

Transient Voltage Suppressors

AU7.0AZP Series



● FEATURES

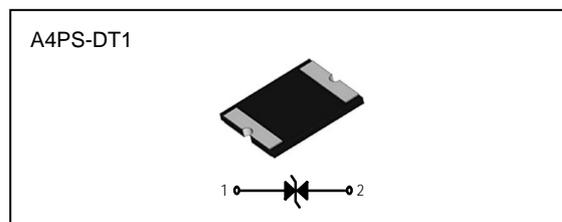
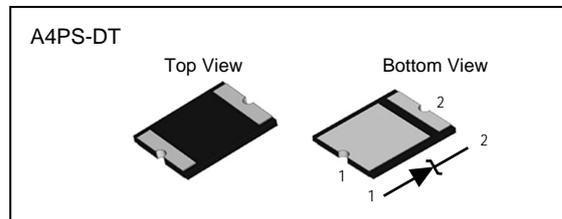
- * $T_J = 175^\circ\text{C}$ capability suitable for high reliability and automotive requirement
- * High current capability
- * Low forward voltage drop
- * Low reverse current
- * Low thermal resistance
- * Excellent high temperature stability
- * Low power loss and high efficiency
- * High forward 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)

● APPLICATION

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

● PACKING

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



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

Maximum Ratings ($T_A = 25$ unless otherwise specified.)

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

Electrical characteristics ($T_A = 25$ 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 μ S Waveform I_{PP} (A) | Max. Leakage at V_{RWM} $T_J = 175$ I_R (μ A) | Max. Reverse Leakage at V_{RWM} I_R (μ A) |
|--------------|---------------|---------------------------------------|-----------------------------------|----------|------------|--|--|--|--|
| 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

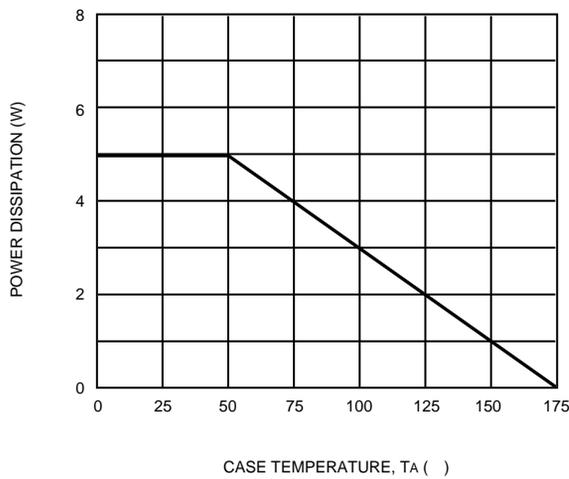


FIG. 2- LOAD DUMP POWER CHARACTERISTICS
(10 ms EXPONENTIAL WAVEFORM)

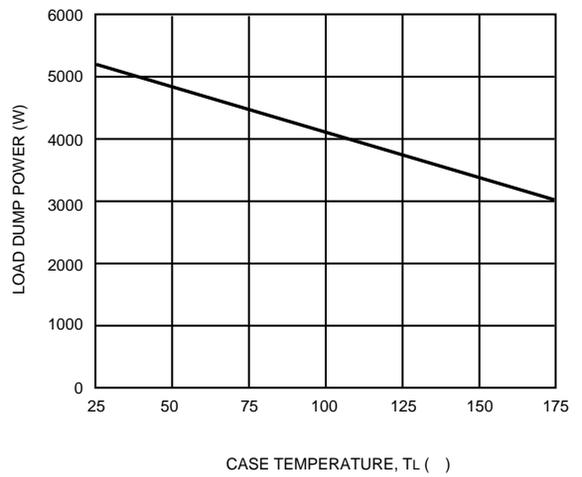


FIG. 3 - PULSE WAVEFORM

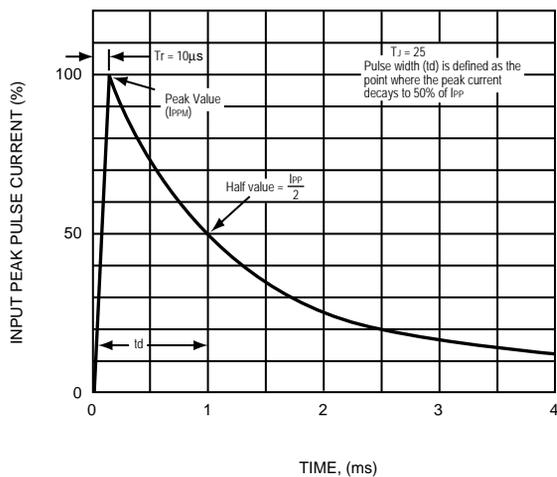
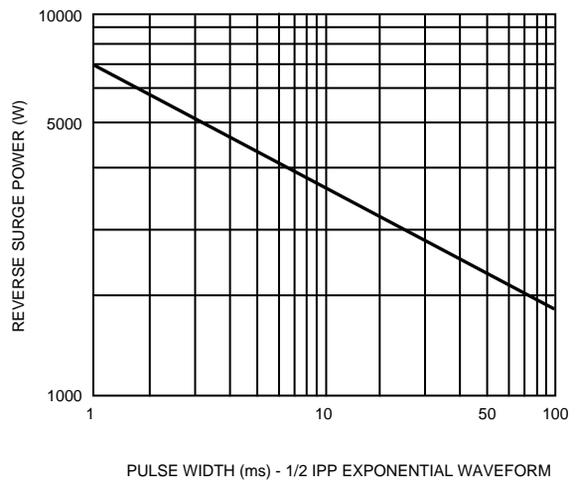


FIG. 4 - REVERSE POWER CAPABILITY

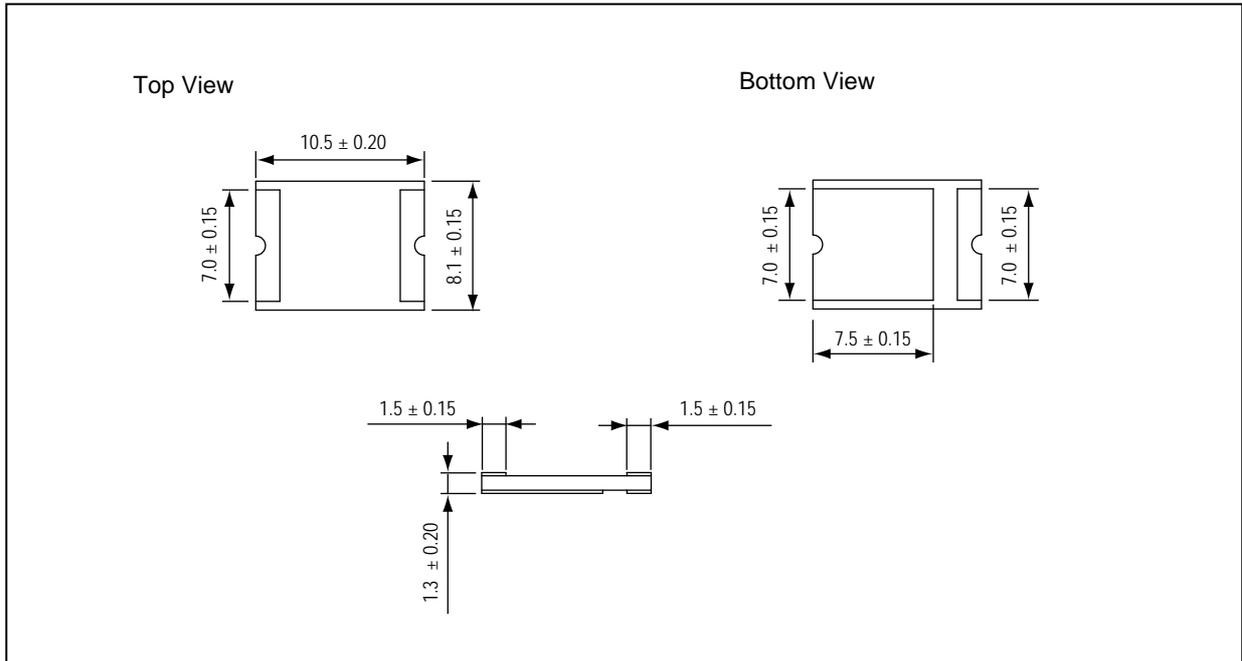


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● PACKAGE OUTLINE DIMENSIONS

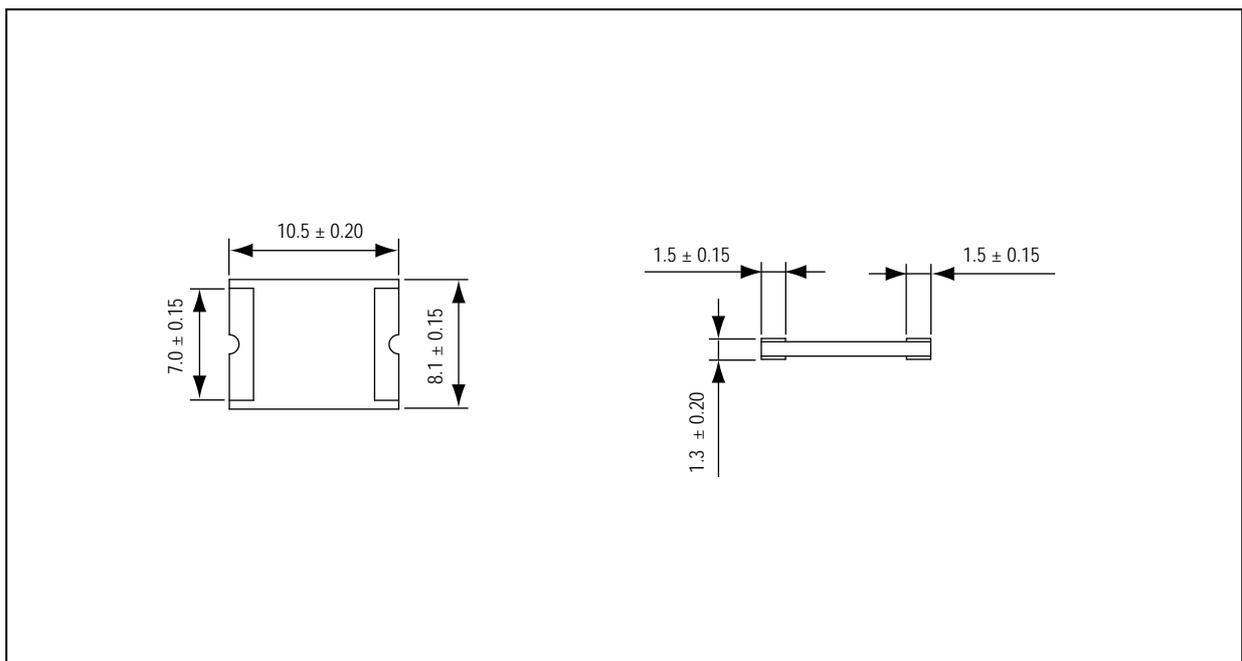
A4PS-DT

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 electrostatic 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 mount 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 the 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.

