



**DESCRIPTION**

The MM1W3V3~MM1W330 are available in SOD-123FL package

**FEATURES**

- Total power dissipation: Max. 1 W.
- Wide zener reverse voltage range 3.3V to 330V
- Small plastic package suitable for surface mounted design.
- Available in SOD-123FL package

**ORDERING INFORMATION**

Package Type	Part Number	
SOD-123FL	MM1W3V3	MM1W36
	MM1W3V6	MM1W39
	MM1W3V9	MM1W43
	MM1W4V3	MM1W47
	MM1W4V7	MM1W51
	MM1W5V1	MM1W56
	MM1W5V6	MM1W62
	MM1W6V2	MM1W68
	MM1W6V8	MM1W75
	MM1W7V5	MM1W82
	MM1W8V2	MM1W91
	MM1W9V1	MM1W100
	MM1W10	MM1W110
	MM1W11	MM1W120
	MM1W12	MM1W135
	MM1W13	MM1W150
	MM1W15	MM1W165
	MM1W16	MM1W180
	MM1W18	MM1W200
	MM1W20	MM1W220
	MM1W22	MM1W240
	MM1W24	MM1W260
MM1W27	MM1W280	
MM1W30	MM1W300	
MM1W33	MM1W330	
Note	SPQ: 3,000pcs/Reel	
AiT provides all RoHS Compliant Products		

**PIN DESCRIPTION**





## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub> = 25°C

P <sub>D</sub> , Power Dissipation at T <sub>L</sub> =75°C	1 W
V <sub>F</sub> , Forward Voltage at I <sub>F</sub> =200mA	1.2V
R <sub>θJA</sub> , Typical Thermal Resistance Junction to Ambient <sup>NOTE1</sup>	55°C/W
T <sub>J</sub> , T <sub>STG</sub> , Operation and Storage Temperature Range	-55°C ~+150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: Thermal resistance from junction to ambient at P.C.B. mounted with 0.2 X 0.2" (5 X 5 mm) copper areas pads.

## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C

Part Number	Zener Voltage Range <sup>NOTE1</sup>				Dynamic Impedance Z <sub>ZT</sub> (at I <sub>ZT</sub> ) Max (Ω)	Reverse Current		Admissible Zener Current I <sub>ZM</sub> (mA)
	V <sub>ZT</sub> (at I <sub>ZT</sub> )			I <sub>ZT</sub> (mA)		I <sub>R</sub> Max (μA)	At V <sub>R</sub> (V)	
	Min (V)	Nom (V)	Max (V)					
MM1W3V3	3.10	3.3	3.50	75	10	100	1	285
MM1W3V6	3.40	3.6	3.80	69	10	100	1	263
MM1W3V9	3.70	3.9	4.10	64	9.0	50	1	243
MM1W4V3	4.06	4.3	4.56	58	9.0	25	1	219
MM1W4V7	4.50	4.7	4.93	53	8.0	10	1	203
MM1W5V1	4.84	5.1	5.36	49	7.0	10	1	186
MM1W5V6	5.32	5.6	5.92	45	5.0	10	2	170
MM1W6V2	5.86	6.2	6.51	41	2.0	10	3	154
MM1W6V8	6.46	6.8	7.18	37	3.5	10	4	140
MM1W7V5	7.12	7.5	7.88	34	4.0	10	5	127
MM1W8V2	7.79	8.2	8.67	31	4.5	10	6	116
MM1W9V1	8.60	9.1	9.59	28	5.0	10	7	104
MM1W10	9.50	10	10.5	25	7.0	10	7	95
MM1W11	10.4	11	11.6	23	8.0	5	8	86
MM1W12	11.4	12	12.6	21	9.0	5	9	79
MM1W13	12.4	13	14.1	19	10	5	10	71
MM1W15	13.8	15	15.8	17	14	5	11	63
MM1W16	15.2	16	17.1	16	16	5	12	58
MM1W18	16.8	18	19.2	14	20	5	13	52
MM1W20	19.0	20	21.2	13	22	5	15	47
MM1W22	20.8	22	23.3	12	23	5	17	43
MM1W24	22.8	24	26.0	11	25	5	18	38
MM1W27	25.3	27	28.9	9.5	35	5	21	35
MM1W30	28.2	30	32.0	8.5	40	5	23	31
MM1W33	31.3	33	34.9	7.5	45	5	25	28
MM1W36	34.2	36	37.9	7.0	50	5	27	26
MM1W39	37.2	39	41.5	6.5	60	5	30	24
MM1W43	40.9	43	45.6	6.0	70	1	32	22



Part Number	Zener Voltage Range			I <sub>ZT</sub> (mA)	Dynamic Impedance Z <sub>ZT</sub> (at I <sub>ZT</sub> ) Max (Ω)	Reverse Current		Admissible Zener Current I <sub>ZM</sub> (mA)
	V <sub>ZT</sub> (at I <sub>ZT</sub> )					I <sub>R</sub> Max (μA)	At V <sub>R</sub> (V)	
	Min (V)	Nom (V)	Max (V)					
MM1W47	44.9	47	49.8	5.5	80	1	35	20
MM1W51	48.6	51	54.0	5.0	95	1	38	18
MM1W56	53.6	56	58.8	4.5	110	1	42	17
MM1W62	58.9	62	65.6	4.0	125	1	47	15
MM1W68	64.6	68	71.7	3.7	150	1	52	14
MM1W75	71.2	75	78.8	3.3	175	1	56	12
MM1W82	77.9	82	87.0	3.0	200	1	62	11
MM1W91	86.0	91	96.0	2.8	250	1	69	10
MM1W100	95.0	100	105	2.5	350	1	76	9.5
MM1W110	104	110	116	2.3	450	1	84	8.6
MM1W120	114	120	127	2.0	550	1	91	7.8
MM1W135	125	135	142	1.9	700	1	100	7.0
MM1W150	140	150	157	1.7	900	1	110	6.3
MM1W165	155	165	172	1.6	1100	1	120	5.8
MM1W180	170	180	191	1.4	1200	1	135	5.2
MM1W200	189	200	211	1.2	1400	1	150	4.7
MM1W220	209	220	231	1.0	1600	1	165	4.3
MM1W240	229	240	251	1.0	1800	1	180	3.9
MM1W260	249	260	271	1.0	2000	1	190	3.7
MM1W280	269	280	291	1.0	2100	1	205	3.4
MM1W300	289	300	315	1.0	2300	1	230	3.1
MM1W330	313	330	346	1.0	2500	1	250	2.8

NOTE1: V<sub>ZT</sub> is tested with pulses (20 ms)

## TYPICAL CHARACTERISTICS

Figure 1. Maximum Continuous Power Derating

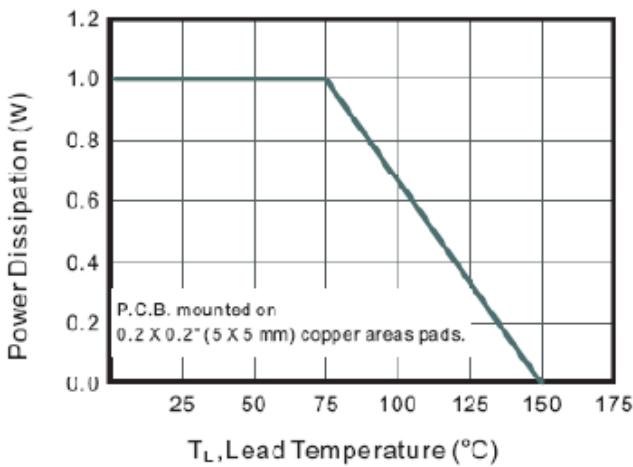
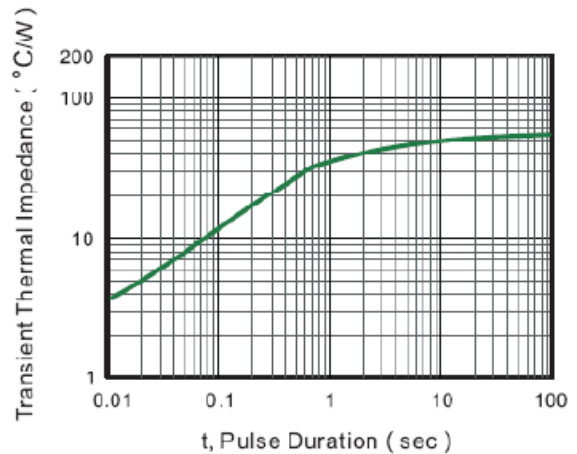
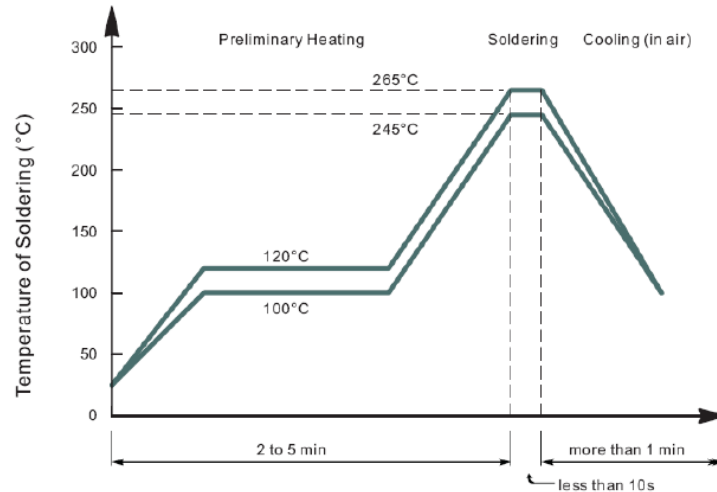


Figure 2. Typical Transient Thermal Impedance

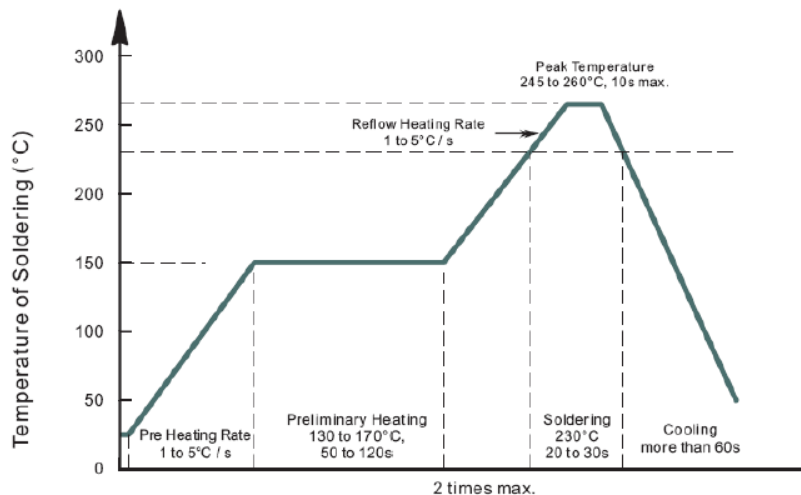




### Recommended Condition of Flow Soldering



### Recommended Condition of Reflow Soldering



Recommended peak temperature is over 245°C. If peak temperature is below 245°C, you may adjust the following parameters; time length of peak temperature (Longer), time length of soldering (Longer), thickness of solder paste (thicker)

### Condition of hand soldering

Temperature: 365°C

Time: 3s max.

Times: one time

### Remark

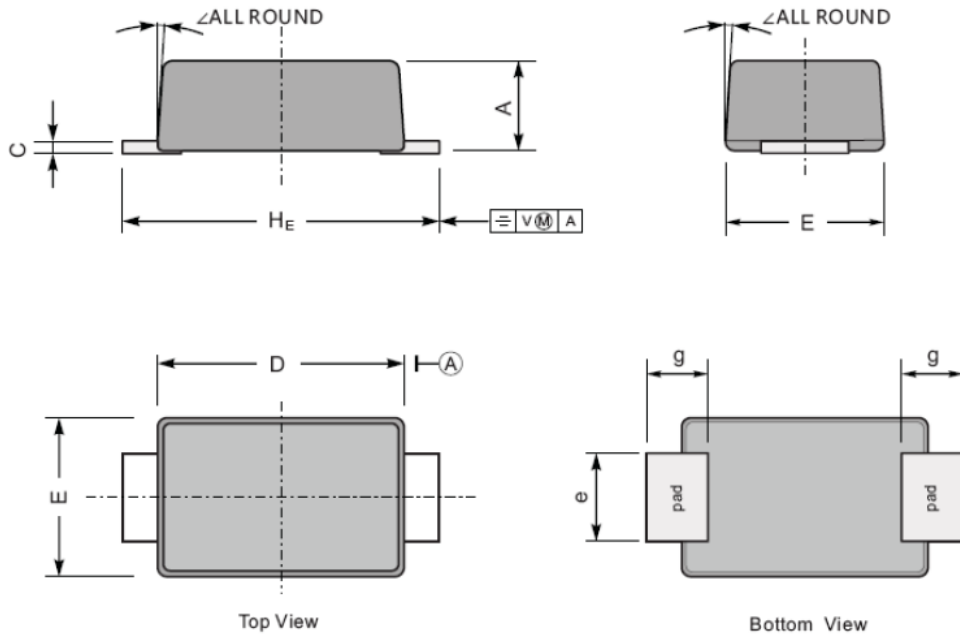
Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)



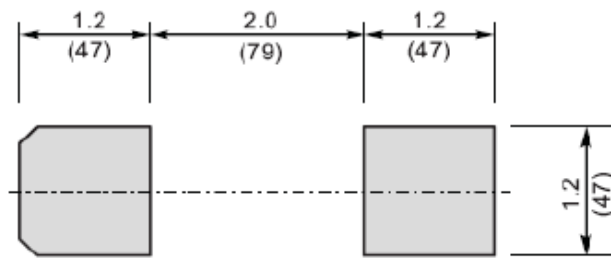
**PACKAGE INFORMATION**

Dimension in SOD-123FL (Unit: mm)

Plastic surface mounted package; 2 leads



The recommended mounting pad size



Unit:  $\frac{\text{mm}}{\text{(mil)}}$

UNIT		A	c	D	E	e	g	H <sub>E</sub>	$\angle$
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	



## IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.' integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.