



	LCA210L	Units
Blocking Voltage	350	V
Load Current	100	mA
Max R_{ON}	35	Ω

Features

- Small 8 Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- 3750VRMS Input/Output Isolation
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Surface Mount and Tape & Reel Versions Available

Applications

- 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

Description

The LCA210L is a common input 1-Form 2A solid state relay which has two independent optically coupled MOSFETs controlled by a common input signal. The efficient current limiting MOSFET switches and photovoltaic die use Clare's patented OptoMOS® architecture to provide 3750 V_{RMS} of input to output isolation. The optically coupled input is controlled by highly efficient GaAIAs infrared LEDs. Common input OptoMOS relays can replace standard dual pole relays in a variety of applications. The common input relay eliminates the need to make an external circuit connection when both poles are controlled by a common signal.

Approvals

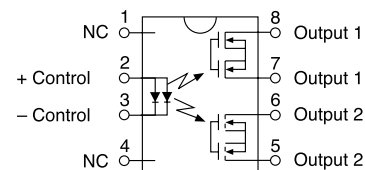
- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- Certified to:
 - EN 60950
 - EN 41003
 - IEC 950
 - AS/NZS 3260

Ordering Information

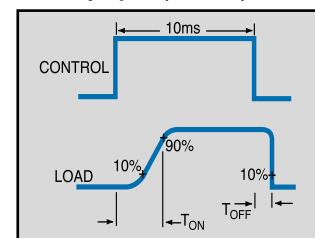
Part #	Description
LCA210L	8 Pin DIP (50/Tube)
LCA210LS	8 Pin Surface Mount (50/Tube)
LCA210LSTR	8 Pin Surface Mount (1000/Reel)

Pin Configuration

LCA210L Pinout



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	-	-	100	mA
Peak (10ms)	-	-	1	A
Reverse Input Voltage	-	-	5	V
Relay Blocking Voltage	-	-	350	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 Package (10 Seconds Max.)	-	-	+220	°C

¹ Derate Linearly 1.33 mW/°C

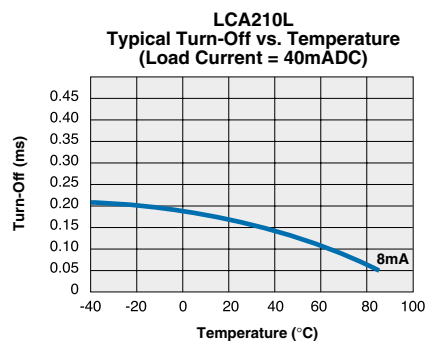
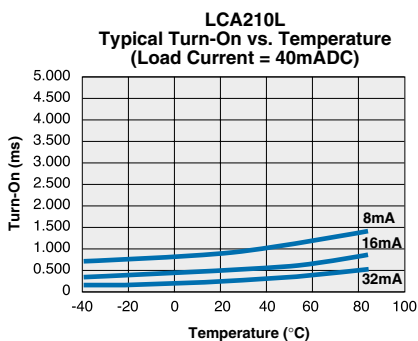
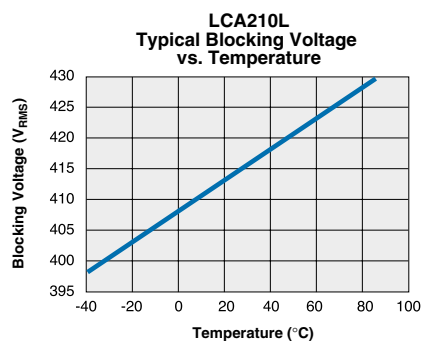
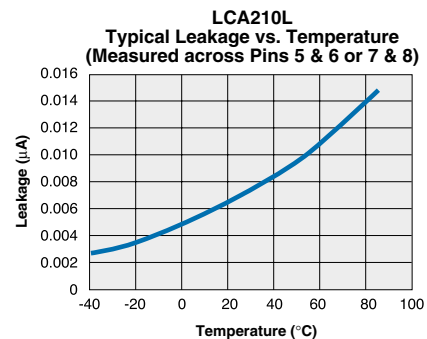
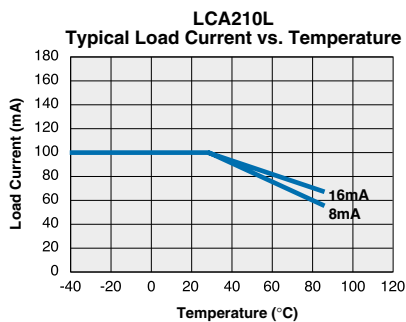
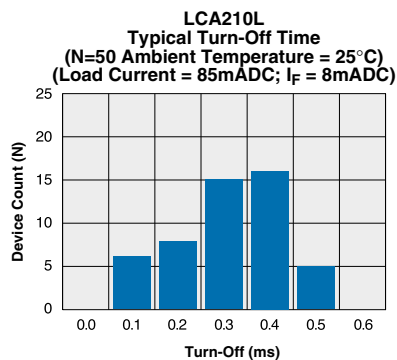
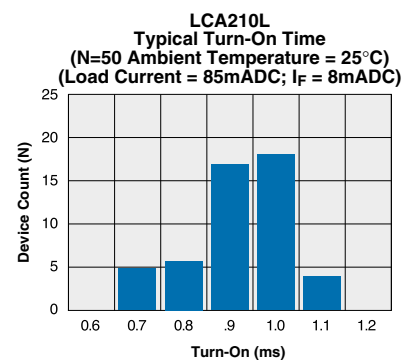
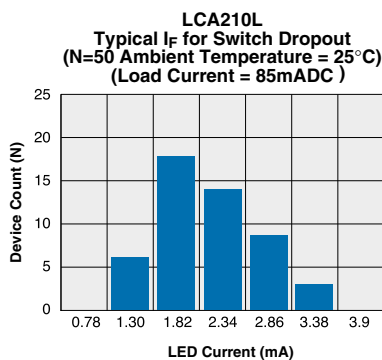
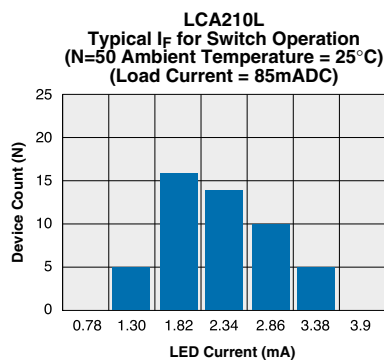
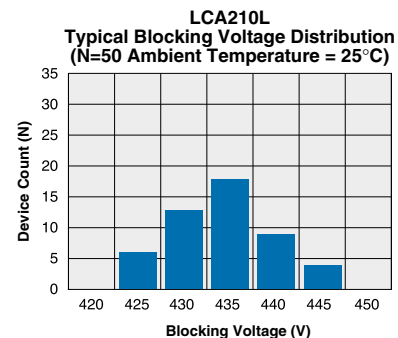
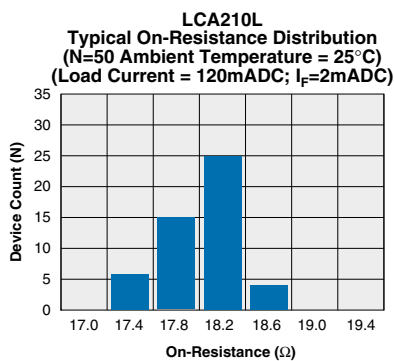
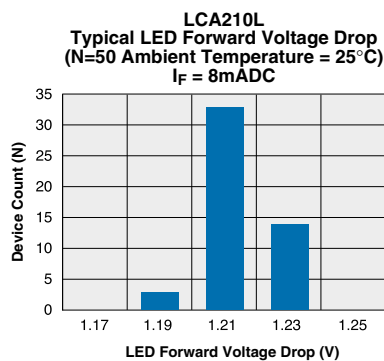
² Derate Linearly 6.67 mW/°C

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

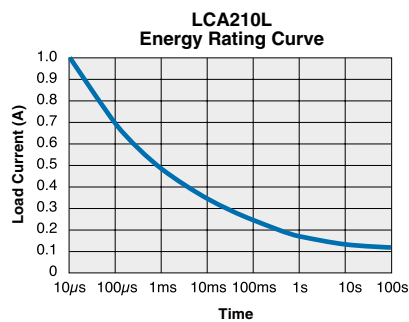
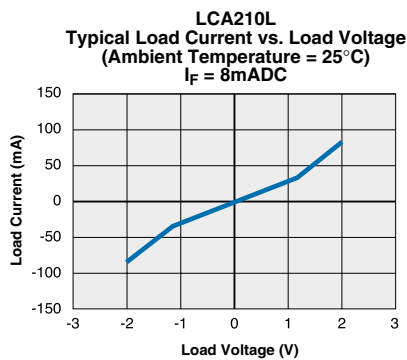
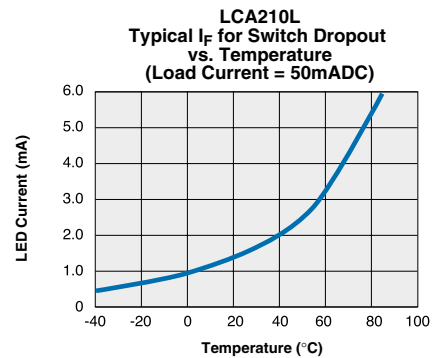
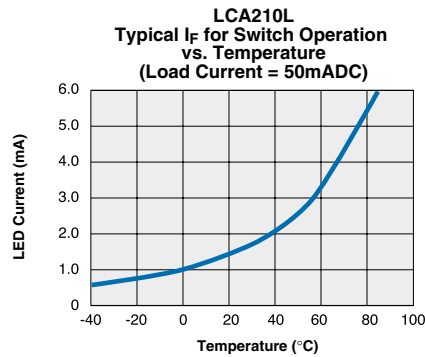
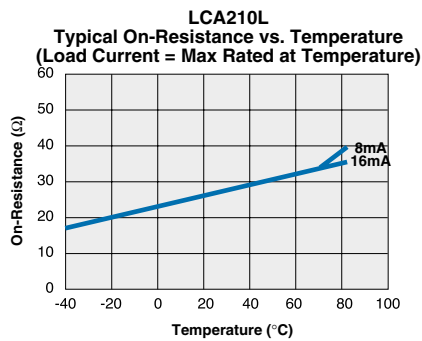
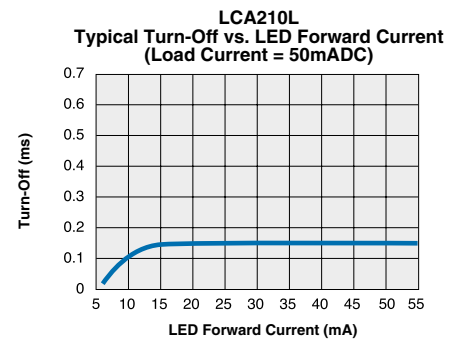
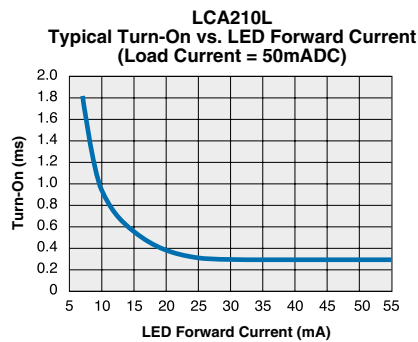
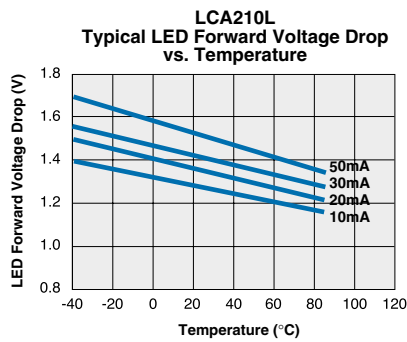
Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Load Current (Continuous)	-	I _L	-	-	85	mA
Peak Load Current	10ms max	I _{LPK}	-	-	170	mA
On-Resistance	I _L =85mA	R _{ON}	-	-	35	Ω
Off-State Leakage Current	V _L =350V	I _{LEAK}	-	-	1	μA
Switching Speeds						
Turn-On	I _F =8mA, V _L =10V	T _{ON}	-	-	4	ms
Turn-Off	I _F =8mA, V _L =10V	T _{OFF}	-	-	4	ms
Output Capacitance	50V; f=1MHz	C _{OUT}	-	25	-	pF
Current Limit	I _F =8mA	I _{CL}	130	170	210	mA
*Input Characteristics @ 25°C						
Input Control Current	I _L =120mA	I _F	8	-	100	mA
Input Dropout Current	-	-	0.8	1.4	-	mA
Input Voltage Drop	I _F =8mA	V _F	0.9	1.2	1.4	V
Reverse Input Voltage	-	V _R	-	-	5	V
Reverse Input Current	V _R =5V	I _R	-	-	20	μA
Input to Output Capacitance	-	C _{I/O}	-	3	-	pF
Input to Output Isolation	-	V _{I/O}	3750	-	-	V _{RMS}

*Input characteristics represent requirements of two parallel connected LEDs.

PERFORMANCE DATA*


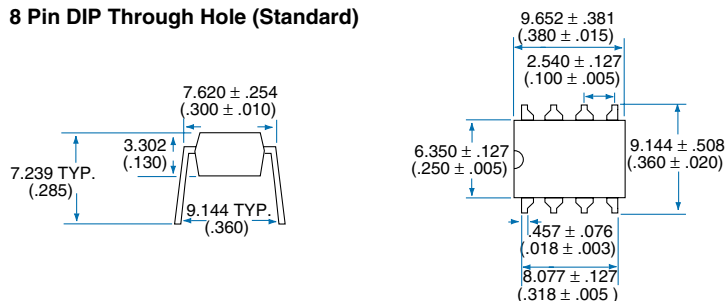
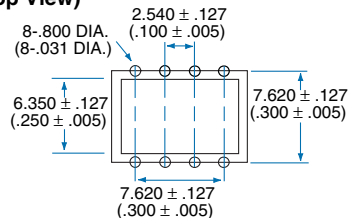
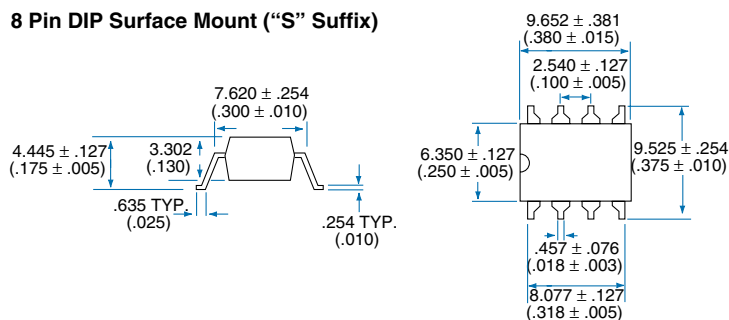
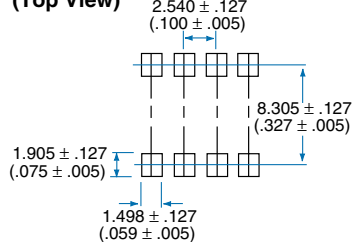
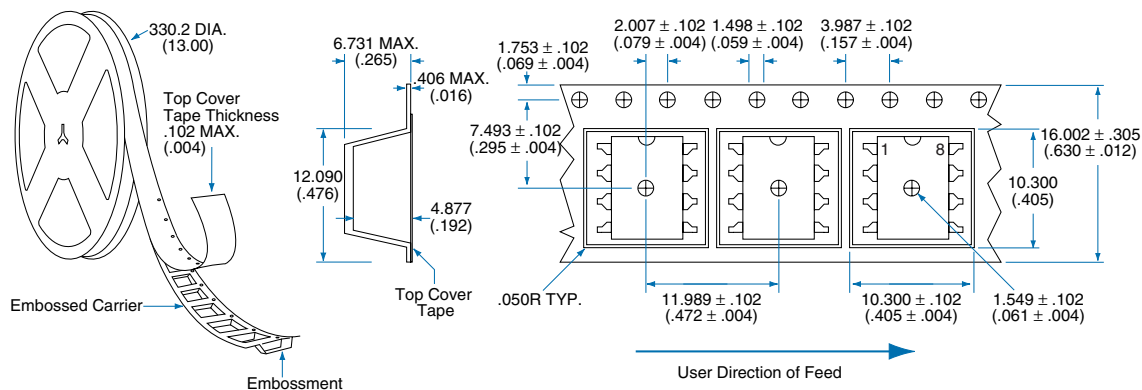
*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

PERFORMANCE DATA*



*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.

MECHANICAL DIMENSIONS

8 Pin DIP Through Hole (Standard)

PC Board Pattern (Top View)

8 Pin DIP Surface Mount ("S" Suffix)

PC Board Pattern (Top View)

Tape and Reel Packaging for 8 Pin Surface Mount Package


Dimensions
mm
(inches)



CLARE

For additional information please visit our website at: www.clare.com

Clare, Inc. makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication and reserves the right to make changes to specifications and product descriptions at any time without notice. Neither circuit patent licenses nor indemnity are expressed or implied. Except as set forth in Clare's Standard Terms and Conditions of Sale, Clare, Inc. assumes no liability whatsoever, and disclaims any express or implied warranty, relating to its products including, but not limited to, the implied warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property right.

The products described in this document are not designed, intended, authorized or warranted for use as components in systems intended for surgical implant into the body, or in other applications intended to support or sustain life, or where malfunction of Clare's product may result in direct physical harm, injury, or death to a person or severe property or environmental damage. Clare, Inc. reserves the right to discontinue or make changes to its products at any time without notice.

Specification: DS-LCA210L-R1.0
©Copyright 2002, Clare, Inc.
OptoMOS® is a registered trademark of Clare, Inc.
All rights reserved. Printed in USA.
6/21/02