

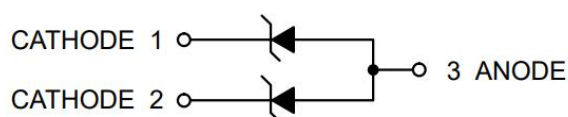
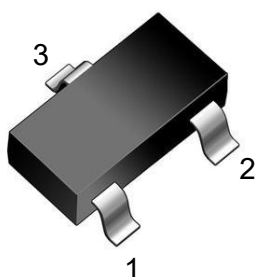
Features

- Low profile package
- Ideal for automated placement
- Low Zener Impedance
- Power Dissipation of 300mW
- High Stability and High Reliability
- Qualified to AEC-Q101 Standards for High Reliability
- RoHS Compliant

Mechanica Characteristics

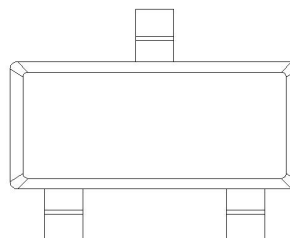
- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Tape Reel :3000pcs

Appearance & Symbo



Applications

- Surge protection
- Voltage stabilization
- Polarity Protection



5A6 = Marking Code

Absolute Maximum Ratings (T=25°C, RH=45%-75%, unless otherwise specified)

Parameters		Symbol	Value	Unit
Peak Power Dissipation @ 1.0 ms (Note 1) @ TL ≤ 25°C	MMBZ5V6A	P _{pk}	24	W
			40	
Total Power Dissipation on FR-5 Board (Note 2)	@ TA = 25°C	P _D	225	mW
Total Power Dissipation on Alumina Substrate (Note 3)			300	
Thermal Resistance Junction to Ambient on FR-5 Board (Note 2)		R _{θJA}	556	°C/W
Thermal Resistance Junction to Ambient on Alumina Substrate (Note 3)			417	
Junction temperature		T _J	-55 to +150	°C
Storage Temperature		T _{STG}	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)		T _L	260	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Non-repetitive current pulse per Figure 6 and derate above $T_A = 25^\circ\text{C}$ per Figure 7.

2. FR-5 = 1.0 x 0.75 x 0.62 in.

3. Alumina = 0.4 x 0.3 x 0.024 in, 99.5% alumina.

*Other voltages may be available upon request

Typical Characteristics

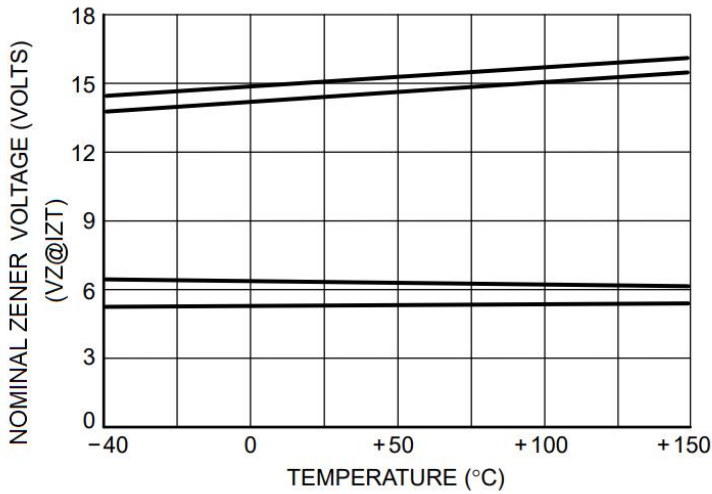


Figure 1. Nominal Zener Voltage versus Temperature

(Upper curve for each voltage is bidirectional mode, lower curve is unidirectional mode)

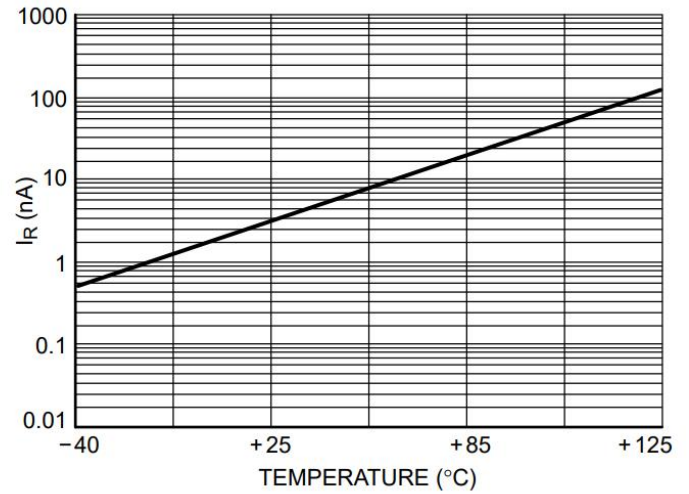


Figure 2. Typical Leakage Current versus Temperature

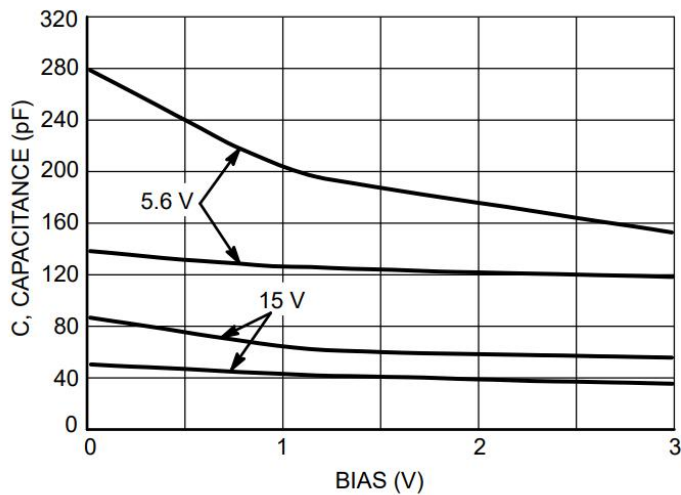


Figure 3. Typical Capacitance versus Bias Voltage

(Upper curve for each voltage is unidirectional mode, lower curve is bidirectional mode)

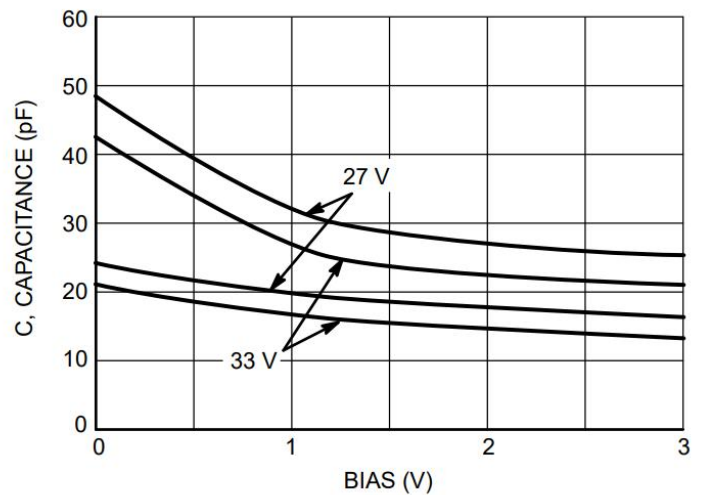


Figure 4. Typical Capacitance versus Bias Voltage

(Upper curve for each voltage is unidirectional mode, lower curve is bidirectional mode)

Typical Characteristics

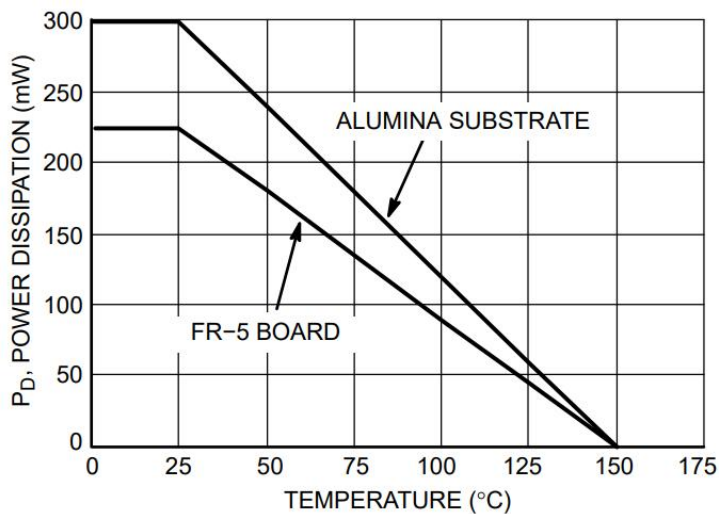


Figure 5. Steady State Power Derating Curve

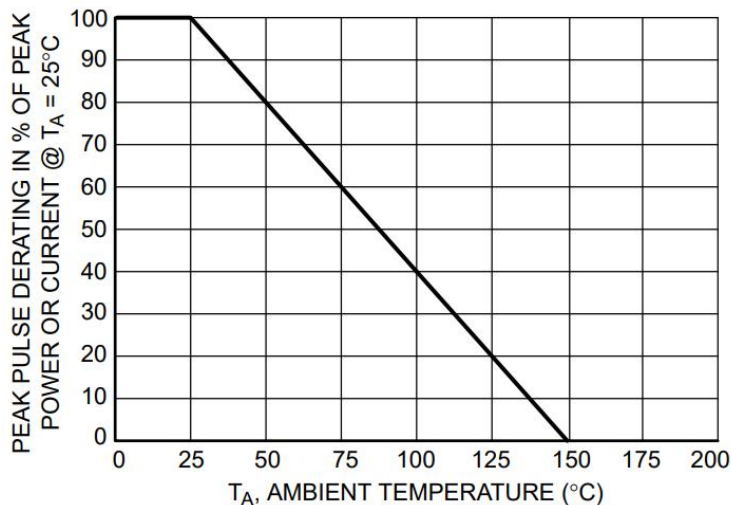


Figure 6. Pulse Derating Curve

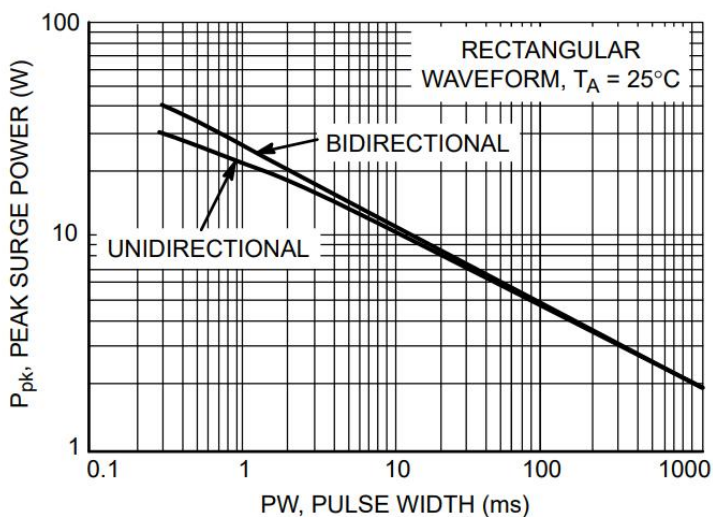


Figure 7. Maximum Non-repetitive Surge Power, P_{pk} versus PW

Power is defined as $V_{RSM} \times I_Z(pk)$ where V_{RSM} is the clamping voltage at $I_Z(pk)$.

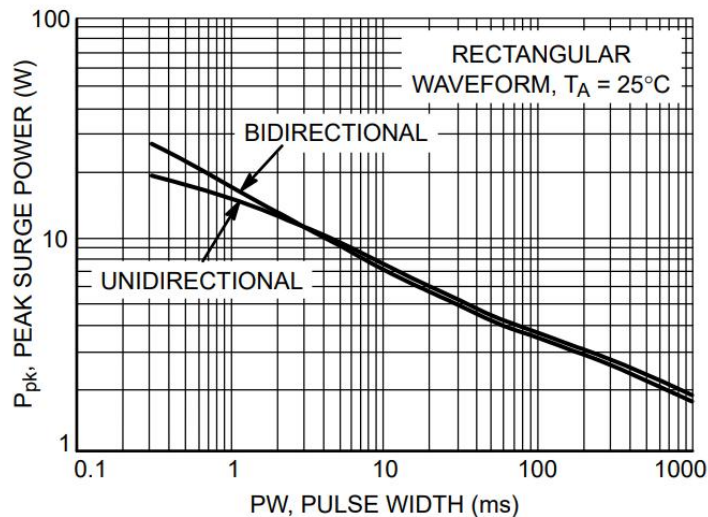
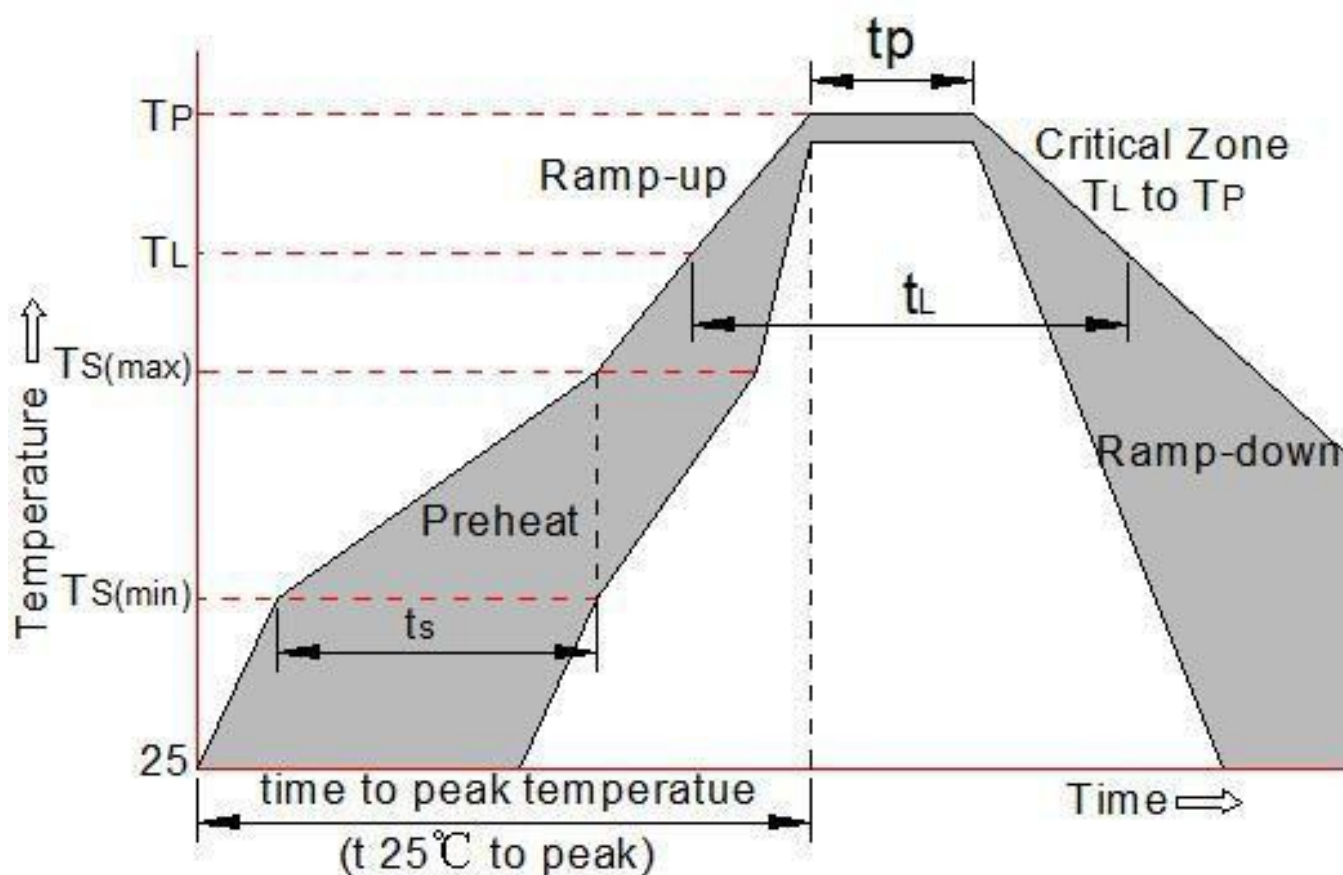


Figure 8. Maximum Non-repetitive Surge Power, $P_{pk(NOM)}$ versus PW

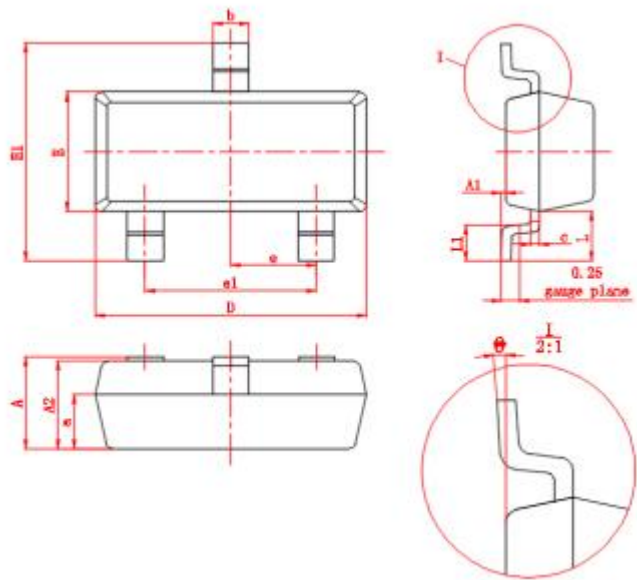
Power is defined as $V_Z(NOM) \times I_Z(pk)$ where $V_Z(NOM)$ is the nominal Zener voltage measured at the low test current used for voltage classification.

Soldering parameters

Reflow Condition		Pb-Free assembly see as below
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

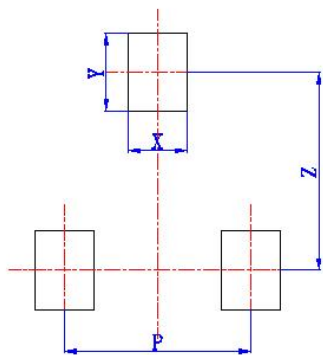


Package mechanical data



Symbol	Dimension in Millimeters	
	min	max
A	0.9	1.15
A1	0	0.1
A2	0.9	1.05
a	(0.6)	
D	2.8	3.0
E	1.2	1.4
E1	2.25	2.55
e	(0.95)	
e1	1.8	2.0
b	0.3	0.5
c	0.08	0.15
L	(0.55)	
L1	0.3	0.5
θ	0°	8°

Suggested Land Pattern



Symbol	Dimension in Millimeters
	typ
X	(0.6)
Y	(0.8)
Z	(2.02)
P	(1.9)