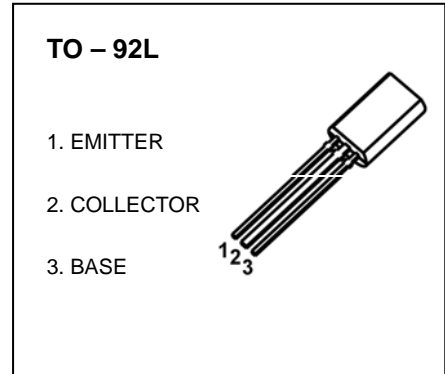


## TO-92L Plastic-Encapsulate Transistors

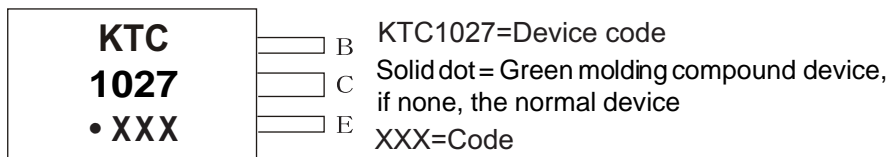
### KTC1027 TRANSISTOR (NPN)

#### FEATURES

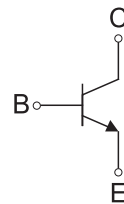
- Complementary to KTA1023
- High Voltage Applications



#### MARKING



#### Equivalent Circuit



#### ORDERING INFORMATION

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| KTC1027     | TO-92L  | Bulk           | 500pcs/Bag    |
| KTC1027-TA  | TO-92L  | Tape           | 2000pcs/Box   |

#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

| Symbol           | Parameter                                   | Value    | Unit |
|------------------|---|----------|------|
| V <sub>CBO</sub> | Collector-Base Voltage                      | 120      | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage                   | 120      | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage                        | 5        | V    |
| I <sub>C</sub>   | Collector Current                           | 0.8      | A    |
| P <sub>C</sub>   | Collector Power Dissipation                 | 1        | W    |
| R <sub>θJA</sub> | Thermal Resistance From Junction To Ambient | 125      | °C/W |
| T <sub>j</sub>   | Junction Temperature                        | 150      | °C   |
| T <sub>stg</sub> | Storage Temperature                         | -55~+150 | °C   |

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## ELECTRICAL CHARACTERISTICS

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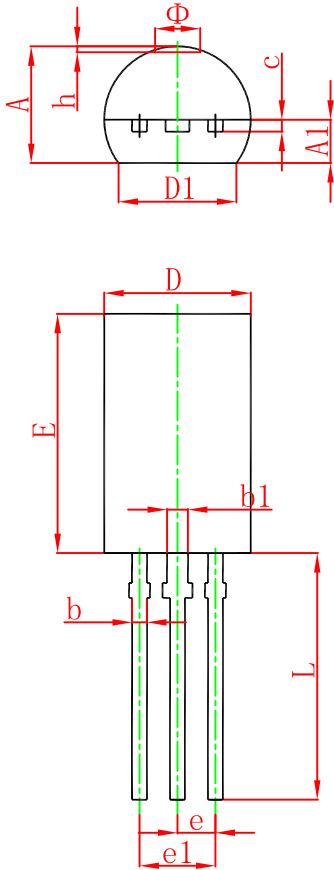
$T_a=25^\circ\text{C}$  unless otherwise specified

| Parameter                            | Symbol        | Test conditions                           | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=1\text{mA}, I_E=0$                   | 120 |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=10\text{mA}, I_B=0$                  | 120 |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=1\text{mA}, I_C=0$                   | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=120\text{V}, I_E=0$               |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5\text{V}, I_C=0$                 |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=100\text{mA}$      | 80  |     | 240 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$       |     |     | 1   | V             |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE}=5\text{V}, I_C=500\text{mA}$      |     |     | 1   | V             |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ |     |     | 30  | pF            |
| Transition frequency                 | $f_T$         | $V_{CE}=5\text{V}, I_C=100\text{mA}$      |     | 120 |     | MHz           |

### CLASSIFICATION OF $h_{FE}$

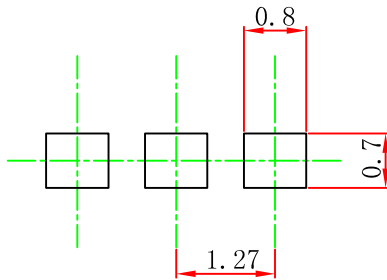
| RANK  | O      | Y       |
|-------|--------|---------|
| RANGE | 80-160 | 120-240 |

## TO-92L Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 3.750                     | 4.050  | 0.148                | 0.159 |
| A1     | 1.280                     | 1.580  | 0.050                | 0.062 |
| b      | 0.380                     | 0.550  | 0.015                | 0.022 |
| b1     | 0.620                     | 0.780  | 0.024                | 0.031 |
| c      | 0.350                     | 0.450  | 0.014                | 0.018 |
| D      | 4.750                     | 5.050  | 0.187                | 0.199 |
| D1     | 4.000                     |        | 0.157                |       |
| E      | 7.850                     | 8.150  | 0.309                | 0.321 |
| e      | 1.270 TYP.                |        | 0.050 TYP.           |       |
| e1     | 2.440                     | 2.640  | 0.096                | 0.104 |
| L      | 13.800                    | 14.200 | 0.543                | 0.559 |
| $\Phi$ |                           | 1.600  |                      | 0.063 |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |

## TO-92L Suggested Pad Layout



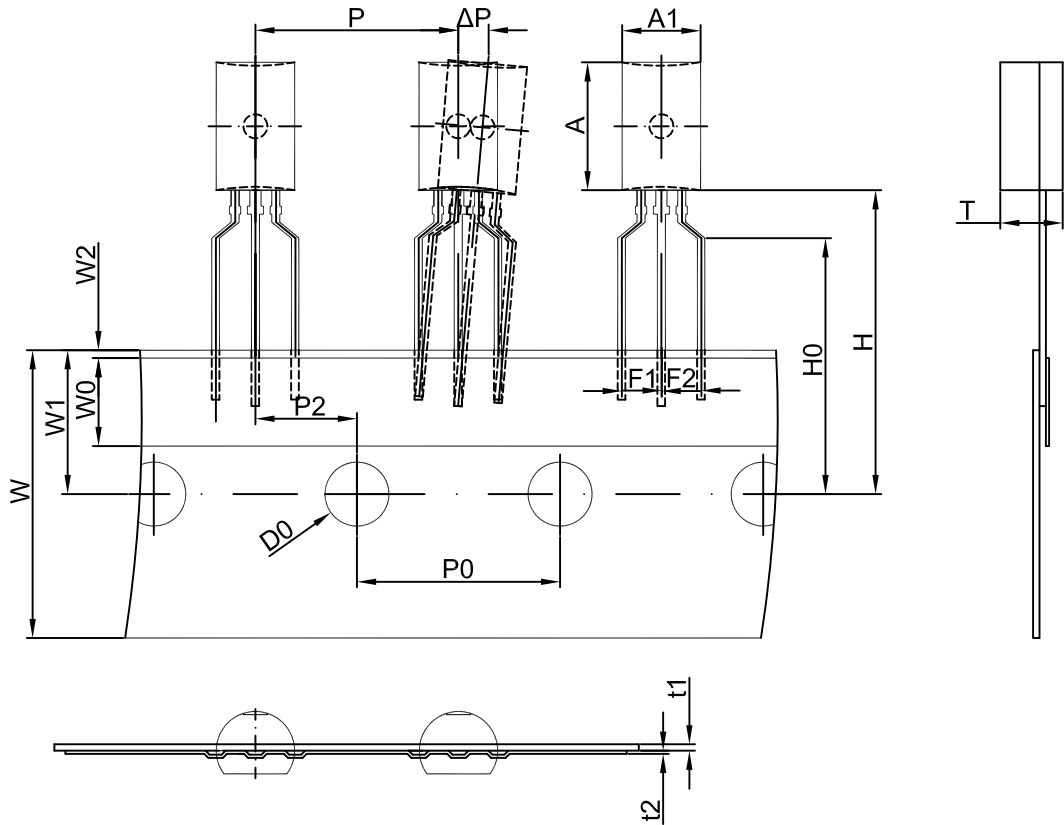
### Note:

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

### NOTICE

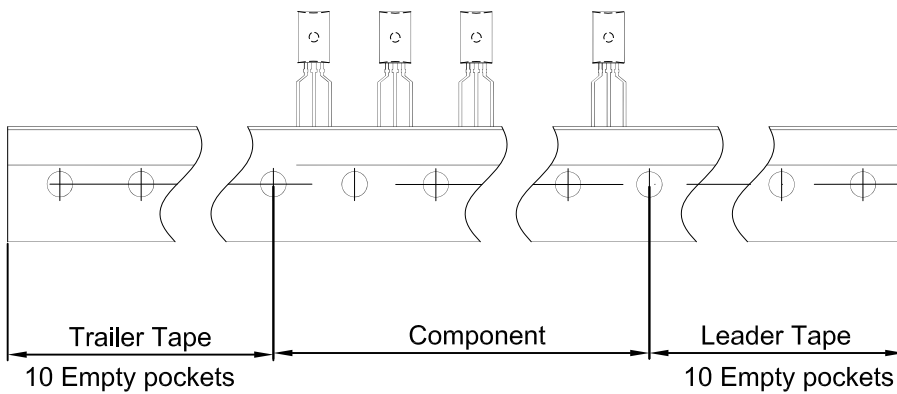
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# TO-92L PACKAGE TAPING DIMENSION



Dimensions are in millimeter

| A1  | A   | T   | P    | P0   | P2   | F1  | F2  | W    |
|-----|-----|-----|------|------|------|-----|-----|------|
| 4.9 | 8.0 | 3.9 | 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-92L  | 2000 pcs | 333×203×42   | 20,000 pcs | 493×400×264     |