



## TO-92S Plastic-Encapsulate Transistors

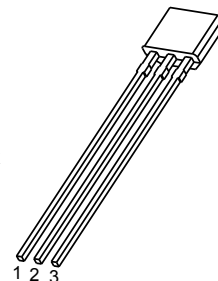
### STC128 TRANSISTOR (NPN)

#### FEATURES

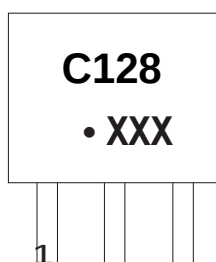
- General Purpose Switching Application

#### TO – 92S

1. EMITTER
2. COLLECTOR
3. BASE

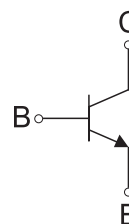


#### MARKING



C128 =Device code  
Solid dot = Green molding compound device,  
if none, the normal device  
XXX=Code

#### Equivalent Circuit



#### ORDERING INFORMATION

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| STC128      | TO-92S  | Bulk           | 1000pcs/Bag   |
| STC128-TA   | TO-92S  | Tape           | 3000pcs/Box   |

#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                        | Value    | Unit                 |
|-----------------|--------------------------------------------------|----------|----------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | 20       | V                    |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 15       | V                    |
| $V_{EBO}$       | Emitter-Base Voltage                             | 6.5      | V                    |
| $I_C$           | Collector Current                                | 1        | A                    |
| $P_C$           | Collector Power Dissipation                      | 400      | mW                   |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 312      | $^{\circ}\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | $^{\circ}\text{C}$   |

---

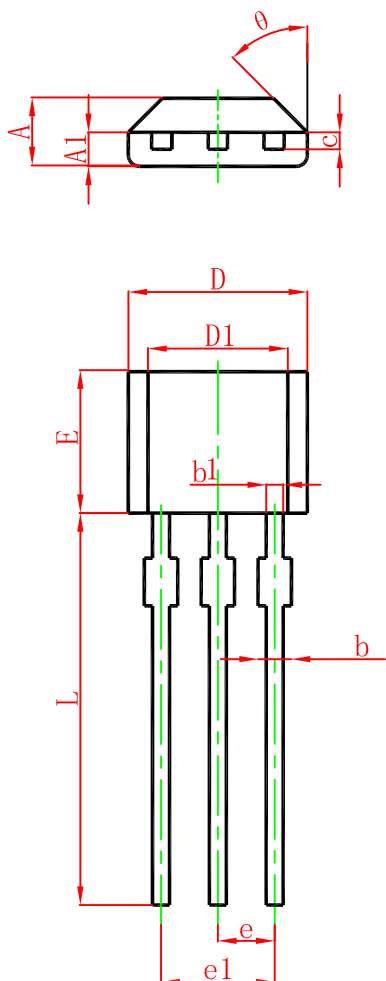
## ELECTRICAL CHARACTERISTICS

---

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

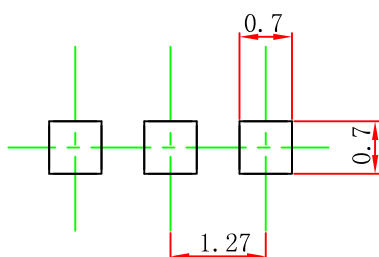
| Parameter                            | Symbol        | Test conditions                           | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|-------------------------------------------|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=0.05\text{mA}, I_E=0$                | 20  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                   | 15  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=0.05\text{mA}, I_C=0$                | 6.5 |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=20\text{V}, I_E=0$                |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=6\text{V}, I_C=0$                 |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=1\text{V}, I_C=100\text{mA}$      | 150 |     |     |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$       |     |     | 0.3 | V             |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ |     | 5   |     | pF            |
| Transition frequency                 | $f_T$         | $V_{CE}=5\text{V}, I_C=50\text{mA}$       |     | 260 |     | MHz           |

## TO-92S Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 1.420                     | 1.620  | 0.056                | 0.064 |
| A1     | 0.660                     | 0.860  | 0.026                | 0.034 |
| b      | 0.330                     | 0.480  | 0.013                | 0.019 |
| b1     | 0.400                     | 0.510  | 0.016                | 0.020 |
| c      | 0.330                     | 0.510  | 0.013                | 0.020 |
| D      | 3.900                     | 4.100  | 0.154                | 0.161 |
| D1     | 2.280                     | 2.680  | 0.090                | 0.106 |
| E      | 3.050                     | 3.250  | 0.120                | 0.128 |
| e      | 1.270 TYP.                |        | 0.050 TYP.           |       |
| e1     | 2.440                     | 2.640  | 0.096                | 0.104 |
| L      | 15.100                    | 15.500 | 0.594                | 0.610 |
| θ      | 45° TYP.                  |        | 45° TYP.             |       |

## TO-92S Suggested Pad Layout



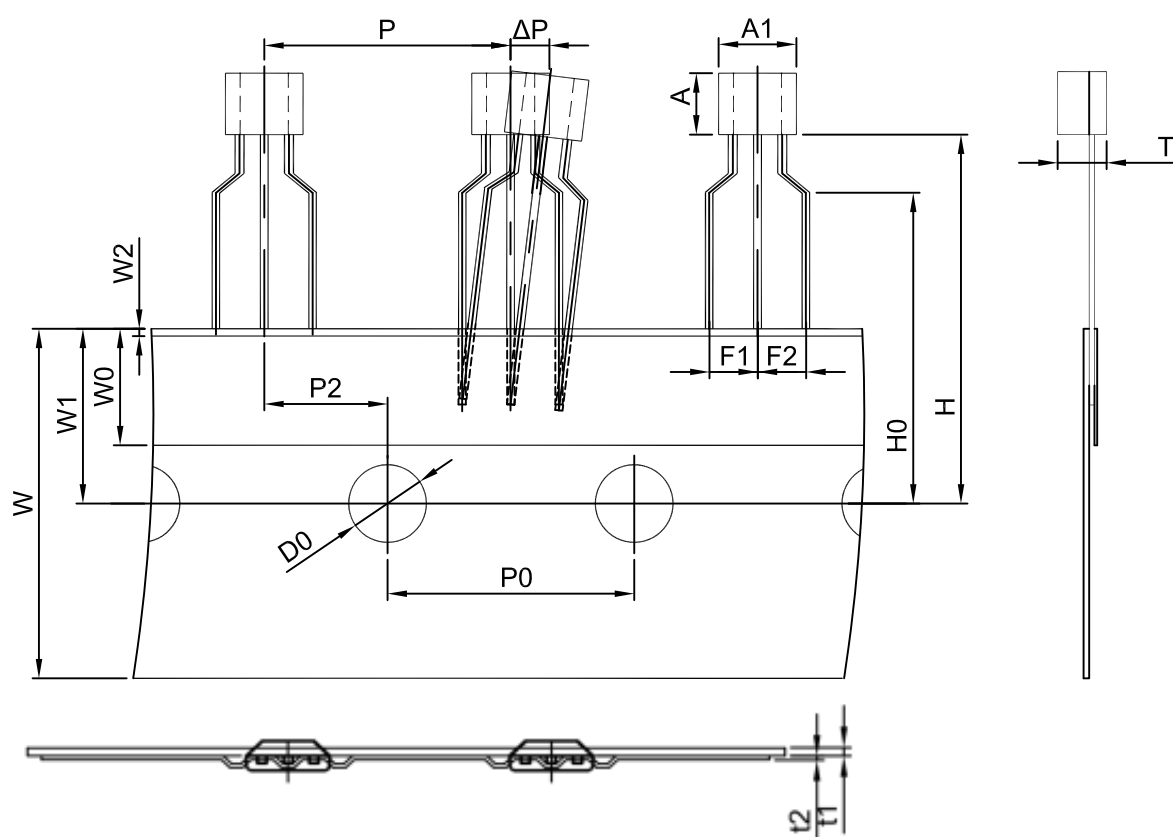
Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

### NOTICE

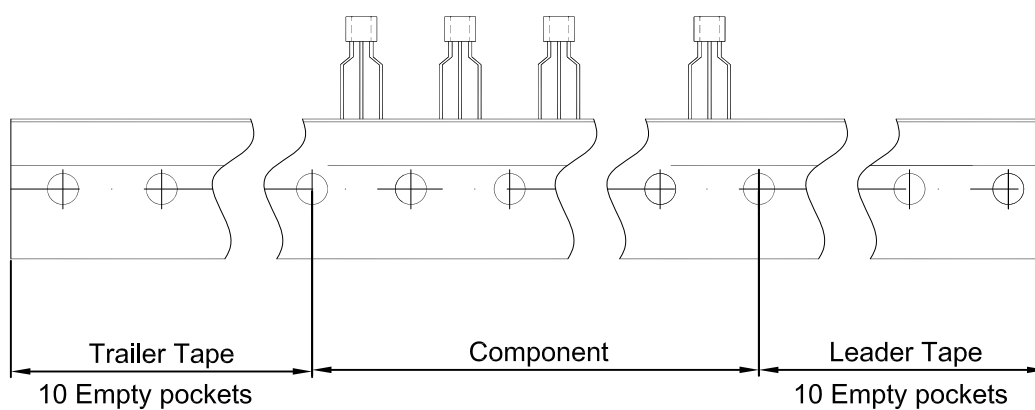
JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

## TO-92S PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter

| A1  | A    | T    | P    | P0   | P2   | F1  | F2  | W    |
|-----|------|------|------|------|------|-----|-----|------|
| 4.0 | 3.15 | 1.52 | 12.7 | 12.7 | 6.35 | 2.5 | 2.5 | 18.0 |
| W0  | W1   | W2   | H    | H0   | D0   | t1  | t2  | ΔP   |
| 6.0 | 9.0  | 1.0  | 19.0 | 16.0 | 4.0  | 0.4 | 0.2 | 0    |



| Package | Box      | Box Size(mm) | Carton     | Carton Size(mm) |
|---------|----------|--------------|------------|-----------------|
| TO-92S  | 3000 pcs | 333×162×43   | 30,000 pcs | 350×340×250     |