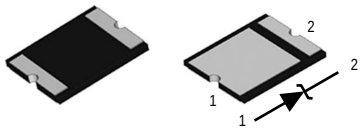
Zowie Technology Corporation

Transient Voltage Suppressors
AU7.0AZP Series

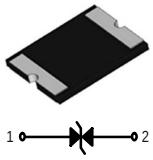
FEATURES

* T_J = 175°C capability suitable for high reliability and automotive requirement
* High current capability
* Low forward voltage drop
* Low reverse current
* Low thermal resistance
* Excellent high temperature stability
* Low power loss and high efficiency
* High forward surge capability
* Meets ISO7637-2 surge specification
* Meets ISO16750-2 surge specification
* Meets JASO D001 surge specification
* Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C
* AEC-Q101 qualified (processing)

A4PS-DT



A4PS-DT1



APPLICATION

* High peak power
* High-temperature
* Clamping diode
* Load switching and lighting

Primary Characteristics	
V_{RWM}	24V to 36V
V_{BR}	26.7 to 44.2V
P_{PPM} (10 x 1000uS)	7000W
P_D	5W
Diode variation	Single and Dual

PACKING

* 3,000 pieces per 13" (330mm ± 2mm) reel
* 1 reels per box
* 5 boxes per carton

Maximum Ratings (T_A = 25°C unless otherwise specified.)

Parameter		Symbol	Value	Units
Peak pulse power dissipation	10/1000 μs waveform	P_{PPM}	7000	W
Power dissipation on infinite heatsink at T_C = 25°C		P_D	5.0	W
Operating junction and storage temperature range		T_J, T_{STG}	-55 to +175	°C

Electrical characteristics (T_A = 25°C unless otherwise specified.)

PART NUMBER		Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V)			Max. Clamping Voltage at I_{PP} V_C (V)	Max. Peak Pulse Current at 10/1000 μS Waveform I_{PP} (A)	Max. Leakage at V_{RWM} T_J = 175°C I_R (μA)	Max. Reverse Leakage at V_{RWM} I_R (μA)
Uni-polar	Bi-polar		Min. (V)	Max. (V)	I_T (mA)				
AU7.0AZP24AH	AU7.0AZP24CAH	24	26.7	29.5	5	38.9	180	150	10
AU7.0AZP28AH	AU7.0AZP28CAH	28	31.1	34.4	5	45.4	154	150	10
AU7.0AZP30AH	AU7.0AZP30CAH	30	33.3	36.8	5	48.4	145	150	10
AU7.0AZP33AH	AU7.0AZP33CAH	33	36.7	40.6	5	53.3	131	150	10
AU7.0AZP36AH	AU7.0AZP36CAH	36	40.0	44.2	5	58.1	120	150	10

NOTES : Preliminary specification

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RATINGS AND CHARACTERISTIC CURVES

FIG. 1- POWER DERATING CURVE

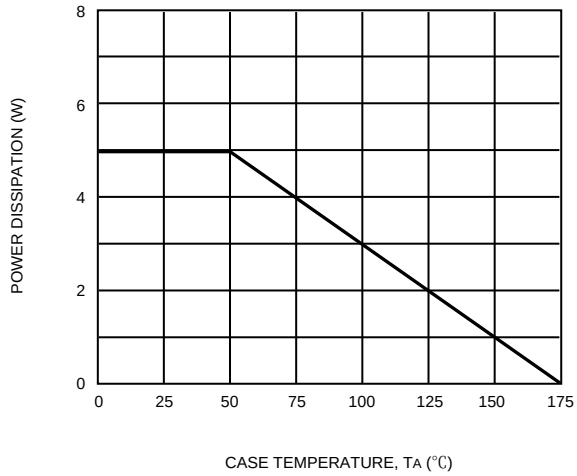


FIG. 2- LOAD DUMP POWER CHARACTENISTICS
(10 ms EXPONENTIAL WAVEFORM)

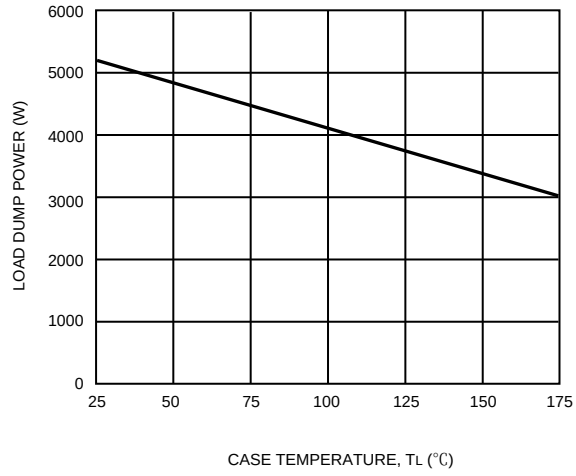


FIG. 3 - PULSE WAVEFORM

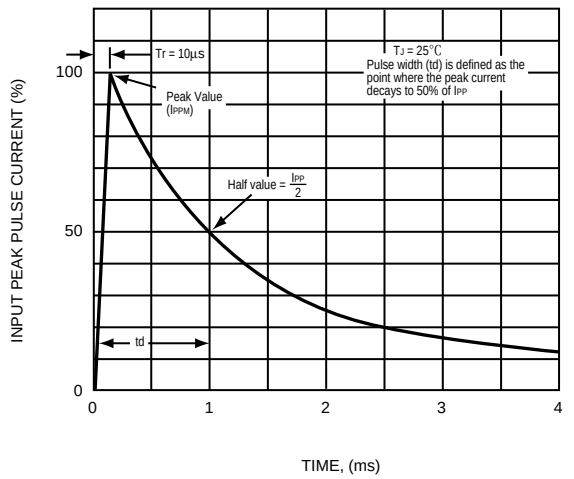
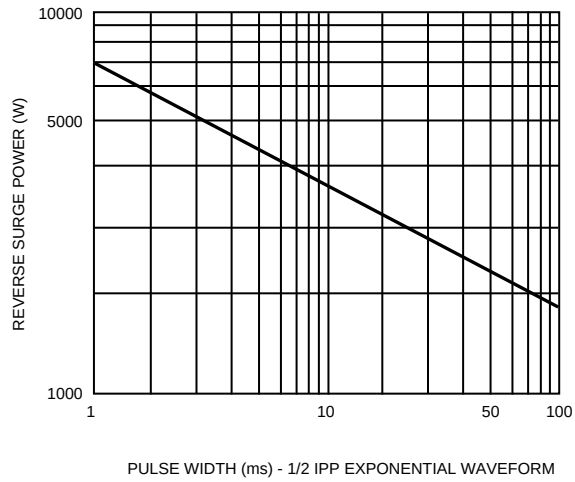


FIG. 4 - REVERSE POWER CAPABILITY



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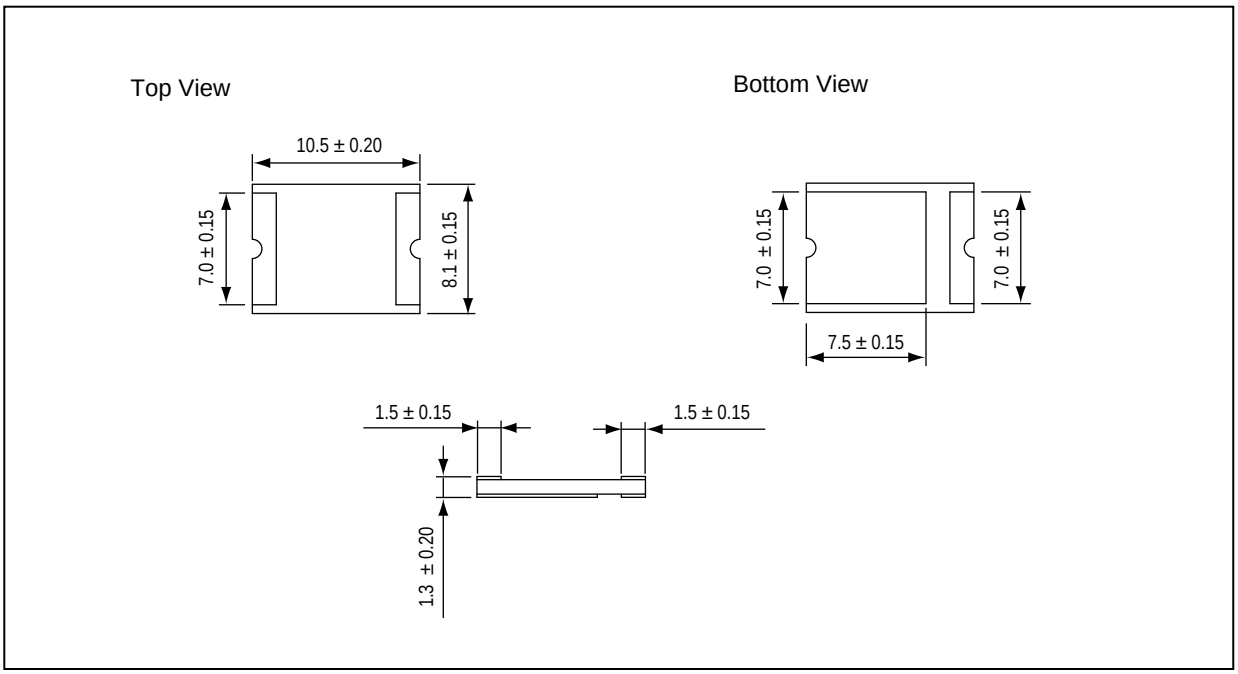
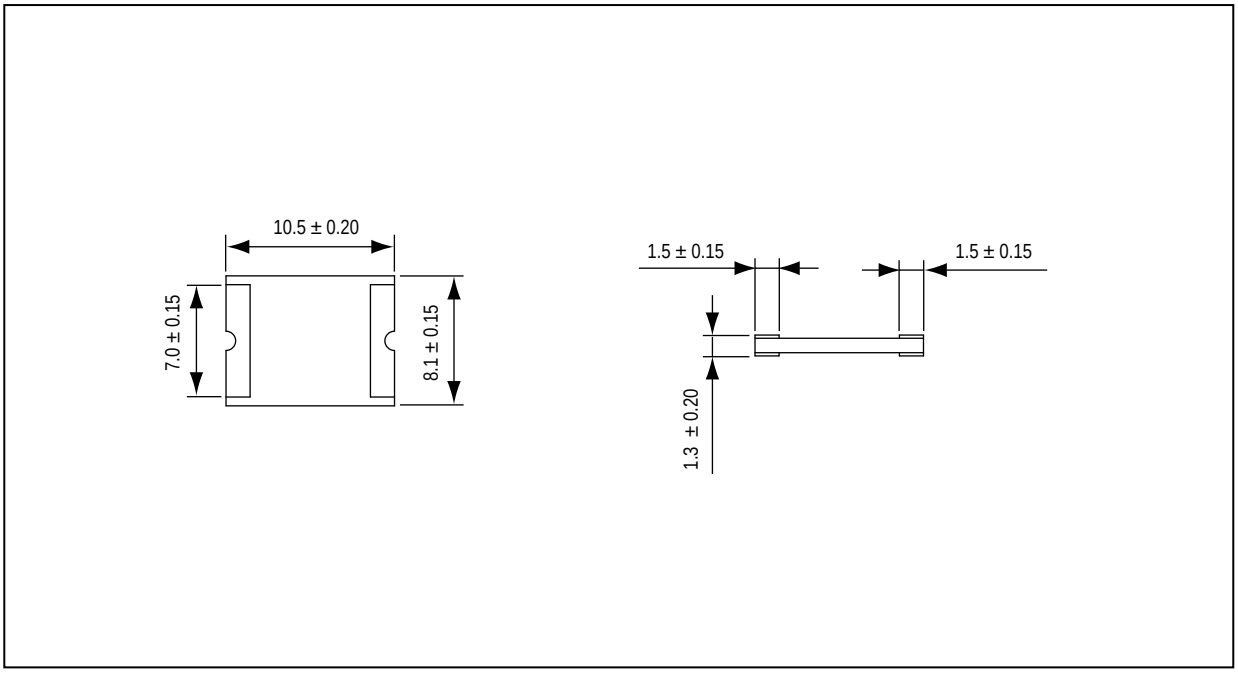
• PACKAGE OUTLINE DIMENSIONS

A4PS-DT Unit : mm



A4PS-DT1 Unit : mm



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- DESIGN AND MOUNTING FOR SURFACE MOUNT DIODES

1. In designing steps regarding PCB component layout, do not put surface mount device diodes near high voltage resistors etc, which may generate heat to diode, nor in high-density board. when designing the PCB, implement protection for the surface mount device diode from electrical damage like surge, heating source, magnetic and so on.

2. In any cases do not store diodes in the following conditions or places:
   2.1 When transporting diodes, keep vibration to a minimum otherwise body of diode may be broken. Diode die may then be destroyed by electrostatics.
   2.2 High temperature or high humidity environment.
   2.3 Where corrosive gas or liquid is present.
   2.4 Where mechanical stress or vibration exists.
   2.5 Where electrosiatic charges are possible.

3. When using the ZOWIE Super chip diodes on assembly operation. Solder paste printing process is recommended and followed by pick and place machine. Since it was designed successfully to achieve extremely thin size, so the parameters of height and location should be adjusted on pick and place machine to avoid missing of parts during operation.

4. As ZOWIE SuperChip series are the surface mount devices with the exceptionally tiny package, whose package thickness is relatively much thinner than that of the general surface mounmt device, so please appropriately set the parameters for the nozzle height as well as the device thickness of the pick and place machine, which would diminish mostly the very normal stress applied upon the device by the nozzle so as to keep the yield level while implementing th mounting operation.

5. The following is a schematic drawing of recommended pick-up height of the SMT parts, the bottom of part above PCB is 0.3mm. If the parts are rejected seriously, please adjust to reduce the height appropriately.