



|                     | LCA100L | Units |
|---------------------|---------|-------|
| Load Voltage        | 350     | V     |
| Load Current        | 120     | mA    |
| Max R <sub>ON</sub> | 25      | Ω     |

### Description

LCA100 is a 350V, 120mA, 25Ω 1-Form-A relay. It features the lowest on-resistance in an OptoMOS relay with 350V peak load voltage. Current limiting version is also available. ("L" suffix)

### 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
- Current Limiting, Surface Mount and Tape & Reel Versions Available

### 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

### 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

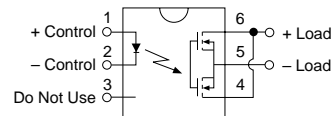
### Ordering Information

| Part #     | Description                     |
|------------|---------------------------------|
| LCA100L    | 6 Pin DIP (50/Tube)             |
| LCA100LS   | 6 Pin Surface Mount (50/Tube)   |
| LCA100LSTR | 6 Pin Surface Mount (1000/Reel) |

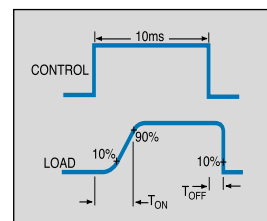
### Pin Configuration

#### LCA100/LCA100L Pinout

DC Only Configuration



#### Switching Characteristics of Normally Open (Form A) Devices



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

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

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

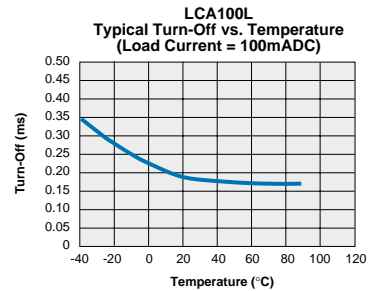
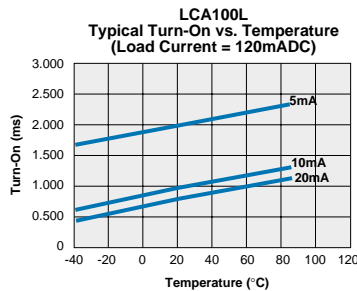
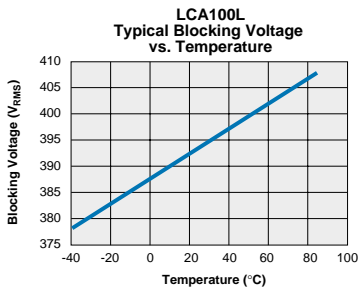
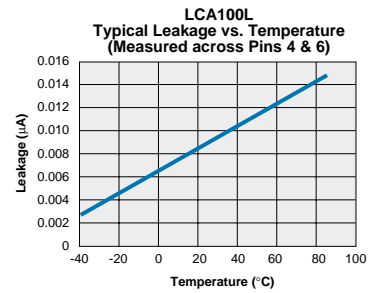
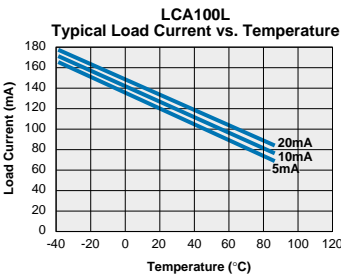
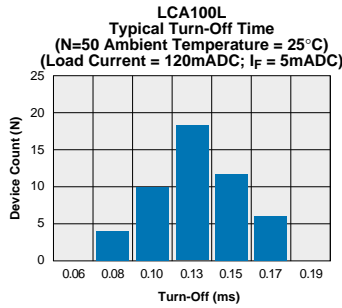
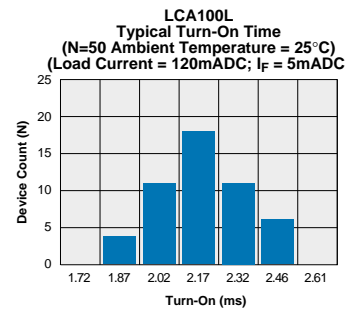
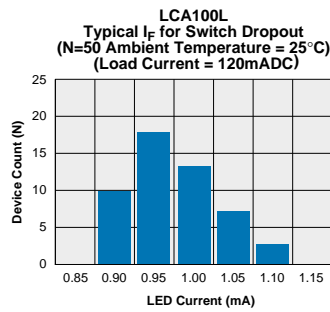
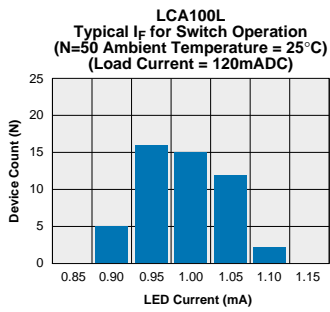
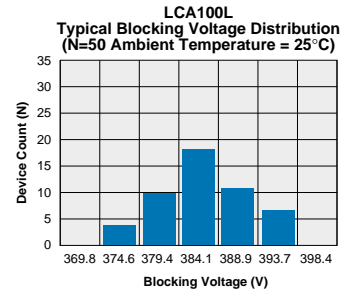
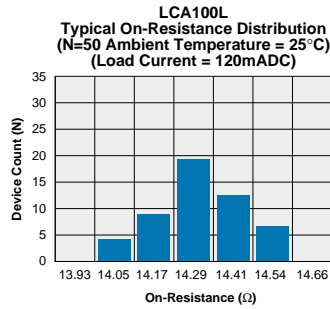
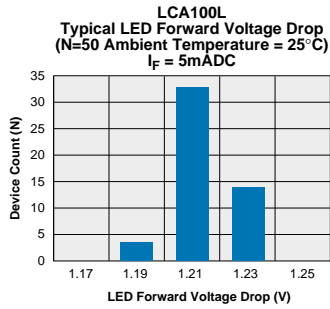
<sup>2</sup> Derate Linearly 6.67 mW/°C

*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

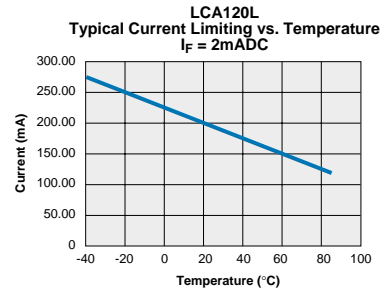
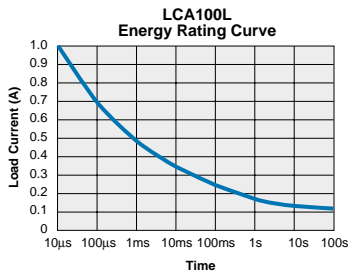
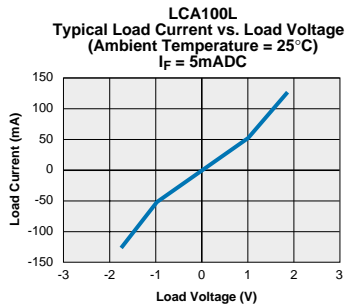
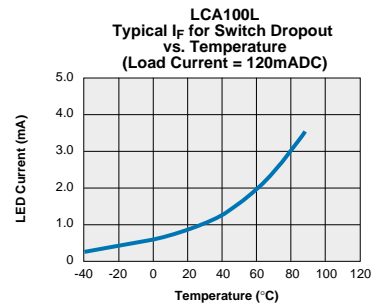
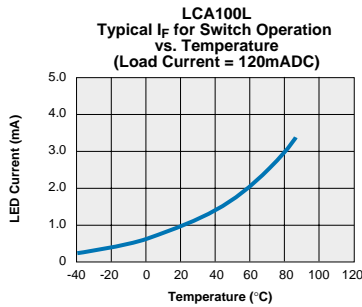
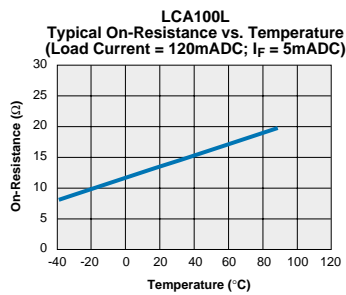
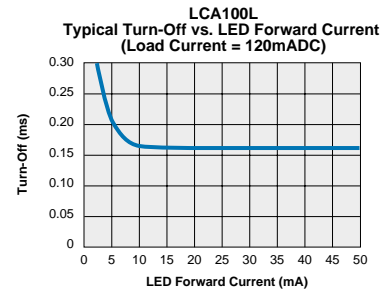
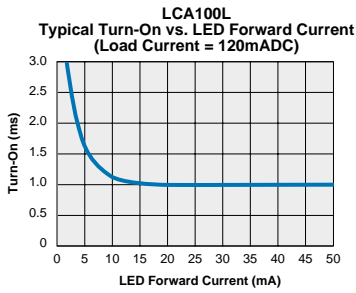
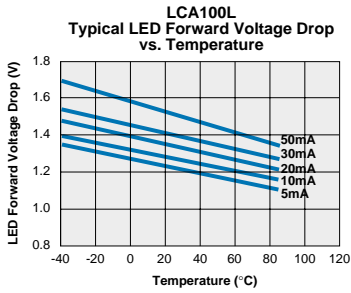
| PARAMETER                            | CONDITIONS                               | SYMBOL            | MIN  | TYP | MAX | UNITS            |
|--------------------------------------|--|-------------------|------|-----|-----|------------------|
| <b>Output Characteristics @ 25°C</b> |  |                   |      |     |     |                  |
| Load Voltage (Peak)                  | -  | V <sub>L</sub>    | -    | -   | 350 | V                |
| Load Current (Continuous)            |  |                   |      |     |     |                  |
| AC/DC Configuration                  | -  | I <sub>L</sub>    | -    | -   | 120 | mA               |
| DC Configuration                     | -  | I <sub>L</sub>    | -    | -   | 200 | mA               |
| Peak Load Current                    | 10ms                                     | I <sub>LPK</sub>  | -    | -   | -   | mA               |
| On-Resistance                        |  |                   |      |     |     |                  |
| AC/DC Configuration                  | I <sub>L</sub> =120mA                    | R <sub>ON</sub>   | -    | -   | 25  | Ω                |
| DC Configuration                     | I <sub>L</sub> =200mA                    | R <sub>ON</sub>   | -    | -   | 8   | Ω                |
| Off-State Leakage Current            | V <sub>L</sub> =350V                     | I <sub>LEAK</sub> | -    | -   | 1   | μA               |
| Switching Speeds                     |  |                   |      |     |     |                  |
| Turn-On                              | I <sub>F</sub> =5mA, V <sub>L</sub> =10V | T <sub>ON</sub>   | -    | -   | 5   | ms               |
| Turn-Off                             | I <sub>F</sub> =5mA, V <sub>L</sub> =10V | T <sub>OFF</sub>  | -    | -   | 5   | ms               |
| Output Capacitance                   | 50V; f=1MHz                              | C <sub>OUT</sub>  | -    | 35  | -   | pF               |
| Load Current Limiting                |  | I <sub>CL</sub>   | 130  | 170 | 210 | mA               |
| <b>Input Characteristics @ 25°C</b>  |  |                   |      |     |     |                  |
| Input Control Current                | I <sub>L</sub> =120mA                    | I <sub>F</sub>    | 5    | -   | 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               |
| 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> |

PERFORMANCE DATA\*



The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

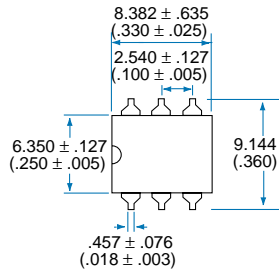
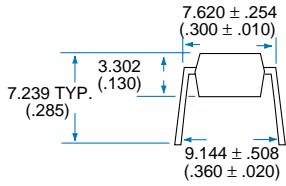
PERFORMANCE DATA\*



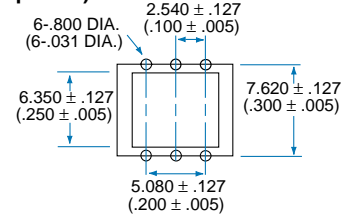
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### Mechanical Dimensions

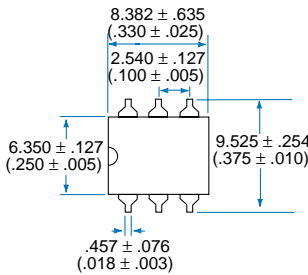
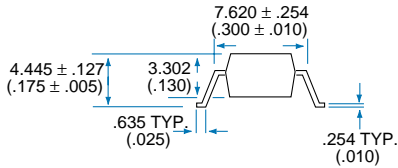
6 Pin DIP Through Hole (Standard)



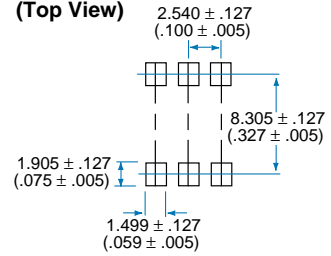
PC Board Pattern (Top View)



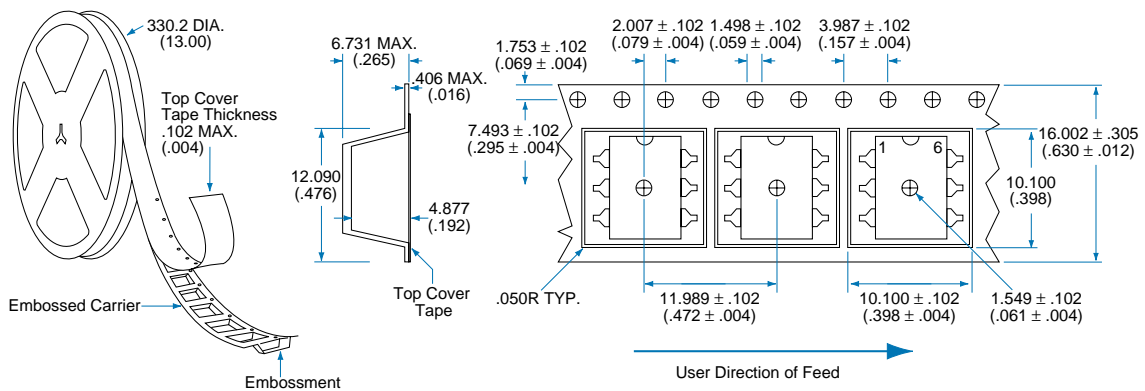
6 Pin DIP Surface Mount ("S" Suffix)



PC Board Pattern (Top View)



Tape and Reel Packaging for 6 Pin Surface Mount Package



Dimensions  
mm  
(inches)



# CLARE

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