



# STPSA92

## SMALL SIGNAL PNP TRANSISTOR

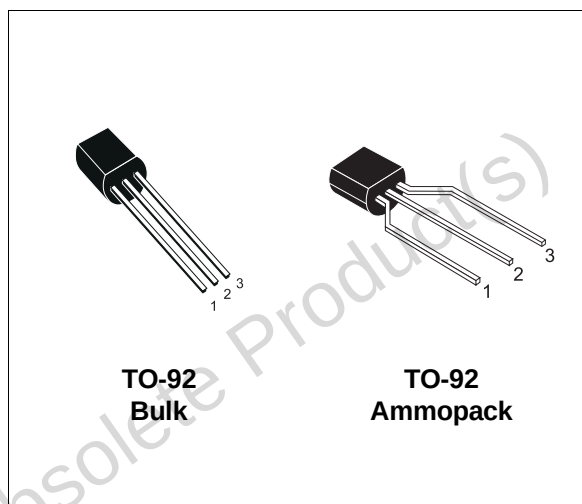
PRELIMINARY DATA

| Ordering Code | Marking | Package / Shipment |
|---------------|---------|--------------------|
| STPSA92       | PSA92   | TO-92 / Bulk       |
| STPSA92-AP    | PSA92   | TO-92 / Ammopack   |

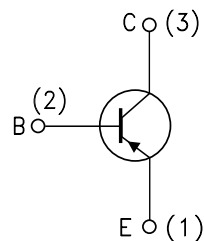
- SILICON EPITAXIAL PLANAR PNP HIGH VOLTAGE TRANSISTOR
- TO-92 PACKAGE SUITABLE FOR THROUGH-HOLE PCB ASSEMBLY
- THE NPN COMPLEMENTARY TYPE IS STPSA42

### APPLICATIONS

- VIDEO AMPLIFIER CIRCUITS (RGB CATHODE CURRENT CONTROL)
- TELEPHONE WIRELINE INTERFACE (HOOK SWITCHES, DIALER CIRCUITS)



### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter                               | Value      | Unit |
|-----------|-----------------------------------------|------------|------|
| $V_{CBO}$ | Collector-Base Voltage ( $I_E = 0$ )    | -300       | V    |
| $V_{CEO}$ | Collector-Emitter Voltage ( $I_B = 0$ ) | -300       | V    |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_C = 0$ )      | -5         | V    |
| $I_C$     | Collector Current                       | -0.5       | A    |
| $I_{CM}$  | Collector Peak Current ( $t_p < 5$ ms)  | -0.6       | A    |
| $P_{tot}$ | Total Dissipation at $T_C = 25$ °C      | 625        | mW   |
| $T_{stg}$ | Storage Temperature                     | -65 to 150 | °C   |
| $T_j$     | Max. Operating Junction Temperature     | 150        | °C   |

## STPSA92

### THERMAL DATA

|                  |                                     |     |      |                      |
|------------------|-------------------------------------|-----|------|----------------------|
| $R_{thj-amb}$ •  | Thermal Resistance Junction-Ambient | Max | 200  | $^{\circ}\text{C/W}$ |
| $R_{thj-case}$ • | Thermal Resistance Junction-Case    | Max | 83.3 | $^{\circ}\text{C/W}$ |

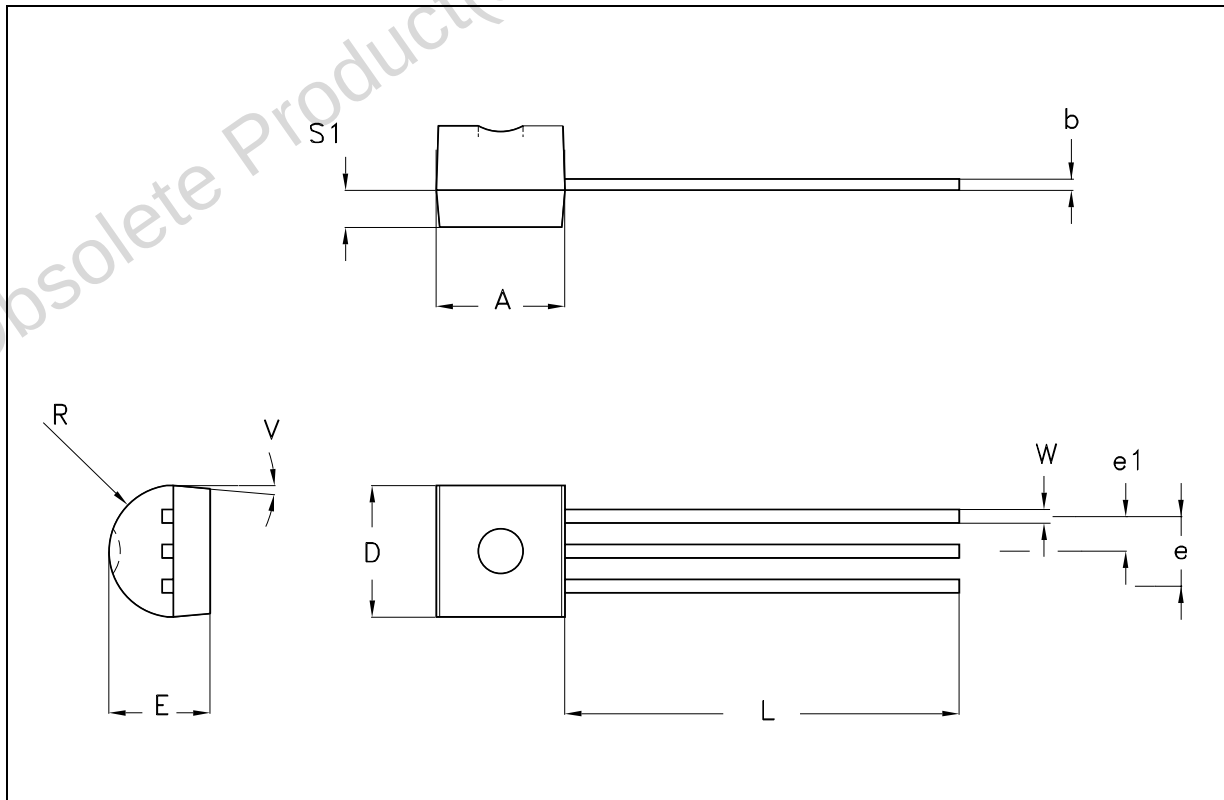
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

| Symbol          | Parameter                                         | Test Conditions                                                                                                                                | Min.           | Typ. | Max. | Unit |
|-----------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|------|------|
| $I_{CBO}$       | Collector Cut-off Current ( $I_E = 0$ )           | $V_{CB} = -200\text{ V}$                                                                                                                       |                |      | -100 | nA   |
| $V_{(BR)CBO}$   | Collector-Base Breakdown Voltage ( $I_E = 0$ )    | $I_C = -100\text{ }\mu\text{A}$                                                                                                                | -300           |      |      | V    |
| $V_{(BR)CEO}^*$ | Collector-Emitter Breakdown Voltage ( $I_B = 0$ ) | $I_C = -1\text{ mA}$                                                                                                                           | -300           |      |      | V    |
| $V_{(BR)EBO}$   | Emitter-Base Breakdown Voltage ( $I_C = 0$ )      | $I_E = -100\text{ }\mu\text{A}$                                                                                                                | -5             |      |      | V    |
| $V_{CE(sat)}^*$ | Collector-Emitter Saturation Voltage              | $I_C = -20\text{ mA}$ $I_B = -2\text{ mA}$                                                                                                     |                |      | -0.5 | V    |
| $V_{BE(sat)}^*$ | Base-Emitter Saturation Voltage                   | $I_C = -20\text{ mA}$ $I_B = -2\text{ mA}$                                                                                                     |                |      | -0.9 | V    |
| $h_{FE}^*$      | DC Current Gain                                   | $I_C = -1\text{ mA}$ $V_{CE} = -10\text{ V}$<br>$I_C = -10\text{ mA}$ $V_{CE} = -10\text{ V}$<br>$I_C = -30\text{ mA}$ $V_{CE} = -10\text{ V}$ | 25<br>40<br>40 |      |      |      |
| $f_T$           | Transition Frequency                              | $I_C = -10\text{ mA}$ $V_{CE} = -20\text{ V}$ $f = 50\text{ MHz}$                                                                              | 50             |      |      | MHz  |
| $C_{CEO}$       | Collector-Emitter Capacitance                     | $V_{CE} = -20\text{ V}$ $f = 1\text{ MHz}$                                                                                                     | 50             |      |      | pF   |

\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , duty cycle  $\leq 1.5\%$

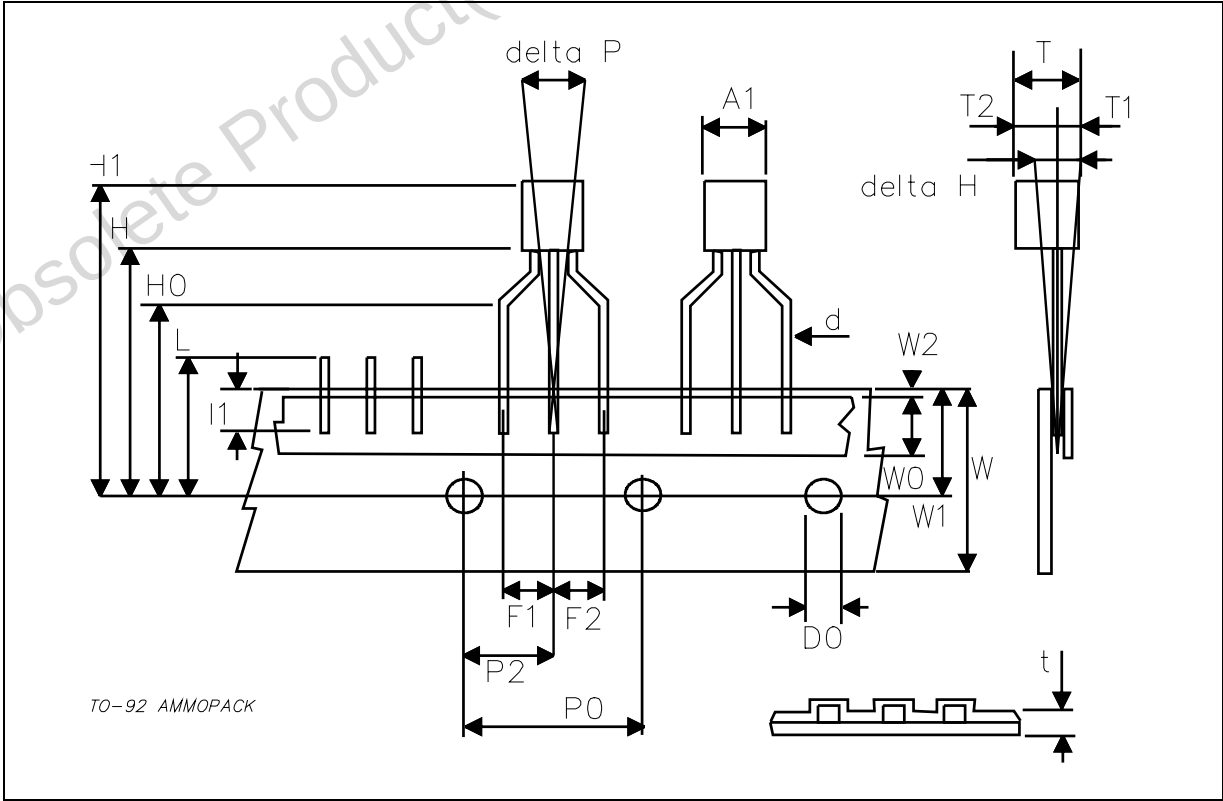
## TO-92 MECHANICAL DATA

| DIM. | mm       |      |          | inch     |      |          |
|------|----------|------|----------|----------|------|----------|
|      | MIN.     | TYP. | MAX.     | MIN.     | TYP. | MAX.     |
| A    | 4.32     |      | 4.95     | 0.170    |      | 0.195    |
| b    | 0.36     |      | 0.51     | 0.014    |      | 0.020    |
| D    | 4.45     |      | 4.95     | 0.175    |      | 0.194    |
| E    | 3.30     |      | 3.94     | 0.130    |      | 0.155    |
| e    | 2.41     |      | 2.67     | 0.095    |      | 0.105    |
| e1   | 1.14     |      | 1.40     | 0.045    |      | 0.055    |
| L    | 12.70    |      | 15.49    | 0.500    |      | 0.609    |
| R    | 2.16     |      | 2.41     | 0.085    |      | 0.094    |
| S1   | 1.14     |      | 1.52     | 0.045    |      | 0.059    |
| W    | 0.41     |      | 0.56     | 0.016    |      | 0.022    |
| V    | 4 degree |      | 6 degree | 4 degree |      | 6 degree |



TO-92 AMMOPACK SHIPMENT (Suffix"-AP") MECHANICAL DATA

| DIM.    | mm    |       |       | inch   |       |       |
|---------|-------|-------|-------|--------|-------|-------|
|         | MIN.  | TYP.  | MAX.  | MIN.   | TYP.  | MAX.  |
| A1      |       |       | 4.80  |        |       | 0.189 |
| T       |       |       | 3.80  |        |       | 0.150 |
| T1      |       |       | 1.60  |        |       | 0.063 |
| T2      |       |       | 2.30  |        |       | 0.091 |
| d       |       |       | 0.48  |        |       | 0.019 |
| P0      | 12.50 | 12.70 | 12.90 | 0.492  | 0.500 | 0.508 |
| P2      | 5.65  | 6.35  | 7.05  | 0.222  | 0.250 | 0.278 |
| F1,F2   | 2.44  | 2.54  | 2.94  | 0.096  | 0.100 | 0.116 |
| delta H | -2.00 |       | 2.00  | -0.079 |       | 0.079 |
| W       | 17.50 | 18.00 | 19.00 | 0.689  | 0.709 | 0.748 |
| W0      | 5.70  | 6.00  | 6.30  | 0.224  | 0.236 | 0.248 |
| W1      | 8.50  | 9.00  | 9.25  | 0.335  | 0.354 | 0.364 |
| W2      |       |       | 0.50  |        |       | 0.020 |
| H       | 18.50 |       | 20.50 | 0.728  |       | 0.807 |
| H0      | 15.50 | 16.00 | 16.50 | 0.610  | 0.630 | 0.650 |
| H1      |       |       | 25.00 |        |       | 0.984 |
| D0      | 3.80  | 4.00  | 4.20  | 0.150  | 0.157 | 0.165 |
| t       |       |       | 0.90  |        |       | 0.035 |
| L       |       |       | 11.00 |        |       | 0.433 |
| I1      | 3.00  |       |       | 0.118  |       |       |
| delta P | -1.00 |       | 1.00  | -0.039 |       | 0.039 |



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