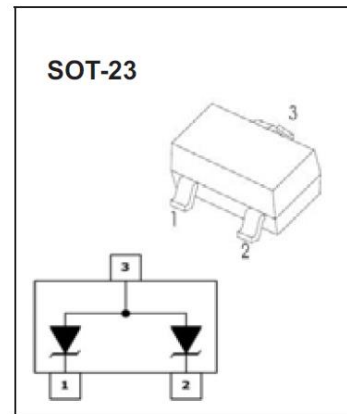


Features

- ◆ Planar Die Construction
- ◆ General Purpose, Medium Current
- ◆ Ideally Suited for Automated Assembly
- ◆ ESD Rating:
Class 3B (>16kV) per the Human Body Model
Class C (>400V) per Machine Model
- ◆ ESD Rating of IEC61000-4-2 level 4, 30kV
- ◆ contact Discharge
- ◆ Flammability Rating: UL 94V-0
- ◆ P/N suffix V means AEC-Q101 qualified, e.g:MMBZ5V6ALV
- ◆ P/N suffix V means Halogen-free



Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ $I_F = 10\text{mA}$	V_F	0.9	V
Power Dissipation	P_D	200	mW
Peak Power Dissipation @ 1.0ms MMBZ5V6AL thru MMBZ9V1AL MMBZ12VAL thru MMBZ27VAL	P_{PK}	24 40	W
Junction Temperature	T_j	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^\circ\text{C}$

24 WATT

ELECTRICAL CHARACTERISTICS At $T_A = 25^\circ\text{C}$ unless otherwise noted

Part Number	Device Marking	V_{RWM}	I_R	V_{BR}			Z_{ZT}	Z_{ZK}		V_C		
		(V)	(μA)	(V)			()	()	(mA)	(V)	(A)	
			@ V_{RWM}	Min	Nom	Max	@ I_T	Max @ I_{ZT}	Max	@ I_{ZK}	Max	@ I_{PP}
MMBZ5V6AL	5A6	3.0	5.0	5.32	5.6	5.88	20	11	1600	0.25	8.0	3.0
MMBZ6V2AL	6A2	3.0	0.5	5.89	6.2	6.51	1.0	--	--	--	8.7	2.76
MMBZ6V8AL	6A8	4.5	0.5	6.46	6.8	7.14	1.0	--	--	--	9.6	2.5
MMBZ9V1AL	9A1	6.0	0.3	8.65	9.1	9.56	1.0	--	--	--	14	1.7

40 WATTS

ELECTRICAL CHARACTERISTICS At $T_A = 25^\circ\text{C}$ unless otherwise noted

Part Number	Device Marking	V_{RWM}	I_R	V_{BR}				V_C (note1)	
		(V)	(nA)	(V)			(mA)	(V)	(A)
			@ V_{RWM}	Min	Nom	Max	@ I_T	Max	@ I_{PP}
MMBZ12VAL	12A	8.5	200	11.40	12	12.60	1	17	2.35
MMBZ15VAL	15A	12.0	50	14.25	15	15.75	1	21	1.90
MMBZ18VAL	18A	14.5	50	17.10	18	18.90	1	25	1.60
MMBZ27VAL	27A	22.0	50	25.65	27	28.35	1	40	1.0

Rating And Characteristics Curve

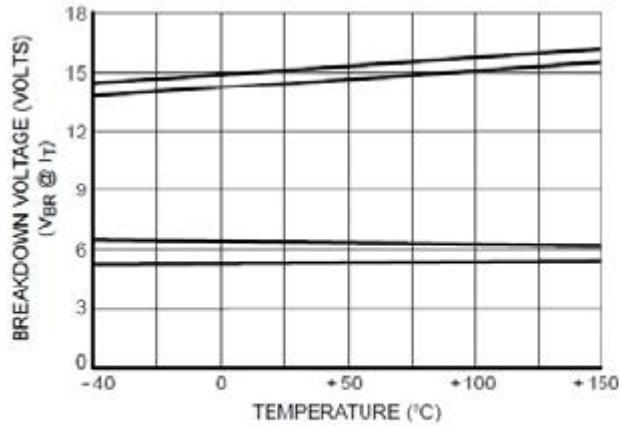


Figure 1. Typical Breakdown Voltage versus Temperature
(Upper curve for each voltage is bidirectional mode, lower curve is unidirectional mode)

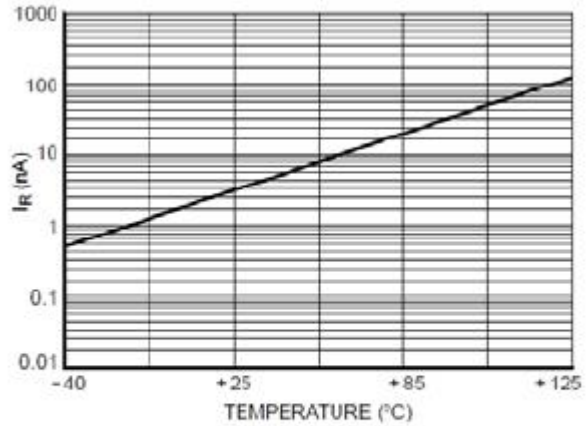


Figure 2. Typical Leakage Current versus Temperature

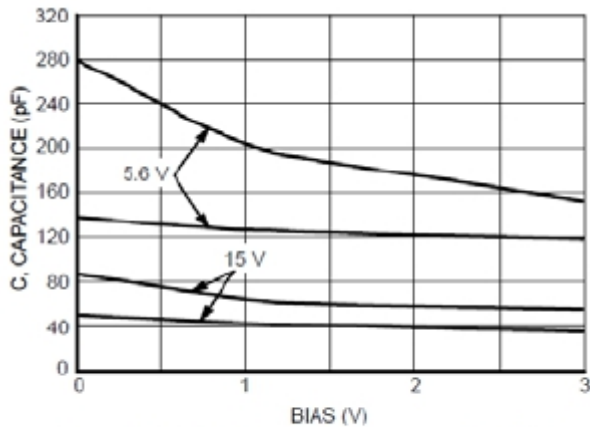


Figure 3. Typical Capacitance versus Bias Voltage
(Upper curve for each voltage is unidirectional mode, lower curve is bidirectional mode)

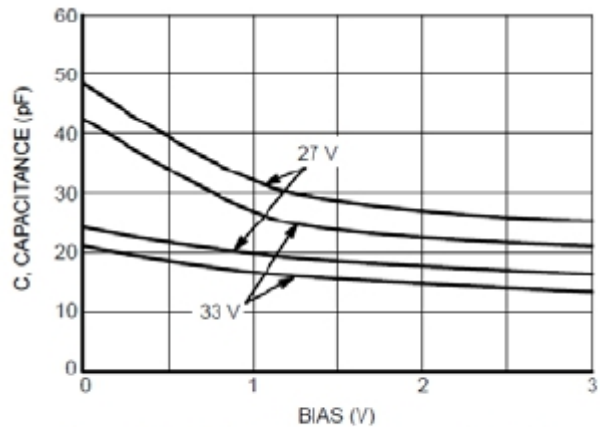


Figure 4. Typical Capacitance versus Bias Voltage
(Upper curve for each voltage is unidirectional mode, lower curve is bidirectional mode)

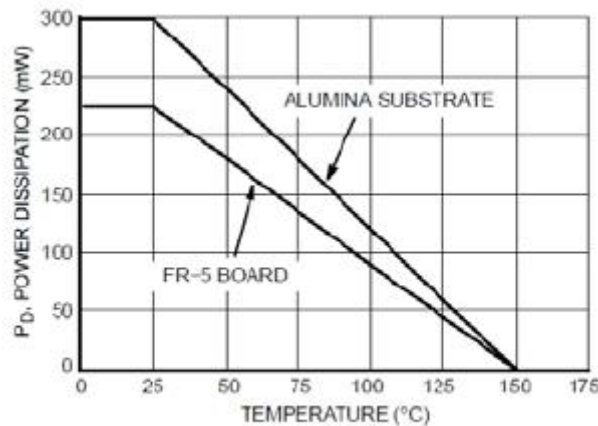
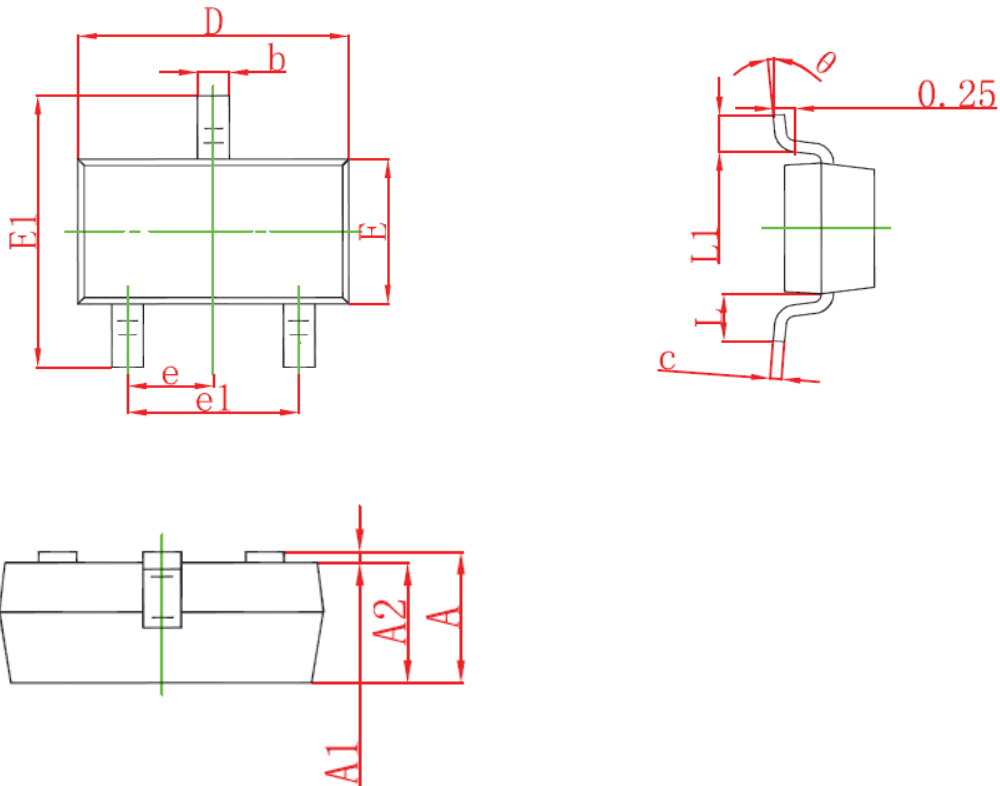


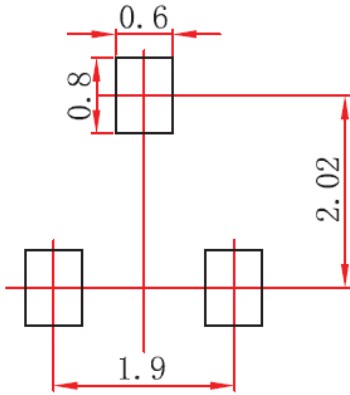
Figure 5. Steady State Power Derating Curve

SOT23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT23 Suggested Pad Layout

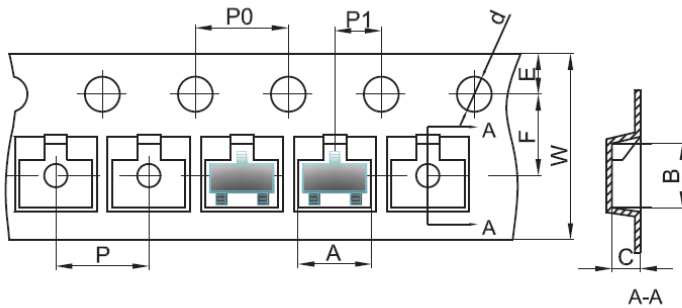


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

SOT23 Tape and Reel

SOT-23 Embossed Carrier Tape

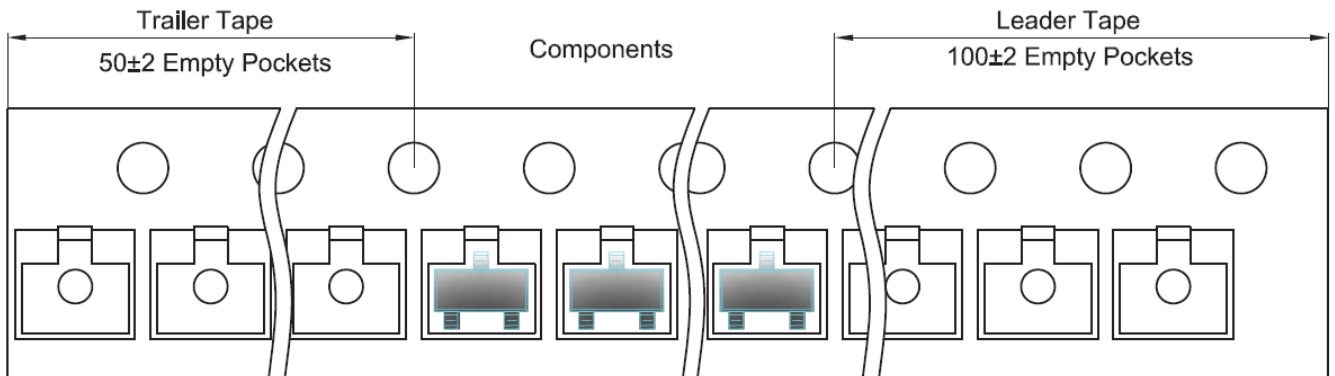


Packaging Description:

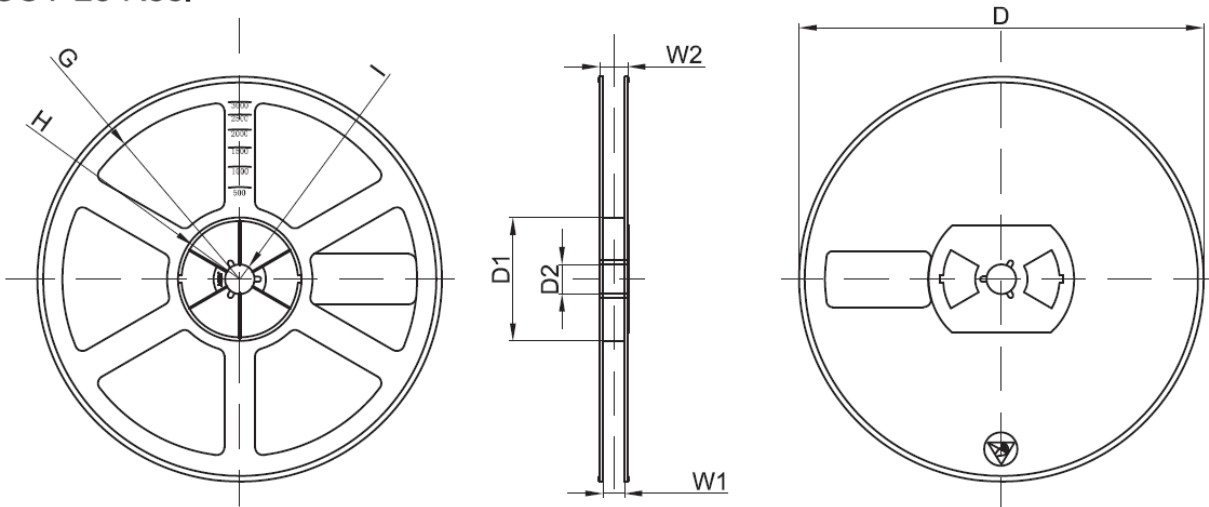
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	$\text{Ø}1.50$	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dla	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	