

描述 / Descriptions

玻璃钝化结齐纳稳压二极管，薄型 SOD-123FL 封装。
Glass Passivated Junction Zener voltage regulator diodes, SOD-123FL thin package.

特征 / Features

适用于 3.3V 至 330V 的宽范围稳压电路，小型塑料封装适合表面贴装工艺。无卤产品。
3.3V to 330V wide zener voltage range applications, Small plastic package suitable for surface mounted design. Halogen free product.

用途 / Applications

1W 功耗，自动贴片组装。
1W power dissipation, automated assembly processes.

内部等效电路 / Equivalent Circuit

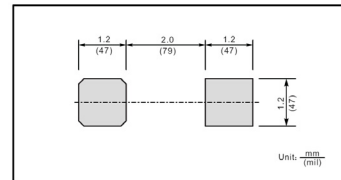


引脚排列 / Pinning



PIN	DESCRIPTION
1	Cathode
2	Anode

The recommended mounting pad size



印章代码 / Marking

见印章说明。See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Power Dissipation at $T_L=75^\circ\text{C}$	P_D	1.0	W
Forward Voltage at $I_F = 200 \text{ mA}$	V_F	1.2	V
Typical thermal resistance junction to ambient ⁽¹⁾	$R_{\theta JA}$	55	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{stg}	-55~150	$^\circ\text{C}$

(1) Thermal resistance from junction to ambient at P.C.B. mounted with 0.2 X 0.2" (5 X 5 mm) copper areas pads

电性能参数 / Electrical Characteristics(Ta=25°C)

Type	Marking	Zener Voltage Range ⁽¹⁾			I_{ZT} mA	Dynamic Impedance Z_{ZT} (at I_{ZT}) Max (Ω)	Reverse Current		Admissible Zener Current I_{ZM} (mA)
		V_{ZT} (at I_{ZT})					I_R	at V_R	
		Min (V)	Nom (V)	Max (V)			Max (μA)	(V)	
MM1W3V3	FHD	3.10	3.3	3.50	75	10	100	1	285
MM1W3V6	FHE	3.40	3.6	3.80	69	10	100	1	263
MM1W3V9	FHF	3.70	3.9	4.10	64	9.0	50	1	243
MM1W4V3	FHG	4.06	4.3	4.56	58	9.0	25	1	219
MM1W4V7	FHJ	4.50	4.7	4.93	53	8.0	10	1	203
MM1W5V1	FHK	4.84	5.1	5.36	49	7.0	10	1	186
MM1W5V6	FHL	5.32	5.6	5.92	45	5.0	10	2	170
MM1W6V2	FHN	5.86	6.2	6.51	41	2.0	10	3	154
MM1W6V8	FHO	6.46	6.8	7.18	37	3.5	10	4	140
MM1W7V5	FHQ	7.12	7.5	7.88	34	4.0	10	5	127
MM1W8V2	FHR	7.79	8.2	8.67	31	4.5	10	6	116
MM1W9V1	FHT	8.60	9.0	9.59	28	5.0	10	7	104
MM1W10	FHU	9.50	10	10.5	25	7.0	10	7	95
MM1W11	FHV	10.4	11	11.6	23	8.0	5	8	86
MM1W12	FHW	11.4	12	12.6	21	9.0	5	9	79
MM1W13	FHX	12.4	13	14.1	19	10	5	10	71

电性能参数 / Electrical Characteristics(Ta=25°C)

Type	Marking	Zener Voltage Range ⁽¹⁾			I _{ZT} mA	Dynamic Impedance Z _{ZT} (at I _{ZT}) Max (Ω)	Reverse Current		Admissible Zener Current I _{ZM} (mA)
		V _{ZT} (at I _{ZT})					I _R	at V _R	
		Min (V)	Nom (V)	Max (V)			Max (μA)	(V)	
MM1W15	FHZ	13.8	15	15.8	17	14	5	11	63
MM1W16	FJA	15.2	16	17.1	16	16	5	12	58
MM1W18	FJF	16.8	18	19.2	14	20	5	13	52
MM1W20	FJG	19.0	20	21.2	13	22	5	15	47
MM1W22	FJK	20.8	22	23.3	12	23	5	17	43
MM1W24	FJL	22.8	24	26.0	11	25	5	18	38
MM1W27	FJN	25.3	27	28.9	9.5	35	5	21	35
MM1W30	FJQ	28.2	30	32.0	8.5	40	5	23	31
MM1W33	FJR	31.3	33	34.9	7.5	45	5	25	28
MM1W36	FJS	34.2	36	37.9	7.0	50	5	27	26
MM1W39	FJT	37.2	39	41.5	6.5	60	5	30	24
MM1W43	FLG	40.9	43	45.6	6.0	70	1	32	22
MM1W47	FLJ	44.9	47	49.8	5.5	80	1	35	20
MM1W51	FLK	48.6	51	54.0	5.0	95	1	38	18
MM1W56	FLL	53.6	56	58.8	4.5	110	1	42	17
MM1W62	FLN	58.9	62	65.6	4.0	125	1	47	15
MM1W68	FLO	64.6	68	71.7	3.7	150	1	52	14
MM1W75	FLQ	71.2	75	78.8	3.3	175	1	56	12
MM1W82	FLR	77.9	82	87.0	3.0	200	1	62	11
MM1W91	FLT	86.0	91	96.0	2.8	250	1	69	10
MM1W100	FLU	95.0	100	105	2.5	350	1	76	9.5
MM1W110	FLV	104	110	116	2.3	450	1	84	8.6
MM1W120	FLW	114	120	127	2.0	550	1	91	7.8
MM1W135	FLX	125	135	142	1.9	700	1	100	7.0

MM1W3V3~ MM1W330

Rev.E May.-2017

电性能参数 / Electrical Characteristics(Ta=25°C)

Type	Marking	Zener Voltage Range ⁽¹⁾			I _{ZT} mA	Dynamic Impedance Z _{ZT} (at I _{ZT}) Max (Ω)	Reverse Current		Admissible Zener Current I _{ZM} (mA)
		V _{ZT} (at I _{ZT})					I _R	at V _R	
		Min (V)	Nom (V)	Max (V)			Max (μA)	(V)	
MM1W150	FLZ	140	150	157	1.7	900	1	110	6.3
MM1W165	FPA	155	165	172	1.6	1100	1	120	5.8
MM1W180	FPF	170	180	191	1.4	1200	1	135	5.2
MM1W200	FPG	189	200	211	1.2	1400	1	150	4.7
MM1W220	FPK	209	220	231	1.0	1600	1	165	4.3
MM1W240	FPL	229	240	251	1.0	1800	1	180	3.9
MM1W260	FPM	249	260	271	1.0	2000	1	190	3.7
MM1W280	FPN	269	280	291	1.0	2100	1	205	3.4
MM1W300	FPQ	289	300	315	1.0	2300	1	230	3.1
MM1W330	FPR	313	330	346	1.0	2500	1	250	2.8

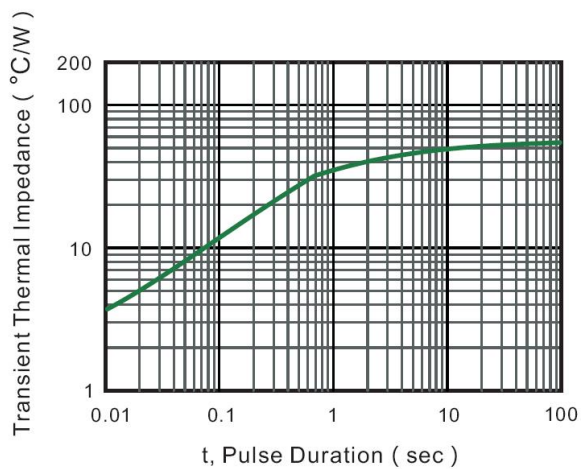
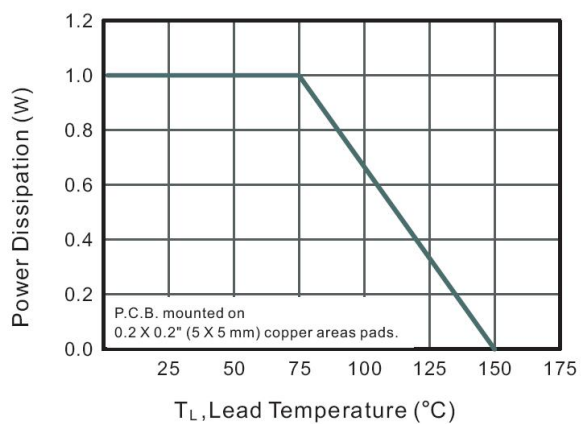
Note:

(1) V_{ZT} is tested with pulses (20 ms)

MM1W3V3~ MM1W330

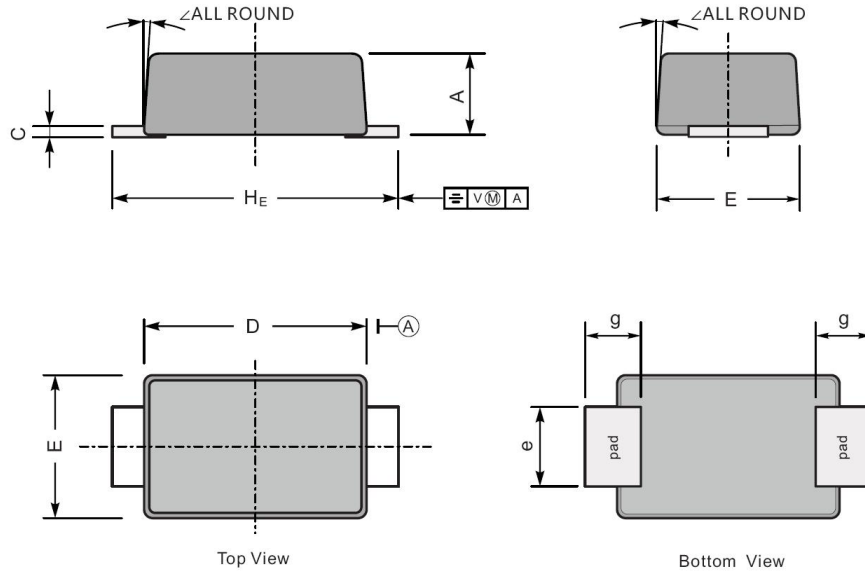
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电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

SOD-123FL

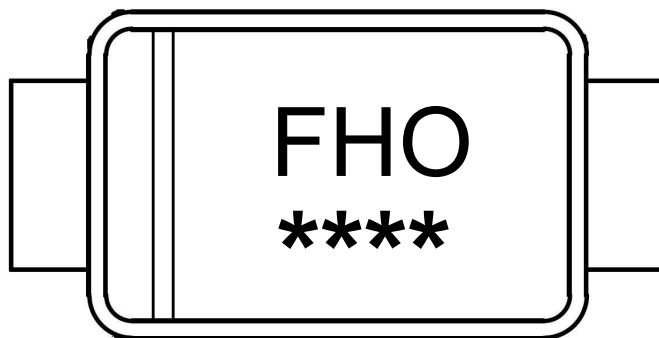


UNIT		A	C	D	E	e	g	H_E	\angle
mm	max	1.1	0.20	2.9	1.9	1.1	0.9	3.8	7°
	min	0.9	0.12	2.6	1.7	0.8	0.7	3.5	
mil	max	43	7.9	114	75	43	35	150	
	min	35	4.7	102	67	31	28	138	


印章说明 / Marking Instructions

Type number	Marking
MM1W3V3	FHD
MM1W3V6	FHE
MM1W3V9	FHF
MM1W4V3	FHG
MM1W4V7	FHJ
MM1W5V1	FHK
MM1W5V6	FHL
MM1W6V2	FHN
MM1W6V8	FHO
MM1W7V5	FHQ
MM1W8V2	FHR
MM1W9V1	FHT
MM1W10	FHU
MM1W11	FHV
MM1W12	FHW
MM1W13	FHX
MM1W15	FHZ
MM1W16	FJA
MM1W18	FJF
MM1W20	FJG
MM1W22	FJK
MM1W24	FJL
MM1W27	FJN
MM1W30	FJQ
MM1W33	FJR
MM1W36	FJS
MM1W39	FJT
MM1W43	FLG
MM1W47	FLJ
MM1W51	FLK
MM1W56	FLL
MM1W62	FLN
MM1W68	FLO
MM1W75	FLQ
MM1W82	FLR
MM1W91	FLT
MM1W100	FLU
MM1W110	FLV
MM1W120	FLW
MM1W135	FLX
MM1W150	FLZ
MM1W165	FPA
MM1W180	FPF
MM1W200	FPG
MM1W220	FPK
MM1W240	FPL
MM1W260	FPM
MM1W280	FPN
MM1W300	FPQ
MM1W330	FPR

印章说明 / Marking Instructions



说明：

FHO： 为型号代码

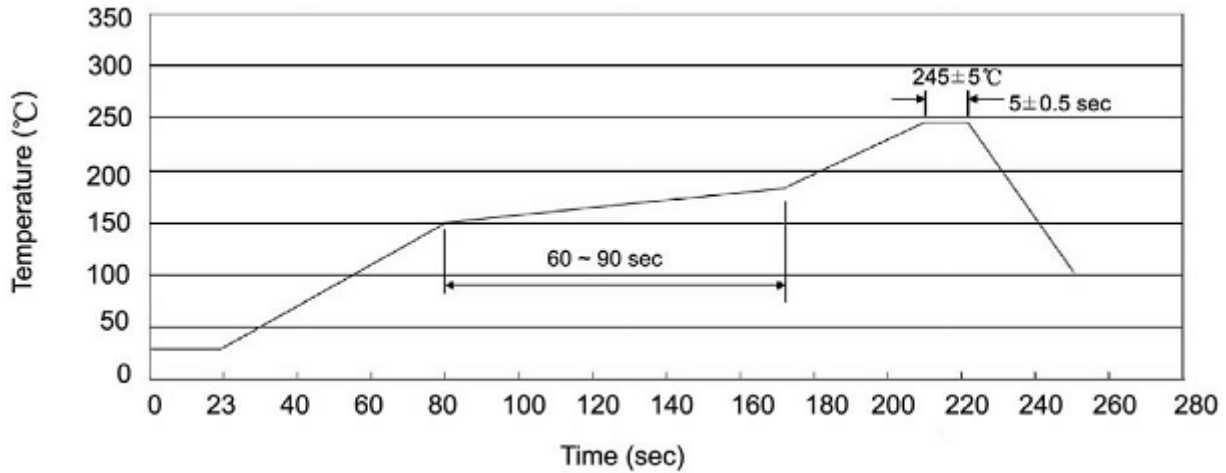
****： 为生产批号追溯码，第1个*为年月代码，后面3个*为当月小批号代码

Note:

FHO： Product Type Code

****： Lot No. Code ,The 1st * means:YM Code ,The last 3 * means:little Lot No Code

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOD-123FL	3000	8	24000	5	120000	7" ×11	185X180X105	390X385X205

使用说明 / Notices