

Description

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

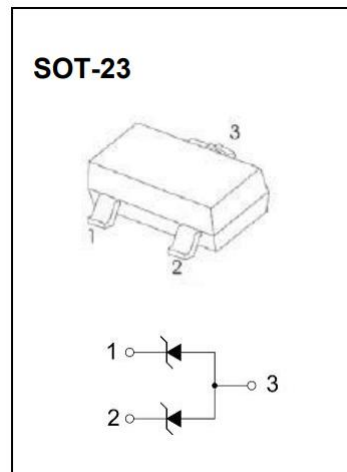
The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

Features

- Bi-directional ESD protection of one line
- Reverse stand-off voltage: 3.0V~26V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- IEC 61000-4-2 (ESD) immunity test :
- Air discharge: $\pm 30\text{kV}$
- Contact discharge: $\pm 30\text{kV}$

Applications

- Computers and peripherals
- High speed data lines
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber identity module(SIM) card protection
- Portable electronics
- FireWire
- Other electronics equipments communi- cation systems



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	24/40	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 30 ± 30	kV
Operating Temperature Range	TJ	-55to +150	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

24WATTS

Device	Marking	VRWM	IR@ VRWM	Breakdown voltage				VCC@ IPP		VBR
				VBR(V)			I _T	V _C	IPP	
		Volts	nA	Min	Nom	Max	mA	V	A	mV/ C
MMBZ6V2AL	6A2	3.0	100	5.89	6.2	6.51	1.0	8.7	2.76	2.80
MMBZ6V8AL	6A8	4.5	50	6.46	6.8	7.14	1.0	9.6	2.5	3.4
MMBZ9V1AL	9A1	6.0	50	8.65	9.1	9.56	1.0	14	1.7	7.5
MMBZ10VAL	10A	6.5	10	9.50	10	10.5	1.0	14.2	1.7	7.5

40WATTS

Device	Marking	VRWM	IR@ VRWM	Breakdown voltage				VCC@ IPP		VBR
				VBR(V)			I _T	V _C	IPP	
		Volts	nA	Min	Nom	Max	mA	V	A	mV/ C
MMBZ12VAL	12A	8.5	5	11.40	12	12.6	1.0	17	2.35	7.5
MMBZ15VAL	15A	12	5	14.25	15	15.75	1.0	21	1.9	12.3
MMBZ18VAL	18A	14.5	5	17.10	18	18.90	1.0	25	1.6	15.3
MMBZ20VAL	20A	17	5	19.00	20	21.00	1.0	28	1.4	17.2
MMBZ27VAL	27A	22	5	25.65	27	28.35	1.0	40	1.0	24.3
MMBZ33VAL	33A	26	5	31.35	33	34.65	1.0	46	0.87	30.4

Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

Fig 1 Power Derating Curve

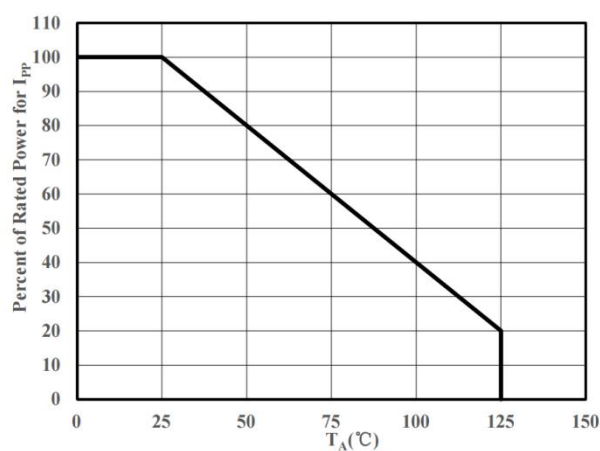


Fig 2 8/20 μs pulse waveform according to IEC 61000-4-5

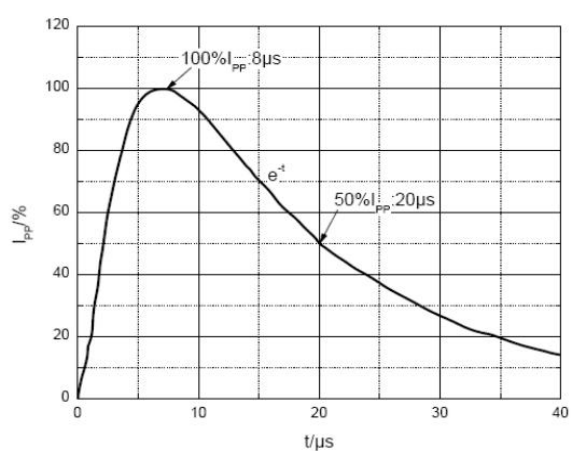
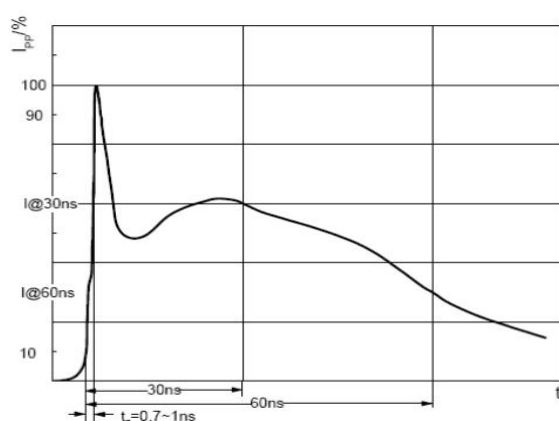


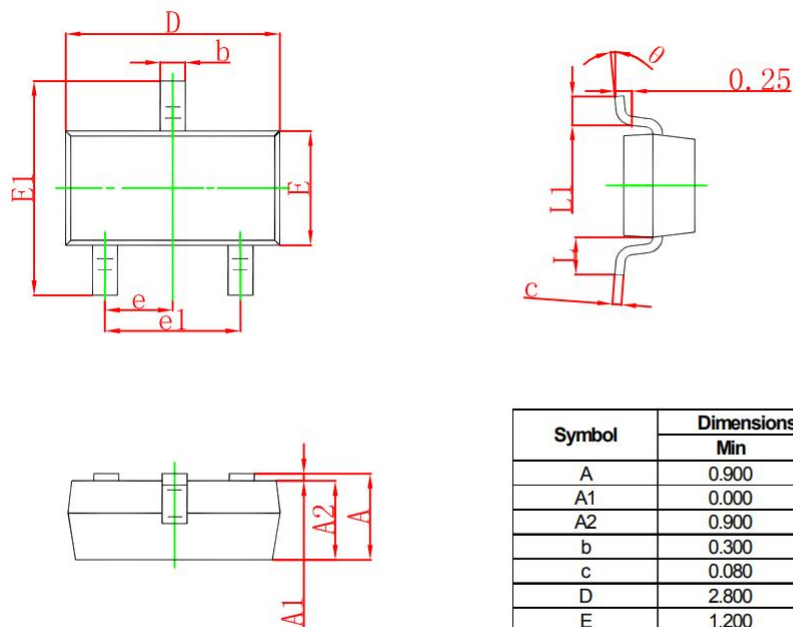
Fig 3 ESD pulse waveform according to IEC61000-4-2



Ordering Information

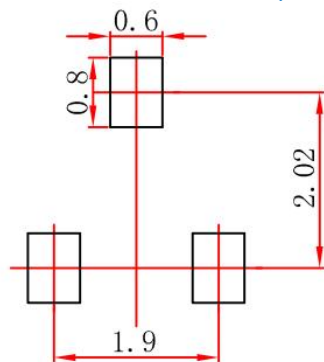
Part Number	Package Type	Quantity(PCS) /Reel	Reel Size
MMBZ6V2AL~MMBZ33VAL	SOT-23	3000	7 inch

Package Outline Dimensions (Unit: mm)



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°

Suggested Land Pattern (Unit: mm)



- Note:
- 1. Controlling dimension: in millimeters.
 - 2. General tolerance: ± 0.05 mm.
 - 3. The pad layout is for reference purposes only.