# LAA100L

## DUAL POLE OptoMOS® Relay




| | LAA100L | Units |
|---|---|---|
| Load Voltage | 350 | V |
| Load Current | 120 | mA |
| Max $R_{ON}$ | 25 | Ω |

### Description

LAA100L is a 350V, 120mA, 25Ω 2-Form-A relay. It features improved on-resistance. Current limiting version is available ("L" suffix).

### Features

- Small 8 Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- 3750$V_{RMS}$ Input/Output Isolation
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Current Limiting 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

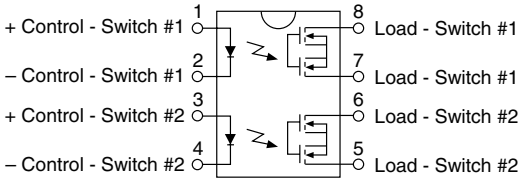
### Ordering Information

| Part # | Description |
|---|---|
| LAA100L | 8 Pin DIP (50/Tube) |
| LAA100PL | 8 Pin Flatpack (50/Tube) |
| LAA100PLTR | 8 Pin Flatpack (1000/Reel) |
| LAA100LS | 8 Pin Surface Mount (50/Tube) |
| LAA100LSTR | 8 Pin Surface Mount (1000/Reel) |

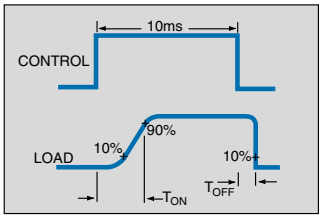
### Pin Configuration

**LAA100/LAA100L Pinout**

AC/DC Configuration




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



## Absolute Maximum Ratings (@ 25° C)

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

[1] Derate Linearly 1.33 mw/°C

[2] Derate Linearly 6.67 mw/°C

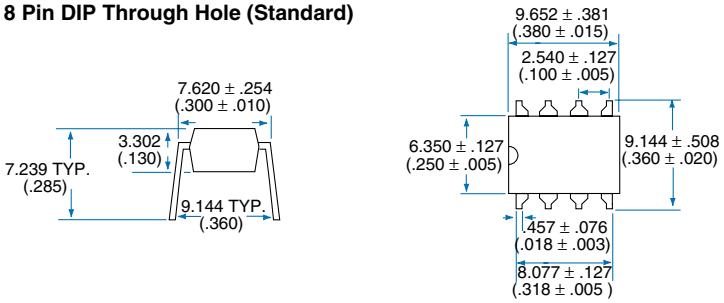
*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device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

## Electrical Characteristics

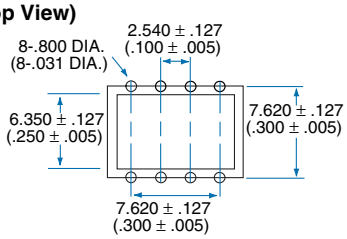
| Parameter | Conditions | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Output Characteristics @ 25°C** | | | | | | |
| Load Voltage (Peak) | - | $V_L$ | - | - | 350 | V |
| Load Current (Continuous) | | | | | | |
| AC/DC Configuration | - | $I_L$ | - | - | 120 | mA |
| Peak Load Current | 10ms | $I_{LPK}$ | - | - | 350 | mA |
| On-Resistance | | | | | | |
| AC/DC Configuration | $I_L$=120mA | $R_{ON}$ | - | - | 25 | Ω |
| Off-State Leakage Current | $V_L$=350V | $I_{LEAK}$ | - | - | 1 | µA |
| Switching Speeds | | | | | | |
| Turn-On | $I_F$=5mA, $V_L$=10V | $T_{ON}$ | - | - | 5 | ms |
| Turn-Off | $I_F$=5mA, $V_L$=10V | $T_{OFF}$ | - | | 5 | ms |
| Output Capacitance | 50V; f=1MHz | $C_{OUT}$ | - | 35 | - | pF |
| Capacitance | | | | | | |
| Input to Output | - | - | - | 3 | - | pF |
| **Input Characteristics @ 25°C** | | | | | | |
| Input Control Current | $I_L$=120mA | $I_F$ | 5 | - | 50 | mA |
| Input Dropout Current | - | $I_F$ | 0.4 | 0.7 | - | mA |
| Input Voltage Drop | $I_F$=5mA | $V_F$ | 0.9 | 1.2 | 1.4 | V |
| Reverse Input Voltage | - | $V_R$ | - | - | 5 | V |
| Reverse Input Current | $V_R$=5V | $I_R$ | - | - | 10 | µA |

## Mechanical Dimensions

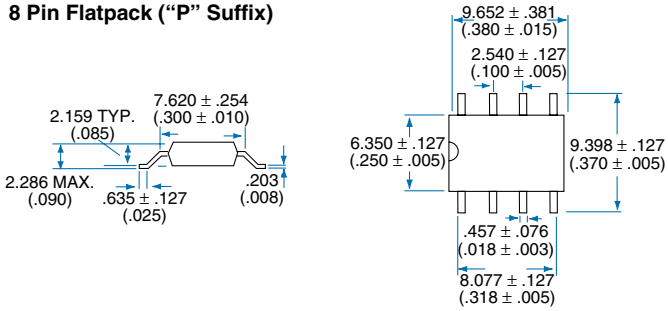
### 8 Pin DIP Through Hole (Standard)



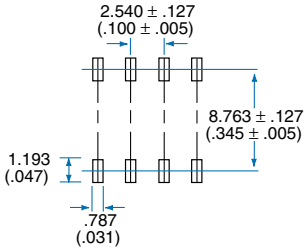

### PC Board Pattern (Top View)



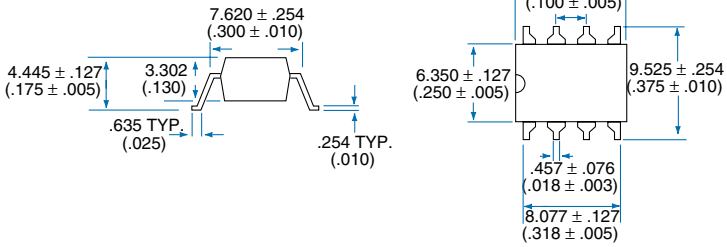

### 8 Pin Flatpack ("P" Suffix)



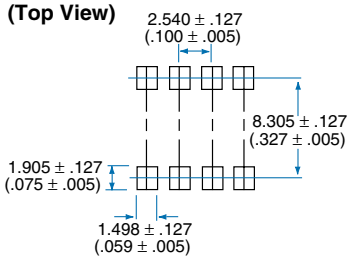

### PC Board Pattern (Top View)




### 8 Pin DIP Surface Mount ("S" Suffix)



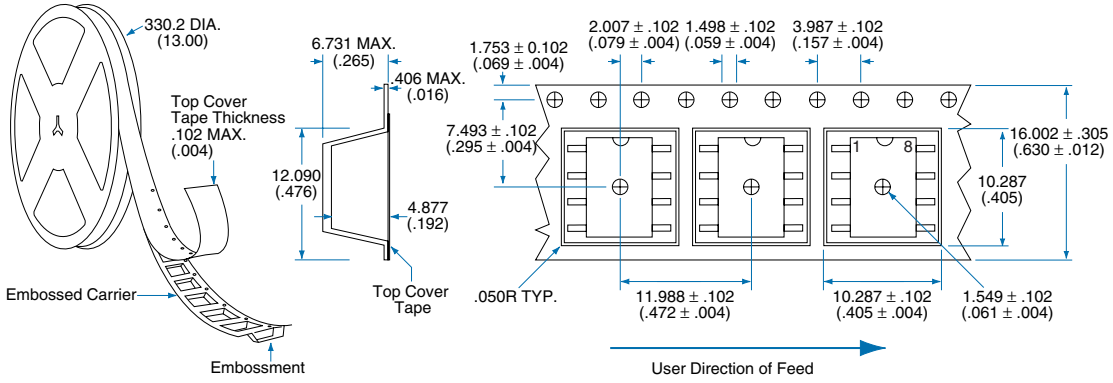

### PC Board Pattern (Top View)



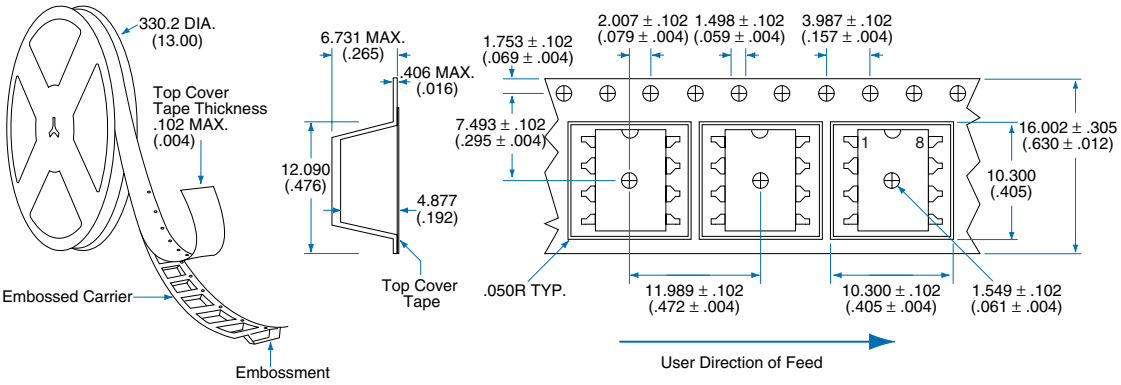

Dimensions
mm
(inches)

## Mechanical Dimensions

### Tape and Reel Packaging for 8 Pin Flatpack Package




### Tape and Reel Packaging for 8 Pin Surface Mount Package




Dimensions
mm
(inches)

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