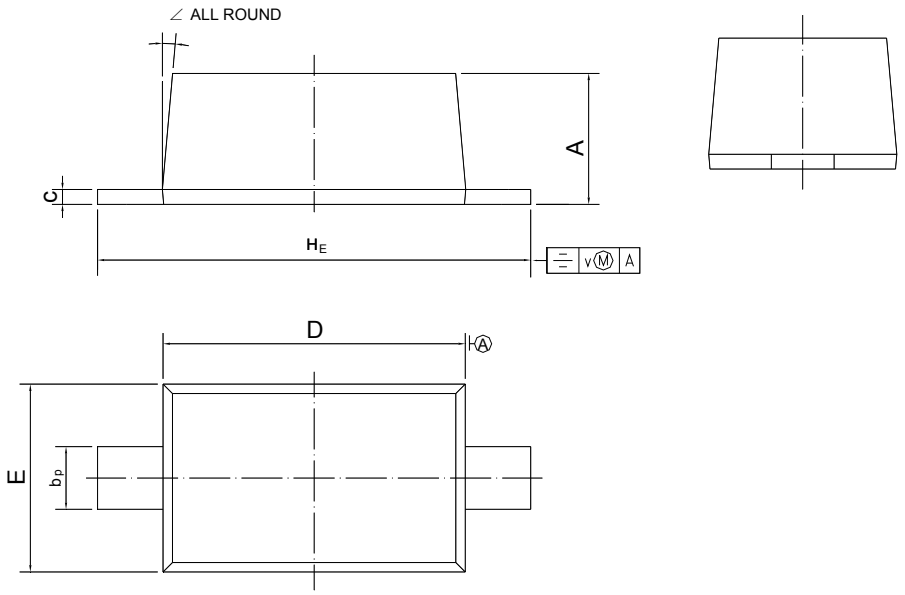

Breakdown characteristics
Tj = constant (pulsed)
mA
Tj=25°C
Iz
2V7
3V3
3V9
4V7
5V6
6V8
8V2
Test current Iz
5mA
0
10
20
30
40
50
0 1 2 3 4 5 6 7 8 9 10 V
Vz


Breakdown characteristics
Tj = constant (pulsed)
mA
Tj=25°C
Iz
10
12
15
18
22
27
33
Test current Iz
5mA
0
10
20
30
0 10 20 30 40 V
Vz


Power Dissipation (W)
1.2
1.0
0.8
0.6
0.4
0.2
0
PD vs TL
PD vs TA
0 25 50 75 100 125 150
Temperature (°C)

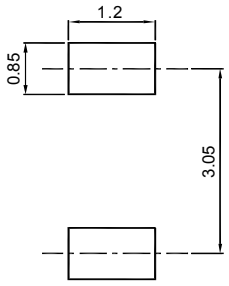
PACKAGE OUTLINE

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

"III" = Cathode line

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