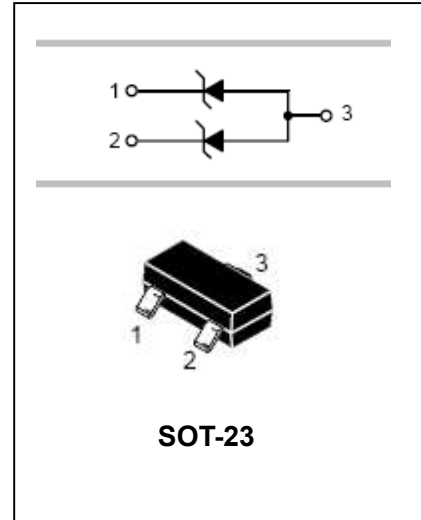


## Dual Common Anode Zener Diode

### FEATURES

- Peak power -24 or 40 watts @1.0ms (Unidirectional) per figure 5 waveform.
- ESD rating of class N (exceeding 16KV) per the human body model.
- Maximum clamping voltage @peak pulse current.
- Low leakage<5.0μA.
- Flammability rating UL 94V-O.



### APPLICATIONS

- Transient overvoltage protection capability.

### ORDERING INFORMATION

Type No.	Marking	Package Code
MMBZ5V6AL-MMBZ33VAL	See Table on page2	SOT-23

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward voltage @ $I_F=10\text{mA}$	$V_F$	0.9	V
Peak power dissipation @1.0ms(Note 1) @ $T_L \leq 25^\circ\text{C}$ MMBZ5V6AL thru MMBZ10VAL MMBZ12VAL thru MMBZ33VAL	$P_{PK}$	24 40	W
Total power Dissipation	$P_T$	300	mW
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

Note1: Non-repetitive current pulse per Figure 5 and derate above  $T_A = 25^\circ\text{C}$  per Figure 6

## Dual Common Anode Zener Diode

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Unidirectional(Circuit tied to pins 1 and 3 or pins 2 and 3)

### 24WATTS

Device	Device Marking	V <sub>RWM</sub> Volts	I <sub>R</sub> @ V <sub>RWM</sub> μA	Breakdown voltage				Max zener impedance			V <sub>CC</sub> @I <sub>PP</sub>		V <sub>BR</sub> mV/°C
				V <sub>BR</sub> (Note 2)(V)			@I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>	V <sub>C</sub>	I <sub>PP</sub>		
				Min	Nom	Max	mA	Ω	Ω	mA	V	A	
MMBZ5V6AL	5A6	3.0	5.0	5.32	5.6	5.88	20	11	1600	0.25	8.0	3.0	1.26
MMBZ6V2AL	6A2	3.0	0.5	5.89	6.2	6.51	1.0	-	-	-	8.7	2.76	2.80
MMBZ6V8AL	6A8	4.5	0.5	6.46	6.8	7.14	1.0	-	-	-	9.6	2.5	3.4
MMBZ9V1AL	9A1	6.0	0.3	8.65	9.1	9.56	1.0	-	-	-	14	1.7	7.5
MMBZ10VAL	10A	6.5	0.3	9.50	10	10.5	1.0	-	-	-	14.2	1.7	7.5

### 40WATTS

Device	Device Marking	V <sub>RWM</sub> Volts	I <sub>R</sub> @ V <sub>RWM</sub> nA	Breakdown voltage				V <sub>CC</sub> @I <sub>PP</sub>		V <sub>BR</sub> mV/°C
				V <sub>BR</sub> (Note 2)(V)			@I <sub>T</sub>	V <sub>C</sub>	I <sub>PP</sub>	
				Min	Nom	Max	mA	V	A	
MMBZ12VAL	12A	8.5	200	11.40	12	12.6	1.0	17	2.35	7.5
MMBZ15VAL	15A	12	50	14.25	15	15.75	1.0	21	1.9	12.3
MMBZ18VAL	18A	14.5	50	17.10	18	18.90	1.0	25	1.6	15.3
MMBZ20VAL	20A	17	50	19.00	20	21.00	1.0	28	1.4	17.2
MMBZ27VAL	27A	22	50	25.65	27	28.35	1.0	40	1.0	24.3
MMBZ33VAL	33A	26	50	31.35	33	34.65	1.0	46	0.87	30.4

Note2: VBR measured at pulse test current IT at an ambient temperature of 25°C

## Dual Common Anode Zener Diode

TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified

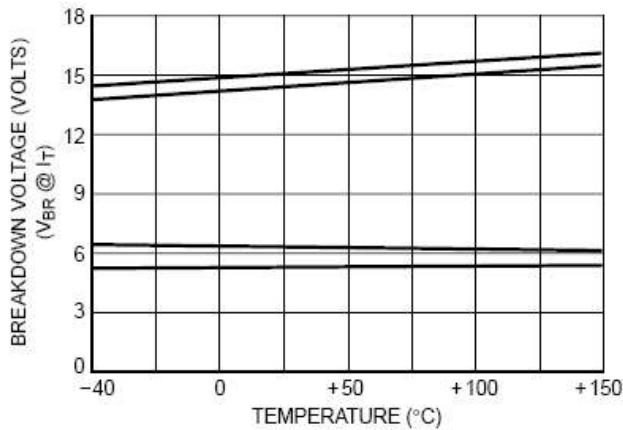


Figure 1. Typical Breakdown Voltage versus Temperature

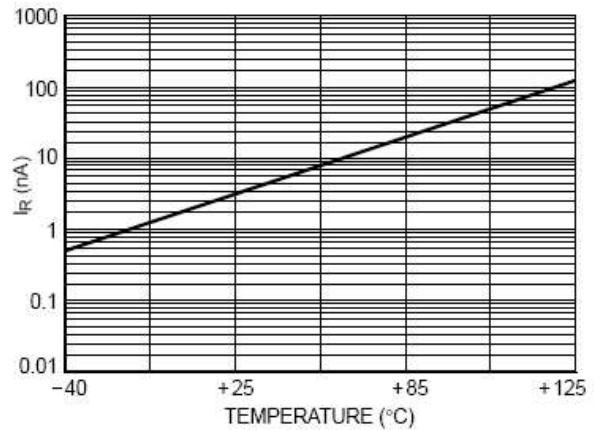


Figure 2. Typical Leakage Current versus Temperature

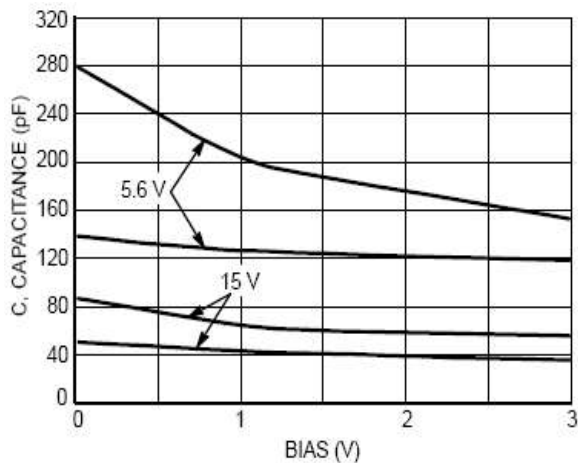


Figure 3. Typical Capacitance versus Bias Voltage

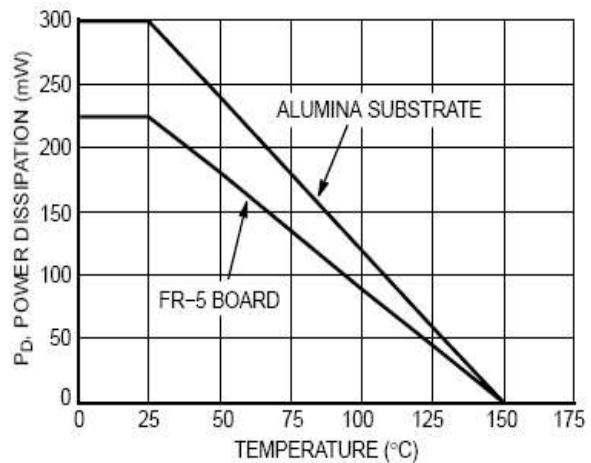


Figure 4. Steady State Power Derating Curve

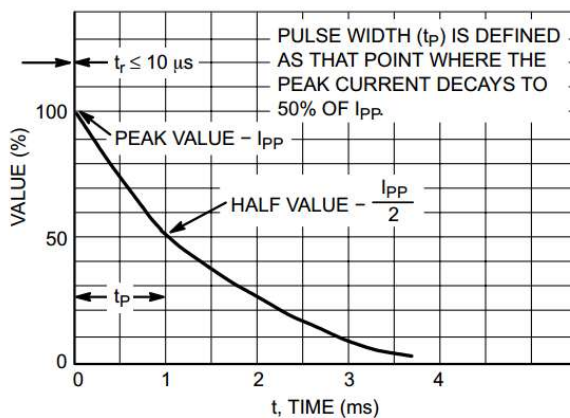


Figure 5. Pulse Waveform

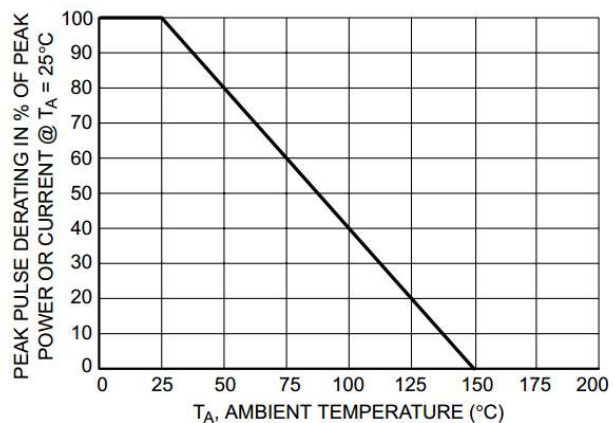


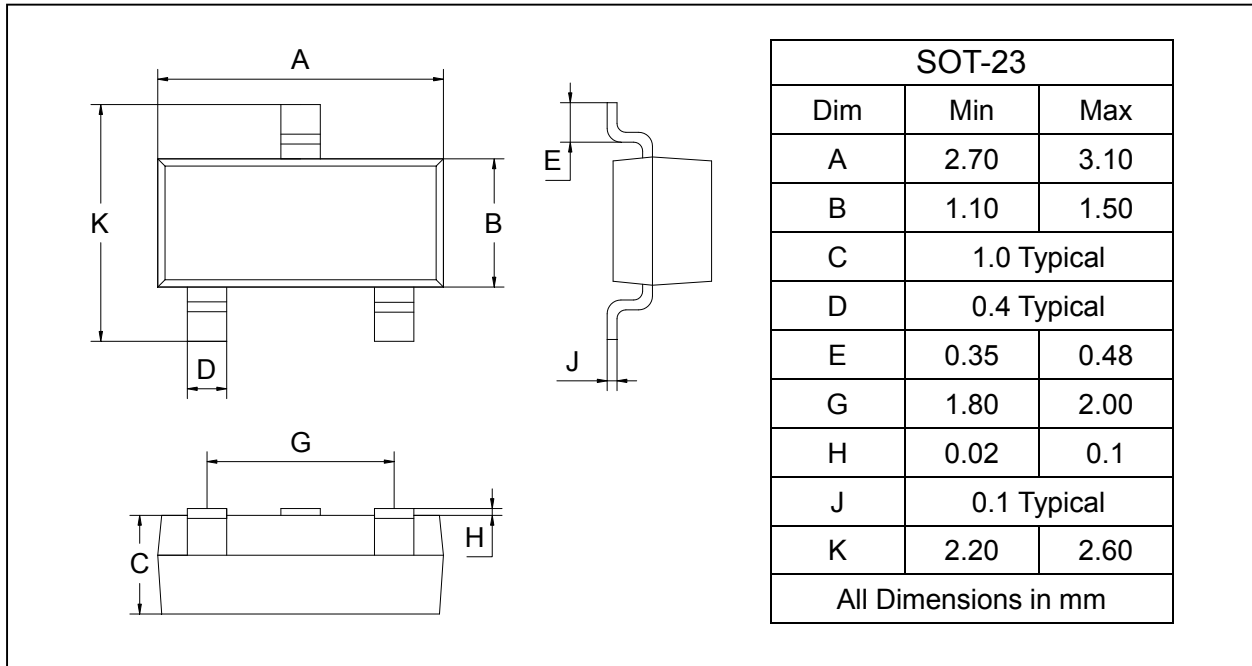
Figure 6. Pulse Derating Curve

## Dual Common Anode Zener Diode

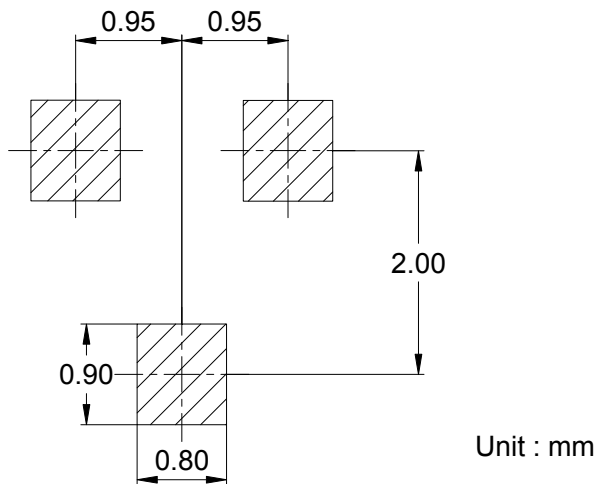
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
MMBZ5V6AL-MMBZ33VAL	SOT-23	3000/Tape&Reel