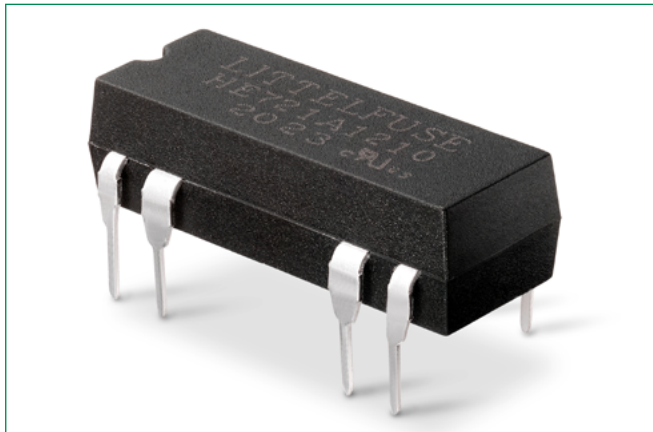


# HE700

## Miniature Dual In-line Reed Relay



### Description

The HE700 is a miniature reed relay in a DIL package with a choice of normally open, normally open high voltage, normally closed or changeover contacts capable of switching up to 300Vdc at 10W. It is available with 5V, 12V, and 24V coils and diode suppression and also available with magnetic shield option.

### Features

- Miniature dual in-line package
- Optional coil suppression diode to protect coil drive circuits
- External magnetic shield option
- Diode suppression option
- RoHS Compliant
- UL Recognized to UL 508 as an Industrial Control Switch

### Benefits

- One relay, various contacts choices reducing space and cost without compromising flexibility
- Lower power coil consumption than competing electromechanical devices.
- Hermetically sealed switching contact is immune to the effects of its environment
- Transfer molded package gives maximum component protection

### Applications

- Security Systems
- Telecom Equipments
- Process Control Systems
- Industrial Equipments
- Instrumentation

### Additional Information



Resources



Accessories



Samples

### Agency Approvals

| Agency | Agency File Number |
|--------|--------------------|
|        | E47258             |

**Note:** Not all parts are UL Recognized. Contact Littelfuse for specific parts and agency approval ratings.

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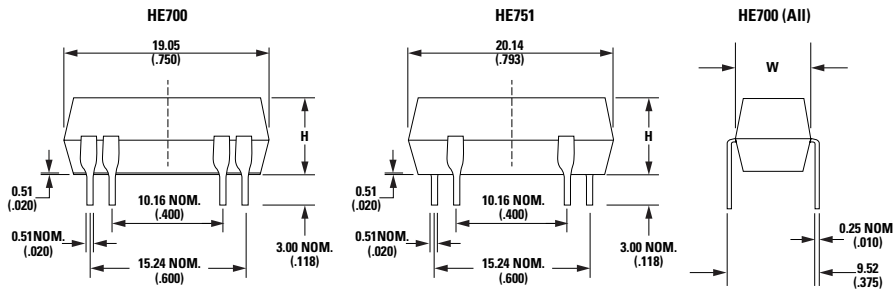
# HE700

## Miniature Dual In-line Reed Relay

### Dimensions

Dimensions in mm (inch)

| Relay Type | Body Type       | L            | W           | H           |
|------------|-----------------|--------------|-------------|-------------|
| HE700      | Transfer Molded | 19.05 (.750) | 7.22 (.284) | 5.50 (.217) |
|            | External Shield | 20.14 (.793) | 7.62 (.300) | 5.82 (.229) |



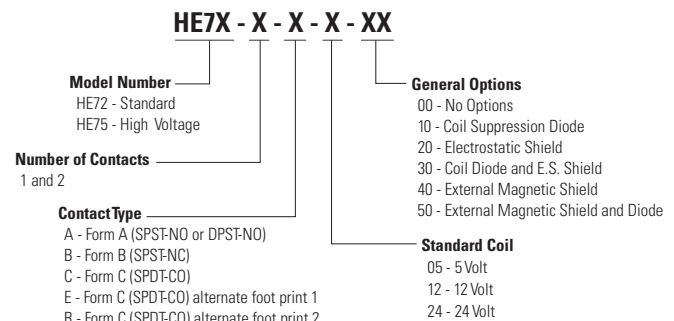
**Table 2: Electrical and Operating Characteristics @ 25°C**

| Characteristics               |                                   |                                       | Contact Type               |                         |                          |                         |
|-------------------------------|-----------------------------------|---------------------------------------|----------------------------|-------------------------|--------------------------|-------------------------|
|                               |                                   |                                       | Form A SPST, DPST Standard | Form C SPDT-CO Standard | Form A SPST High Voltage | Form B SPST-NC Standard |
|                               |                                   |                                       | Relay Types                |                         |                          |                         |
|                               |                                   |                                       | HE721, HE722               | HE721C/E/R              | HE751                    | HE721                   |
| Contact Rating <sup>1</sup>   | Power, Switching                  | Watt - max.                           | 10                         | 5                       | 10                       | 10                      |
|                               | Voltage, Switching <sup>2</sup>   | Vdc - max.                            | 200                        | 175                     | 300                      | 200                     |
|                               |                                   | Vac - max.                            | 140                        | 120                     | 265                      | 140                     |
|                               | Current, Switching <sup>3</sup>   | Adc - max.                            | 0.5                        | 0.25                    | 0.5                      | 0.5                     |
| Aac - max.                    |                                   | 0.35                                  | 0.18                       | 0.35                    | 0.35                     |                         |
| Current, Carry                | Adc - max.                        | 1.2                                   | 1.5                        | 1.2                     | 1.5                      |                         |
|                               |                                   |                                       |                            |                         |                          |                         |
| Voltage Hold-off <sup>4</sup> | Across Open Contacts              | Vdc/Vac Peak - min.                   | 250                        | 200                     | 450                      | 250                     |
|                               | Contacts to Coil                  |                                       | 500                        | 500                     | 4000                     | 500                     |
|                               | Coil to E. Shield                 |                                       | 150                        | 150                     | N/A                      | N/A                     |
|                               | Between Isolated Terminals        |                                       | 500                        | N/A                     | N/A                      | N/A                     |
| Resistance                    | Contact, Initial                  | Ω max.                                | 0.150                      | 0.200                   | 0.150                    | 0.150                   |
|                               | Insulation Across Open Contacts   | Ω min.                                | 10 <sup>10</sup>           | 10 <sup>10</sup>        | 10 <sup>10</sup>         | 10 <sup>10</sup>        |
|                               |                                   | Insulation Between Isolated Terminals | Ω min.                     | 10 <sup>10</sup>        | 10 <sup>10</sup>         | 10 <sup>10</sup>        |
| Timing                        | Operate Time                      | ms - max.                             | 1.0                        | 3.0                     | 1.0                      | 1.0                     |
|                               | Release Time                      | ms - max.                             | 1.0                        | 3.0                     | 1.0                      | 1.0                     |
| Environmental                 | Temperature, Operating            | °C                                    | -40 to +85                 | -40 to +85              | -20 to +85               | -40 to +85              |
|                               | Temperature, Storage <sup>5</sup> | °C                                    | -40 to +105                | -40 to +105             | -40 to +105              | -40 to +105             |
|                               | Vibration Resistance              | G - max. 10-2000 Hz.                  | 20                         | 20                      | 20                       | 20                      |
|                               | Shock Resistance                  | G - max. 11 ms ½ sine                 | 50                         | 50                      | 50                       | 50                      |

**Notes:**

- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/lofe information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A & AN107 for details.
- Electrical Load Life Expectancy - Contact Littelfuse with voltage current values along with type of load.
- Breakdown Voltage - Per MIL-STD-202, Method 301.
- Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.

### Part Numbering System



**Note:** Not all combinations of Part Number suffixes are available. Contact Littelfuse for details.

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# HE700

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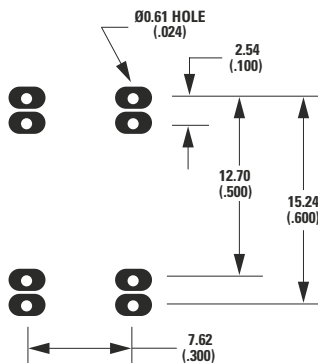
**Table 3: Coil Characteristics @ 25°C**

| Contact Form                  | Electrical and Operating Characteristics | Dimensions | Part Number | Nominal Coil Voltage Vdc | Coil Resistance ±10% Ohms | Must Operate Vdc | Must Release Vdc | Maximum Coil Voltage Vdc | Top View 2.54mm (0.1") Grid<br>Dot on Case: Pin 1<br>Numbers not printed on case. |
|-------------------------------|--|------------|-------------|--------------------------|---------------------------|------------------|------------------|--------------------------|---|
| 1A<br>SPST-NO                 | See Table 2<br>Column 1                  | Figure 1   | HE721A0500  | 5                        | 500                       | 3.75             | 0.5              | 12                       |   |
|                               |  |            | HE721A1200  | 12                       | 1000                      | 8.0              | 1.0              | 31                       |   |
|                               |  |            | HE721A2400  | 24                       | 2150                      | 16.0             | 2.0              | 46                       |   |
| 1B<br>SPST-NC                 | See Table 2<br>Column 4                  | Figure 1   | HE721B0500  | 5                        | 500                       | 3.75             | 0.5              | 6.5 <sup>1,2</sup>       |   |
|                               |  |            | HE721B1200  | 12                       | 500                       | 9.0              | 1.0              | 14 <sup>1,2</sup>        |   |
|                               |  |            | HE721B2400  | 24                       | 2150                      | 18.0             | 2.0              | 28 <sup>1,2</sup>        |   |
| 1C<br>SPDT-CO                 | See Table 2<br>Column 2                  | Figure 1   | HE721C0500  | 5                        | 200                       | 3.75             | 0.5              | 14                       |   |
|                               |  |            | HE721C1200  | 12                       | 500                       | 8.0              | 1.0              | 22                       |   |
|                               |  |            | HE721C2400  | 24                       | 2000                      | 16.0             | 2.0              | 44                       |   |
| 1C<br>SPDT-CO                 | See Table 2<br>Column 2                  | Figure 1   | HE721E0500  | 5                        | 200                       | 3.75             | 0.5              | 14                       |   |
|                               |  |            | HE721E1200  | 12                       | 500                       | 8.0              | 1.0              | 22                       |   |
|                               |  |            | HE721E2400  | 24                       | 2000                      | 16.0             | 2.0              | 44                       |   |
| 1C<br>SPDT-CO                 | See Table 2<br>Column 2                  | Figure 1   | HE721R0500  | 5                        | 200                       | 3.75             | 0.5              | 14                       |   |
|                               |  |            | HE721R1200  | 12                       | 500                       | 8.0              | 1.0              | 22                       |   |
|                               |  |            | HE721R2400  | 24                       | 2000                      | 16.0             | 2.0              | 44                       |   |
| 2A<br>DPST-NO                 | See Table 2<br>Column 1                  | Figure 1   | HE722A0500  | 5                        | 200                       | 3.75             | 0.5              | 12                       |   |
|                               |  |            | HE722A1200  | 12                       | 500                       | 8.0              | 1.0              | 22                       |   |
|                               |  |            | HE722A2400  | 24                       | 2150                      | 16.0             | 2.0              | 46                       |   |
| 1A<br>SPST-NO<br>High Voltage | See Table 2<br>Column 3                  | Figure 2   | HE751A0500  | 5                        | 500                       | 3.75             | 0.5              | 12                       |   |
|                               |  |            | HE751A1200  | 12                       | 1000                      | 8.0              | 1.0              | 31                       |   |
|                               |  |            | HE751A2400  | 24                       | 2150                      | 16.0             | 2.0              | 46                       |   |

**Notes:**

- HE721B - Exceeding recommended voltage may cause contact reclosure.
- Optional external magnetic shield not available on Form B relays.

### HE700 PCB Layout (Bottom View)



### Packaging

| Packaging Option | Packaging Specification | Quantity  | Quantity & Packaging Code | Taping Width |
|------------------|-------------------------|-----------|---------------------------|--------------|
| Bulk             | Bulk                    | 1000/5000 | N/A                       | N/A          |

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