

## Voltage Step-up Coils

Chip type

**ELT3KN** series

High inductance Voltage Step-up coil chip series for piezoelectric buzzers and DC/DC circuitry of EL panels

### Features

- Small and thin
- High inductance
- RoHS compliant

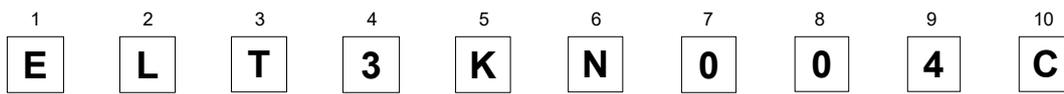
### Recommended applications

- Piezoelectric buzzer, Booster circuit for EL backlight (Watch, Electric thermometer, Portable device)

### Standard packing quantity (Minimum quantity/Packing unit)

- 1,000 pcs or 5,000 pcs / reel

### Explanation of part numbers



Product code

Outer size

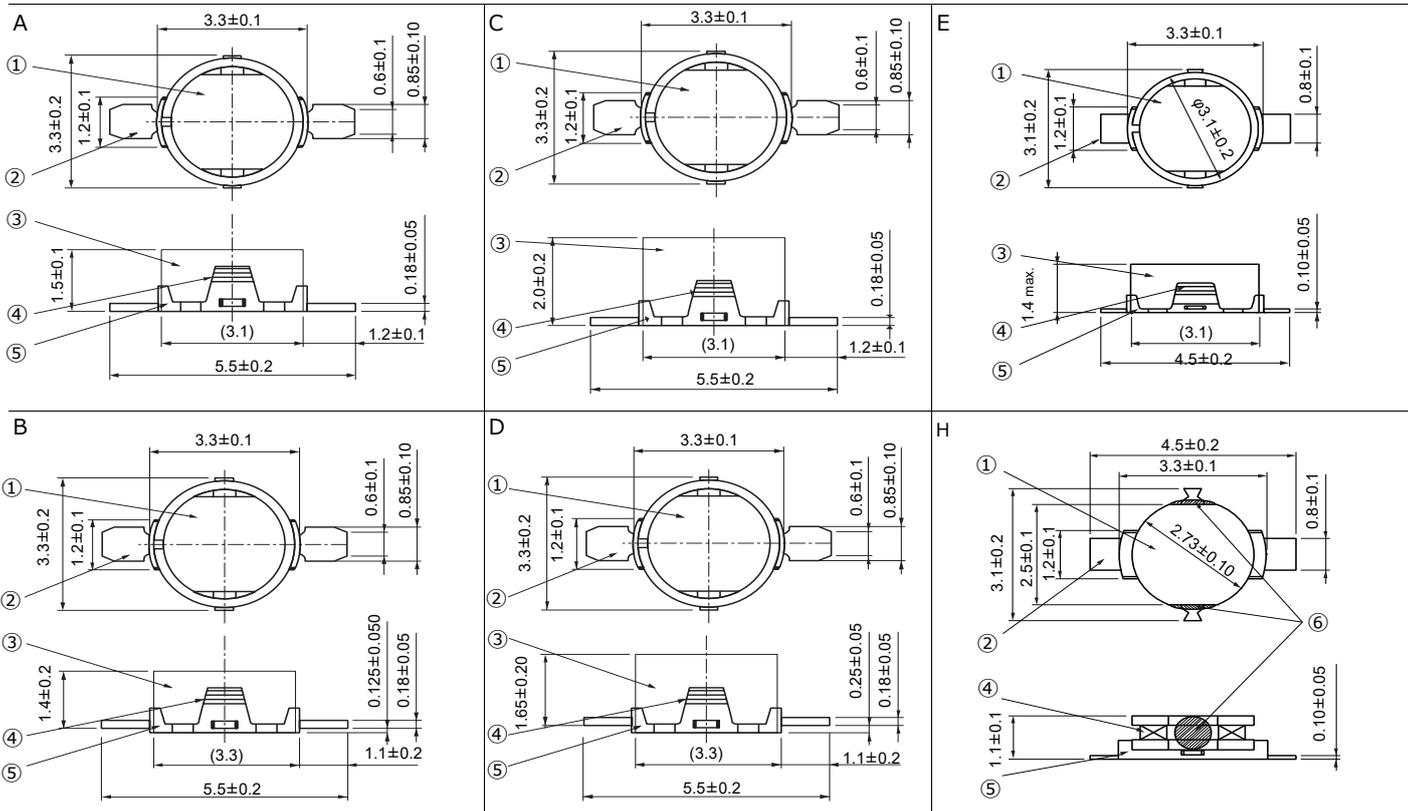
Construction

Design No.

Packaging

| Code | Packaging  |
|------|------------|
| B    | ø 180 Reel |
| C    | ø370 Reel  |

### Dimensions in mm (not to scale)



Part Name: ①Core ②Terminal ③Ring ④Coil ⑤Terminal board ⑥Adhesive

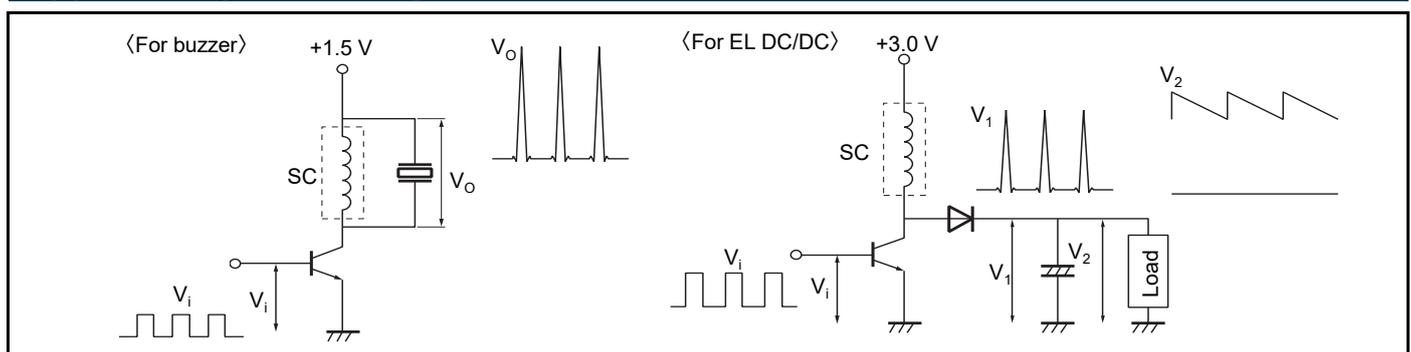
## Voltage Step-up Coils (Chip type)

### Standard parts

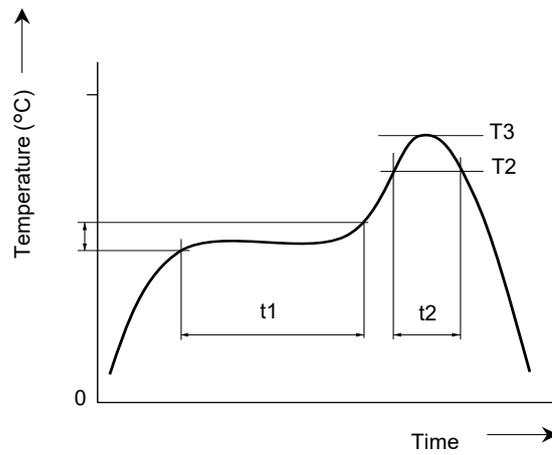
| Part No.  | Inductance |              | DC resistance |              | DC current (mA) max. | Dimensions | Magnetic composition |            |                |                |
|-----------|------------|--------------|---------------|--------------|----------------------|------------|----------------------|------------|----------------|----------------|
|           | (mH)       | Tolerance(%) | (Ω)           | Tolerance(%) |                      |            |                      |            |                |                |
| ELT3KN004 | 14.00      | ±40          | 125           | ±10          | 1.7                  | A          | Permalloy ring       |            |                |                |
| ELT3KN007 | 20.00      |              | 170           |              | 1.4                  |            |                      |            |                |                |
| ELT3KN113 | 1.00       | ±10          | 34            | ±15          | 25.0                 |            | Brass ring           |            |                |                |
| ELT3KN126 | 1.50       |              | 49            |              | 29.0                 |            |                      |            |                |                |
| ELT3KN142 | 0.82       |              | 24            |              | 30.0                 |            |                      |            |                |                |
| ELT3KN019 | 14.00      | ±40          | 125           | ±10          | 1.7                  |            |                      | B          | Permalloy ring |                |
| ELT3KN109 | 3.80       | ±10          | 115           | ±20          | 15.0                 | Brass ring |                      |            |                |                |
| ELT3KN114 | 2.50       |              | 83            | ±15          | 15.0                 |            |                      |            |                |                |
| ELT3KN014 | 30.00      | ±40          | 150           | ±10          | 1.9                  | C          | Permalloy ring       |            |                |                |
| ELT3KN018 | 35.00      |              | 235           |              | 1.9                  |            |                      |            |                |                |
| ELT3KN028 | 50.00      | ±35          | 250           | ±15          | 1.4                  |            |                      |            |                |                |
| ELT3KN032 | 25.00      | ±40          | 185           | ±10          | 10.0                 |            |                      |            |                |                |
| ELT3KN101 | 10.00      | ±10          | 285           | ±15          | 1.4                  |            |                      | Brass ring |                |                |
| ELT3KN104 | 1.00       |              | 35            |              | 30.0                 |            |                      |            |                |                |
| ELT3KN118 | 2.50       |              | 64            |              | 20.0                 |            |                      |            |                |                |
| ELT3KN121 | 1.00       |              | 22.5          |              | 40.0                 |            |                      |            |                |                |
| ELT3KN122 | 2.00       |              | 44            |              | 20.0                 |            |                      |            |                |                |
| ELT3KN123 | 1.00       |              | 25            |              | 30.0                 |            |                      |            |                |                |
| ELT3KN124 | 4.00       |              | 85            |              | 15.0                 |            |                      |            |                |                |
| ELT3KN127 | 0.47       |              | 14            |              | 50.0                 |            |                      |            |                |                |
| ELT3KN128 | 0.56       |              | 15            |              | 45.0                 |            |                      |            |                |                |
| ELT3KN129 | 0.68       |              | 17            |              | 34.0                 |            |                      |            |                |                |
| ELT3KN130 | 2.30       |              | 51            |              | 23.0                 |            |                      |            |                |                |
| ELT3KN131 | 2.00       |              | 44            |              | 20.0                 |            |                      |            |                |                |
| ELT3KN020 | 30.00      |              | ±30           |              | 150                  | ±10        | 2.5                  |            | D              | Permalloy ring |
| ELT3KN111 | 7.50       |              | ±10           |              | 177                  | ±15        | 10.0                 |            |                | Brass ring     |
| ELT3KN125 | 4.00       | 85           |               | 15.0         |                      |            |                      |            |                |                |
| ELT3KN041 | 14.00      | ±40          | 125           | ±10          | 1.7                  | E          | Permalloy ring       |            |                |                |
| ELT3KN042 | 20.00      |              | 175           |              | 1.4                  |            |                      |            |                |                |
| ELT3KN043 | 12.00      |              | 117           |              | 1.7                  |            |                      |            |                |                |
| ELT3KN139 | 0.68       | ±10          | 19            | ±15          | 40.0                 |            | Brass ring           |            |                |                |
| ELT3KN140 | 0.82       |              | 22            |              | 30.0                 |            |                      |            |                |                |
| ELT3KN135 | 1.10       |              | 32            |              | 30.0                 |            |                      |            |                |                |
| ELT3KN136 | 2.00       |              | 55            |              | 20.0                 |            |                      |            |                |                |
| ELT3KN137 | 4.00       |              | 117           |              | ±10                  | 15.0       |                      |            |                |                |
| ELT3KN149 | 0.33       |              | 11            | ±15          | 60.0                 |            |                      |            |                |                |
| ELT3KN151 | 0.56       |              | 17            |              | 50.0                 |            |                      |            |                |                |
| ELT3KN152 | 0.47       |              | 14            |              | 50.0                 |            |                      |            |                |                |
| ELT3KN155 | 1.10       |              | 38            |              | 25.0                 | H          |                      | Ring less  |                |                |
| ELT3KN162 | 4.00       |              | 117           |              | ±10                  | 15.0       |                      | E          | Brass ring     |                |
| ELT3KN163 | 1.10       |              | 32            | ±15          | 30.0                 |            |                      |            |                |                |

"□" shows the packaging specifications.

### Applied diagram examples



**Reflow soldering conditions**



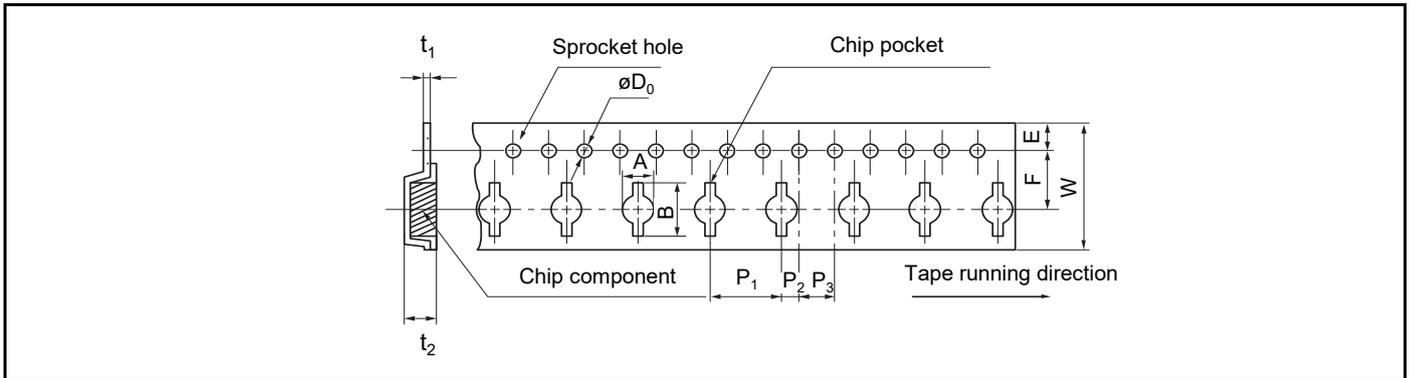
● Pb free solder recommended temperature profile

Voltage Step-up Coils

| Part No. | Preheat    |           | Soldering |         | Peak temperature |              | Time of reflow |
|----------|------------|-----------|-----------|---------|------------------|--------------|----------------|
|          | T1 [°C]    | t1 [s]    | T2 [°C]   | t2 [s]  | T3               | T3 Limit     |                |
| ELT3KN   | 150 to 170 | 60 to 120 | 230 °C    | 30 max. | 245 °C, 10 s     | 260 °C, 10 s | 2 times max.   |

## Packaging methods (Taping)

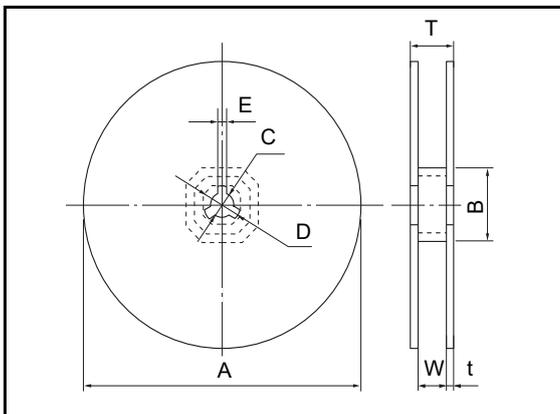
- Embossed carrier tape dimensions in mm (not to scale)



Unit : mm

| Part No. | A   | B   | W    | E    | F   | P <sub>1</sub> | P <sub>2</sub> | P <sub>0</sub> | øD <sub>0</sub> | t <sub>1</sub> | t <sub>2</sub> |
|----------|-----|-----|------|------|-----|----------------|----------------|----------------|-----------------|----------------|----------------|
| ELT3KN   | 3.7 | 6.4 | 12.0 | 1.75 | 5.5 | 8.0            | 2.0            | 4.0            | 1.5             | 0.3            | 2.6            |

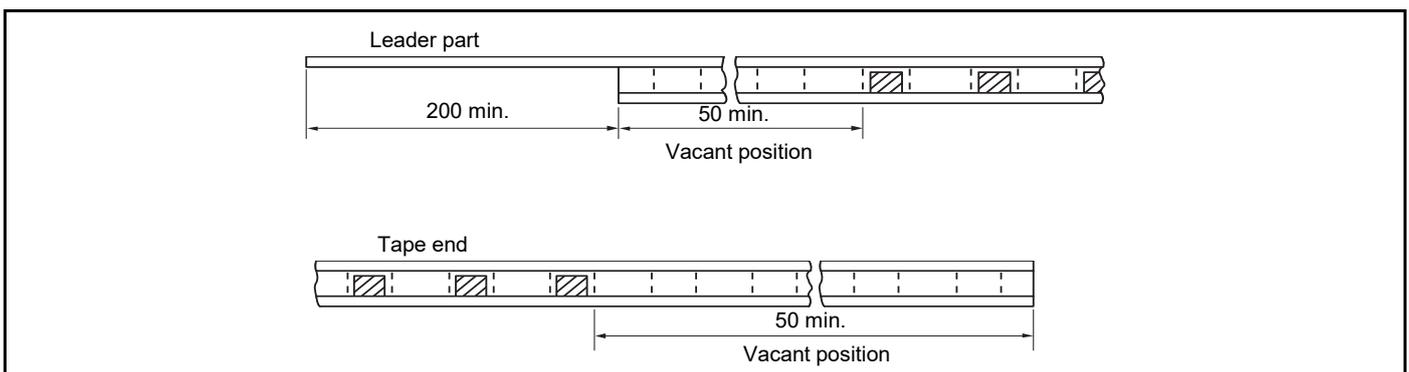
- Reel dimensions in mm (not to scale)



Unit : mm

| Packaging | A   | B  | C  | D  | E | W  | t   | T    |
|-----------|-----|----|----|----|---|----|-----|------|
| B         | 180 | 60 | 13 | 21 | 2 | 13 | 1.1 | 15.2 |
| C         | 370 | 60 | 13 | 21 | 2 | 14 | 2.0 | 18.0 |

- Leader Part, Vacant Position



## Standard packing quantity

| Packaging | Quantity per reel | Kind of taping                |
|-----------|-------------------|-------------------------------|
| B         | 1,000 pcs         | B 1,000 pcs. Embossed carrier |
| C         | 5,000 pcs         | Embossed carrier taping       |

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- This catalog explains the quality and performance of the products as individual components. Before use, check and evaluate their operations when installed in your products.
- If a malfunction of this product may result in the loss of human life or other serious damage in transportation equipment (trains, automobiles, ships, etc.), signaling equipment, medical equipment, aerospace equipment, electric heating equipment, combustion and gas equipment, rotating equipment, disaster prevention and security equipment, and other equipment, ensure safety by implementing a fail-safe design with the following system.
  - \* Systems equipped with a protection circuit and a protection device.
  - \* Systems equipped with a redundant circuit or other system to prevent an unsafe status in the event of a single fault.

### 2. Precautions for use

#### 2-1. Operation range and environments

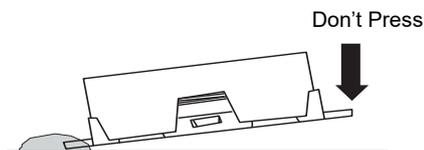
- ① These products are designed and manufactured for general and standard use in general electronic equipment (e.g. AV equipment, home electric appliances, office equipment, information and communication equipment)
- ② These products are not designed for the use in the following special conditions. Before using the products, carefully check the effects on their quality and performance, and determine whether or not they can be used.
  - In liquid, such as water, oil, chemicals, or organic solvent
  - In direct sunlight, outdoors, or in dust
  - In salty air or air with a high concentration of corrosive gas, such as  $\text{Cl}_2$ ,  $\text{H}_2\text{S}$ ,  $\text{NH}_3$ ,  $\text{SO}_2$ , or  $\text{NO}_x$
  - In an environment where these products cause dew condensation

#### 2-2. Handling

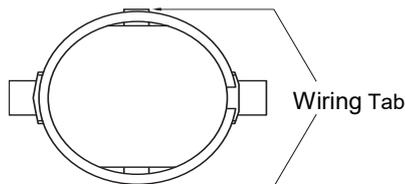
- ① Do not bring magnets or magnetized materials close to the product. The influence of their magnetic field can change the inductance value.
- ② Do not apply strong mechanical shocks by either dropping or collision with other parts. Excessive shock can damage the part.

#### 2-3. Resoldering with a soldering iron

- ① Resoldering should be done within 3 seconds by soldering iron, the temperature with 350 °C or less and should be cooling down after ward. Both side of terminals shall be fixed closely to PWB. And terminals shall not be pressed in heating.



- ② The wiring tab shall not be held by sharp-edged tool.



- ③ Iron shall not be put to the component itself.

#### 2-4. Mounting side

- ① External force must be less than 4.9N while mounting.
- ② The wiring tab is expose the terminal, so please be careful when you design PWB pattern of coil circumference.

#### 2-5. Cleaning

If ultrasonic cleaning is used, check the product with your equipment.

#### 2-6. Storage conditions

Normal temperature (-5 to 35 °C), normal humidity (85 %RH max.), shall not be exposed to direct sunlight and harmful gases and care should be taken so as not to cause dew.

<Package markings>

Package markings include the product number, quantity, and country of origin.

In principle, the country of origin should be indicated in English.