



|                     | LCA129 | Units |
|---------------------|--------|-------|
| Load Voltage        | 250    | V     |
| Load Current        | 170    | mA    |
| Max R <sub>ON</sub> | 20     | Ω     |

### Description

LCA129 is a 250V, 170mA 20Ω 1-Form-A relay. It features high sensitivity with enhanced peak load current capability.

### Features

- Small 6 Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- 3750V<sub>RMS</sub> Input/Output Isolation
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Surface Mount and Tape & Reel Versions Available

### Approvals

- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- BSI Certified to:
  - BS EN 60950:1992 (BS7002:1992)  
Certificate #: 7344
  - BS EN 41003:1993  
Certificate #: 7344

### Applications

- Telecommunications
  - Telecom Switching
  - Tip/Ring Circuits
  - Modem Switching (Laptop, Notebook, Pocket Size)
  - Hookswitch
  - Dial Pulsing
  - Ground Start
  - Ringer Injection
- Instrumentation
  - Multiplexers
  - Data Acquisition
  - Electronic Switching
  - I/O Subsystems
  - Meters (Watt-Hour, Water, Gas)
- Medical Equipment—Patient/Equipment Isolation
- Security
- Aerospace
- Industrial Controls

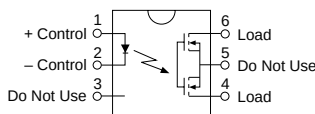
### Ordering Information

| Part #    | Description                     |
|-----------|---------------------------------|
| LCA129    | 6 Pin DIP (50/Tube)             |
| LCA129S   | 6 Pin Surface Mount (50/Tube)   |
| LCA129STR | 6 Pin Surface Mount (1000/Reel) |

### Pin Configuration

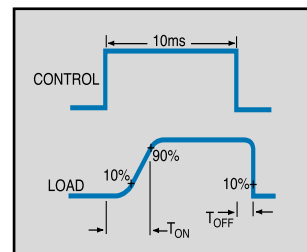
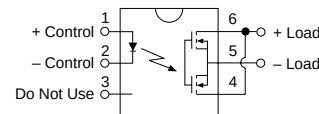
#### LCA129 Pinout

AC/DC Configuration



#### LCA129 Pinout

DC Only Configuration



**Absolute Maximum Ratings (@ 25° C)**

| Parameter               | Min  | Typ | Max              | Units            |
|-------------------------|------|-----|------------------|------------------|
| Input Power Dissipation | -    | -   | 150 <sup>1</sup> | mW               |
| Input Control Current   | -    | -   | 50               | mA               |
| Peak (10ms)             | -    | -   | 1                | A                |
| Reverse Input Voltage   | -    | -   | 5                | V                |
| Total Power Dissipation | -    | -   | 800 <sup>2</sup> | mW               |
| Isolation Voltage       |      |     |                  |                  |
| Input to Output         | 3750 | -   | -                | V <sub>RMS</sub> |
| Operational Temperature | -40  | -   | +85              | °C               |
| Storage Temperature     | -40  | -   | +125             | °C               |
| Soldering Temperature   |      |     |                  |                  |
| DIP Package             | -    | -   | +260             | °C               |
| Surface Mount Package   | -    | -   | +220             | °C               |
| (10 Seconds Max.)       |      |     |                  |                  |

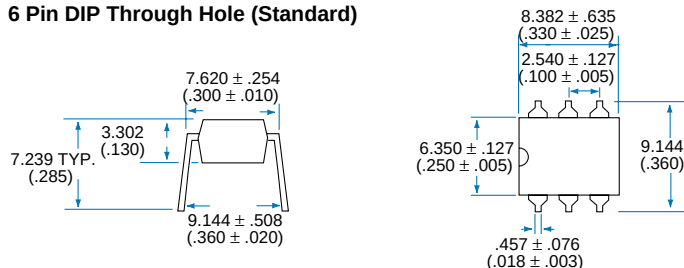
<sup>1</sup> Derate Linearly 1.33 mW/°C<sup>2</sup> Derate Linearly 6.67 mW/°C

*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.*

**Electrical Characteristics**

| Parameter                            | Conditions                               | Symbol            | Min  | Typ | Max | Units            |
|--------------------------------------|------------------------------------------|-------------------|------|-----|-----|------------------|
| <b>Output Characteristics @ 25°C</b> |                                          |                   |      |     |     |                  |
| Load Voltage (Peak)                  | -                                        | V <sub>L</sub>    | -    | -   | 250 | V                |
| Load Current (Continuous)            | -                                        | I <sub>L</sub>    | -    | -   | 170 | mA               |
| AC/DC Configuration                  | -                                        | I <sub>L</sub>    | -    | -   | 300 | mA               |
| DC Configuration                     | -                                        | I <sub>L</sub>    | -    | -   | 300 | mA               |
| Peak Load Current                    | 10ms                                     | I <sub>LPK</sub>  | -    | -   | 400 | mA               |
| On-Resistance                        |                                          |                   |      |     |     |                  |
| AC/DC Configuration                  | I <sub>L</sub> =Load Current             | R <sub>ON</sub>   | -    | 12  | 20  | Ω                |
| DC Configuration                     | I <sub>L</sub> =Load Current             | R <sub>ON</sub>   | -    | 4   | 6   | Ω                |
| Off-State Leakage Current            | V <sub>L</sub> =250V                     | I <sub>LEAK</sub> | -    | -   | 1   | μA               |
| Switching Speeds                     |                                          |                   |      |     |     |                  |
| Turn-On                              | I <sub>F</sub> =2mA, V <sub>L</sub> =10V | T <sub>ON</sub>   | -    | -   | 8   | ms               |
| Turn-Off                             | I <sub>F</sub> =2mA, V <sub>L</sub> =10V | T <sub>OFF</sub>  | -    | -   | 8   | ms               |
| Output Capacitance                   | 50V; f=1MHz                              | C <sub>OUT</sub>  | -    | 50  | -   | pF               |
| Capacitance                          |                                          |                   |      |     |     |                  |
| Input to Output                      | -                                        | -                 | -    | 3   | -   | pF               |
| <b>Input Characteristics @ 25°C</b>  |                                          |                   |      |     |     |                  |
| Input Control Current                | I <sub>L</sub> =Load Current             | I <sub>F</sub>    | 2    | -   | 50  | mA               |
| Input Dropout Current                | -                                        | I <sub>F</sub>    | 0.4  | 0.7 | -   | mA               |
| Input Voltage Drop                   | I <sub>F</sub> =5mA                      | V <sub>F</sub>    | 0.9  | 1.2 | 1.4 | V                |
| Reverse Input Voltage                | -                                        | V <sub>R</sub>    | -    | -   | 5   | V                |
| Reverse Input Current                | V <sub>R</sub> =5V                       | I <sub>R</sub>    | -    | -   | 10  | μA               |
| <b>Common Characteristics @ 25°C</b> |                                          |                   |      |     |     |                  |
| Input to Output Capacitance          | -                                        | C <sub>I/O</sub>  | -    | 3   | -   | pF               |
| Input to Output Isolation            | -                                        | V <sub>I/O</sub>  | 3750 | -   | -   | V <sub>RMS</sub> |

### 6 Pin DIP Through Hole (Standard)



**(Top View)**

6-.800 DIA.  
(6-.031 DIA.)

2.540  $\pm$  .127  
(.100  $\pm$  .005)

6.350  $\pm$  .127  
(.250  $\pm$  .005)

7.620  $\pm$  .127  
(.300  $\pm$  .005)

5.080  $\pm$  .127  
(.200  $\pm$  .005)

**6 Pin DIP Surface Mount ("S" Suffix)**

4.445 ± .127  
(.175 ± .005)

3.302 ± .130  
(.130)

7.620 ± .254  
(.300 ± .010)

.635 TYP.  
(.025)

.254 TYP.  
(.010)

8.382 ± .635  
(.330 ± .025)

2.540 ± .127  
(.100 ± .005)

6.350 ± .127  
(.250 ± .005)

9.525 ± .254  
(.375 ± .010)

.457 ± .076  
(.018 ± .003)

**(Top View)**

Diagram showing the top view of a 2x3 grid of squares. The dimensions are labeled as follows:

- Top row width:  $2.540 \pm .127$  ( $.100 \pm .005$ )
- Bottom row width:  $1.905 \pm .127$  ( $.075 \pm .005$ )
- Left column height:  $1.499 \pm .127$  ( $.059 \pm .005$ )
- Right column height:  $8.305 \pm .127$  ( $.327 \pm .005$ )

Technical drawing of a 35mm film cartridge showing dimensions and assembly details. The drawing includes a side view of the film roll and a detailed view of the cartridge body.

**Dimensions and Tolerances:**

- 330.2 DIA. (13.00)
- Top Cover Tape Thickness .102 MAX. (.004)
- 6.731 MAX. (.265)
- 406 MAX. (.016)
- 12.090 (.476)
- 4.877 (.192)
- Top Cover Tape
- 7.493 ± .102 (.295 ± .004)
- 1.753 ± .102 (.069 ± .004)
- 2.007 ± .102 (.079 ± .004)
- 1.498 ± .102 (.059 ± .004)
- 3.987 ± .102 (.157 ± .004)
- 16.002 ± .305 (.630 ± .012)
- 10.100 (.398)
- 10.100 ± .102 (.398 ± .004)
- 1.549 ± .102 (.061 ± .004)
- 11.989 ± .102 (.472 ± .004)
- 10.100 ± .102 (.398 ± .004)
- 1.549 ± .102 (.061 ± .004)
- .050R TYP.
- Embossed Carrier
- Embossment
- User Direction of Feed

Rev. 2

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