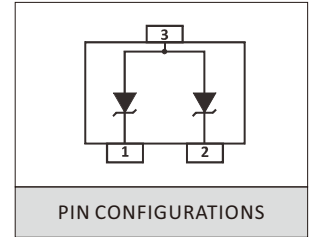
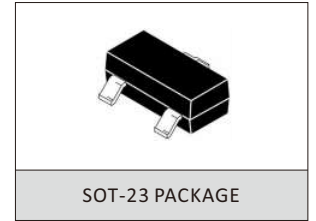


## DESCRIPTION

These dual monolithic silicon Zener diodes are designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. Their dual junction common anode design protects two separate lines using only one package. These devices are ideal for situations where board space is at a premium.

## FEATURES

- > Pb-Free Packages are Available
- > SOT-23 Package Allows Either Two Separate Unidirectional Configurations or a Single Bidirectional Configuration
- > Working Peak Reverse Voltage Range – -3~26V
- > ESD Rating of Class N (exceeding 16 kV) per the Human Body Model
- > Maximum Clamping Voltage @ Peak Pulse Current
- > Low Leakage < 5.0uA
- > Flammability Rating UL 94 V-0



## MAXIMUM RATINGS (@T<sub>A</sub> = +25°C, unless otherwise specified.)

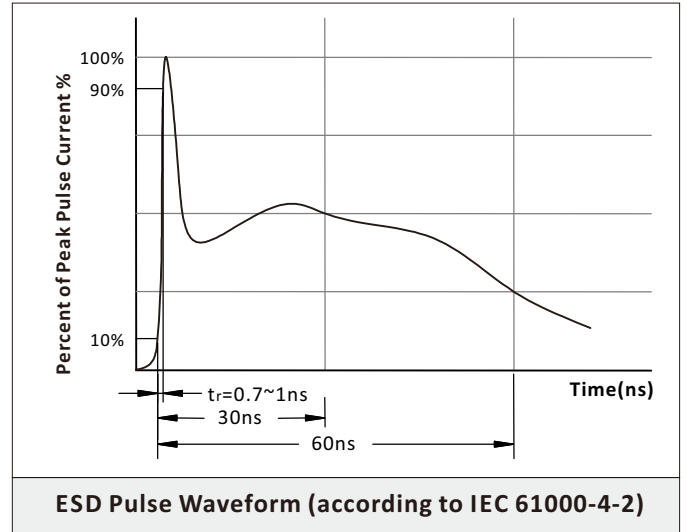
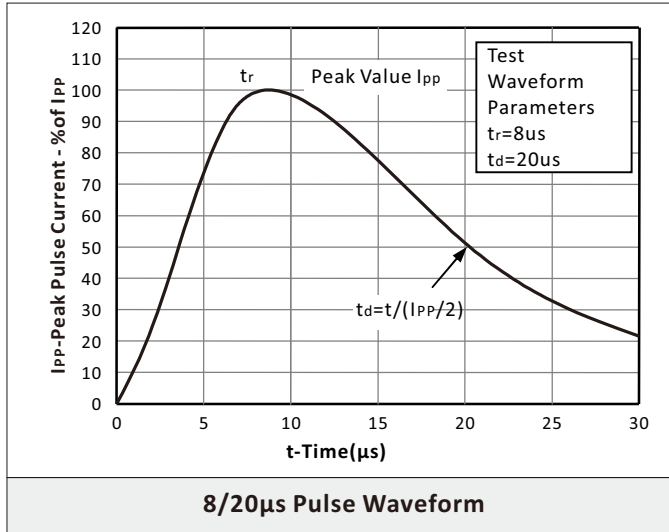
RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation:MMBZ5V6AL - MMBZ10VAL	P <sub>PK</sub>	24	W
Peak Power Dissipation:MMBZ15VAL - MMBZ33VAL	P <sub>PK</sub>	40	W
Power Dissipation	P <sub>D</sub>	225	W
Thermal Resistance, Junction to Ambient Air	R <sub>θJA</sub>	556	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65~150	°C

## ELECTRICAL CHARACTERISTICS (@T<sub>A</sub> = +25°C, unless otherwise specified.)

PART NUMBER	DEVICE MARKING CODE	V <sub>RWM</sub> (V)	I <sub>R</sub> @V <sub>RWM</sub> (uA)	V <sub>BR</sub> (V)			@I <sub>T</sub> (mA)	V <sub>C</sub> @I <sub>PP</sub> (V)	I <sub>PP</sub> (A)
				Min	Nom	Max			
MMBZ5V6AL	5A6	3.0	5.0	5.32	5.60	5.88	20	8.0	3.00
MMBZ6V2AL	6A2	3.0	0.5	5.89	6.20	6.51	1	8.7	2.76
MMBZ6V8AL	6A8	4.5	0.5	6.46	6.80	7.14	1	9.6	2.50
MMBZ9V1AL	9A1	6.0	0.3	8.65	9.10	9.56	1	14.0	1.70
MMBZ10VAL	10A	6.5	0.3	9.50	10.0	10.50	1	14.2	1.70
MMBZ12VAL	12A	8.5	0.2	11.40	12.0	12.60	1	17.0	2.35
MMBZ15VAL	15A	12.0	0.05	14.25	15.0	15.75	1	21.0	1.90
MMBZ18VAL	18A	14.5	0.05	17.10	18.0	18.90	1	25.0	1.60
MMBZ20VAL	20A	17.0	0.05	19.00	20.0	21.00	1	28.0	1.40
MMBZ27VAL	27A	22.0	0.05	25.65	27.0	28.35	1	40.0	1.00
MMBZ33VAL	33A	36.0	0.05	31.35	33.0	34.65	1	46.0	0.87

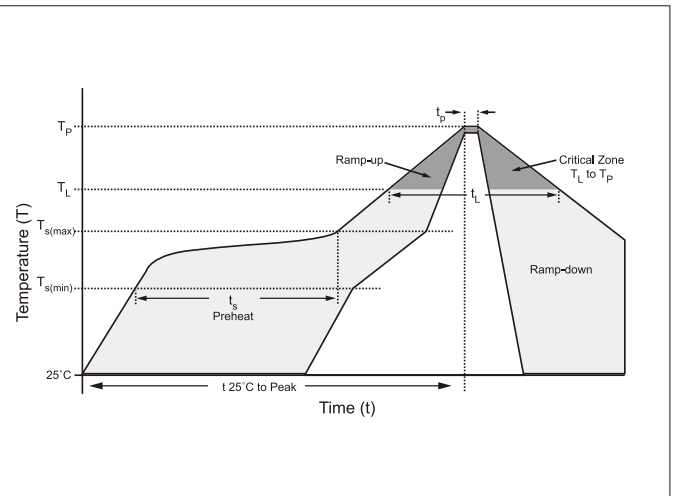


### CHARACTERISTIC CURVES



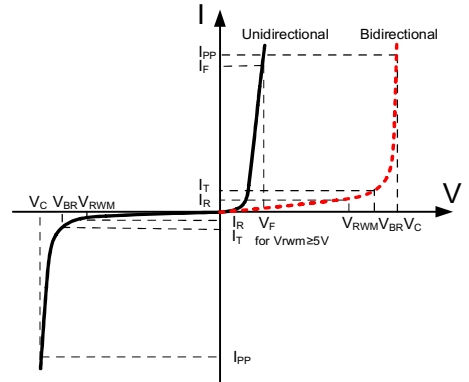
### REFLOW PROFILE

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max
Ts(max)to TL - Ramp-up Rate		3°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Time (min to max) (tl)	60 – 150 seconds
Peak Temperature (Tp)		260°C
Time within 5°C of actual peak temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (Tp)		8 minutes Max.
Do not exceed		260°C



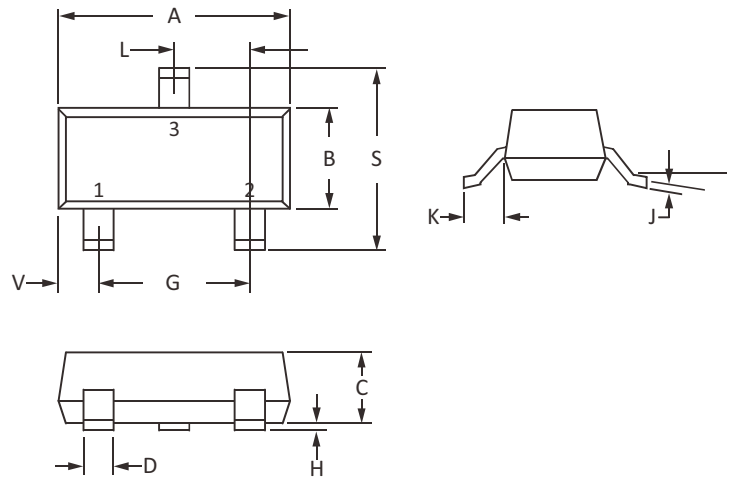
**ELECTRICAL PARAMETERS (T=25°C)**

Symbol	Parameter
$I_{PP}$	Reverse Peak Pulse Current
$V_C$	Clamping Voltage@ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Reverse Leakage Current@ $V_{RWM}$
$V_{BR}$	Breakdown Voltage@ $I_T$
$I_T$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage@ $I_F$

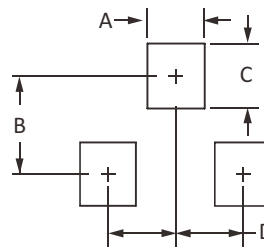


**SOT-23 PACKAGE INFORMATION**

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.013	0.100	0.001	0.004
J	0.085	0.177	0.003	0.007
K	0.45	0.60	0.018	0.024
L	0.89	1.02	0.035	0.040
S	2.10	2.50	0.083	0.098
V	0.45	0.60	0.018	0.024



PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042



## CONTACT US

### Headquarters

A Building Caohejing I&E Park Pujiang Minhang Shanghai  
China

### Hotline

400-021-5756

### Web

<http://www.semiware.com.cn>

### By Telephone

Sales: 86-21-3463-7345

Customer Service: 86-21-3463-7172-8810/8826

Technical Support: 86-21-3463-7173-8811

### By Email

Sales: [sales03@semiware.com.cn](mailto:sales03@semiware.com.cn)

Customer Service: [sales17@semiware.com.cn](mailto:sales17@semiware.com.cn)

Technical Support: [fae03@semiware.com.cn](mailto:fae03@semiware.com.cn)

### By Fax

General: 86-21-3965-0654

Sales: 86-21-3463-7458

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