

## SINGLE POLE OptoMOS® RELAYS

### LCA110/LCA110L



### DESCRIPTION

LCA110 is a 350V, 120mA, 35Ω 1-Form-A relay. It provides a perfect solution where high sensitivity is required. Current limiting version is 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

### 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

### OPTIONS / SUFFIXES

- L: Current Limiting
- S: Surface Mount Package
- TR: Tape & Reel

### APPLICATIONS

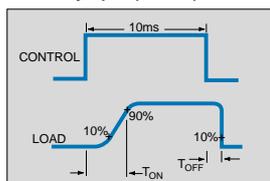
- Telecommunications
  - Telecom Switching
  - Tip/Ring Circuits
  - Modem Switching (Laptop, Notebook, Pocket Size)
  - Hookswitch
  - Dial Pulsing
  - Ground Start
  - Ringer Injection
- Instrumentation
  - Multiplexers
  - Data Acquisition
  - Electronic Switching
  - I/O Subsystems
  - Meters (Watt-Hour,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

### RATINGS (@ 25° C)

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 <sup>1</sup>	mW
Input Control Current Peak (10ms)	-	-	50	mA
Reverse Input Voltage	-	-	5	V
Total Power Dissipation	-	-	800 <sup>2</sup>	mW
Capacitance Input to Output	-	3	-	pF
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 (10 Seconds Max.)	-	-	+220	°C

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

Switching Characteristics of Normally Open (Form A) Devices



Note: For Mechanical Dimensions See Pages 408-415

www.clare.com



## SINGLE POLE OptoMOS® RELAYS

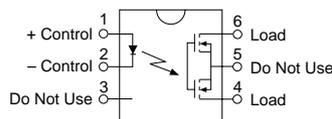
### LCA110/LCA110L

### SPECIFICATIONS

PARAMETER	CONDITIONS	SYMBOL	LCA110			LCA110L			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Output Characteristics @ 25°C</b>									
Load Voltage (Peak)	-	$V_L$	-	-	350	-	-	350	V
Load Current (Continuous)	AC/DC Configuration	$I_L$	-	-	120	-	-	120	mA
	DC Configuration	$I_L$	-	-	200	-	-	200	mA
Peak Load Current	10ms	$I_{LPK}$	-	-	350	-	-	-	mA
On-Resistance	AC/DC Configuration	$R_{ON}$	-	23	35	-	19	35	$\Omega$
	DC Configuration	$R_{ON}$	-	7	10	-	7	10	$\Omega$
Off-State Leakage Current	$V_L=350V$	$I_{LEAK}$	-	-	1	-	-	1	$\mu A$
Switching Speeds	Turn-On	$T_{ON}$	-	-	3	-	-	3	ms
	Turn-Off	$T_{OFF}$	-	-	3	-	-	3	ms
Output Capacitance	50V; f=1MHz	$C_{OUT}$	-	25	-	-	25	-	pF
Load Current Limiting	-	$I_{CL}$	-	-	-	130	170	210	mA
<b>Input Characteristics @ 25°C</b>									
Input Control Current	$I_L=120mA$	$I_F$	2	-	50	2	-	50	mA
Input Dropout Current	-	$I_F$	0.4	0.7	-	0.4	0.7	-	mA
Input Voltage Drop	$I_F=5mA$	$V_F$	0.9	1.2	1.4	0.9	1.2	1.4	V
Reverse Input Voltage	-	$V_R$	-	-	5	-	-	5	V
Reverse Input Current	$V_R=5V$	$I_R$	-	-	10	-	-	10	$\mu A$
Input to Output Capacitance	-	$C_{I/O}$	-	3	-	-	3	-	pF
Input to Output Isolation	-	$V_{I/O}$	3750	-	-	3750	-	-	$V_{RMS}$

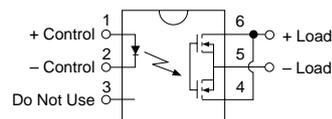
#### LCA110/LCA110L Pinout

AC/DC Configuration



#### LCA110/LCA110L Pinout

DC Only Configuration

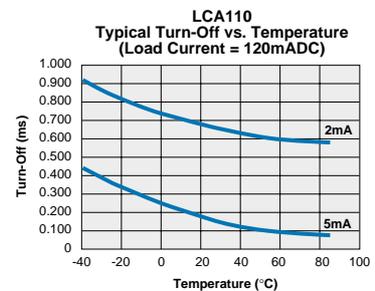
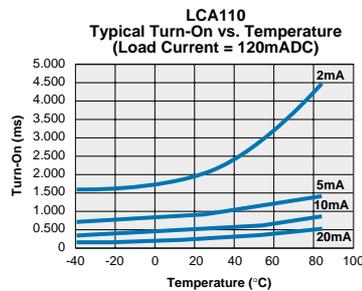
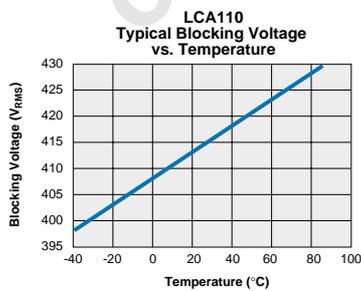
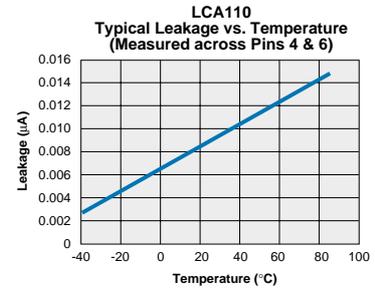
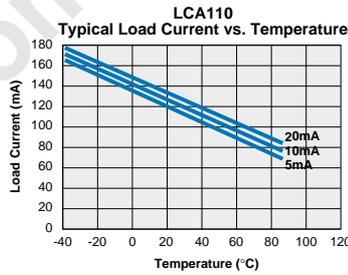
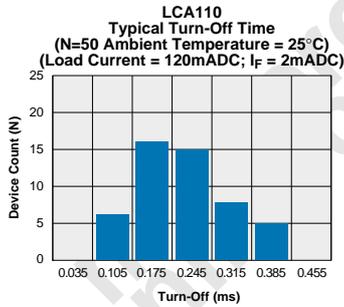
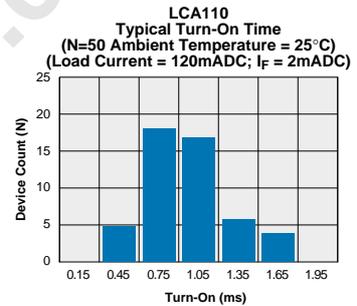
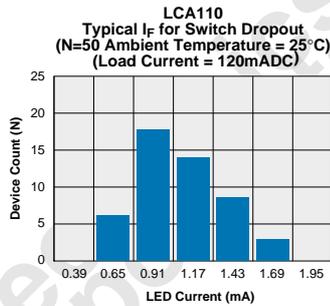
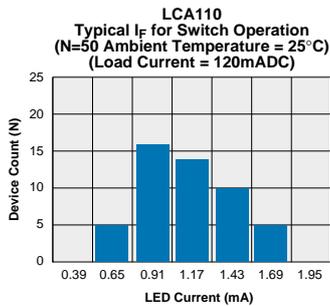
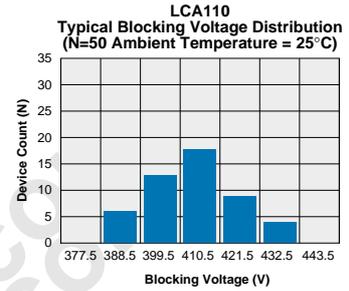
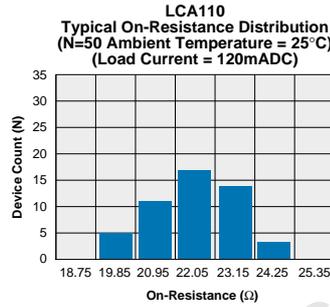
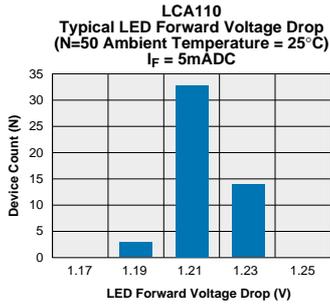


Note: For Mechanical Dimensions See Pages 408-415

SINGLE POLE OptoMOS® RELAYS

LCA110/LCA110L

PERFORMANCE DATA

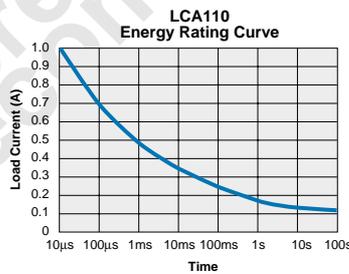
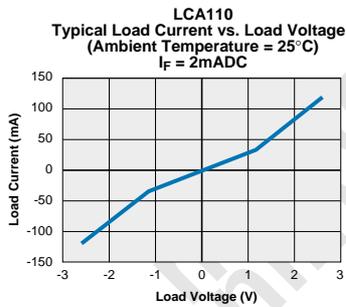
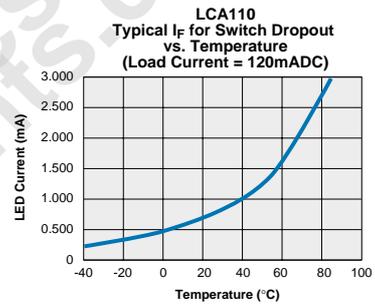
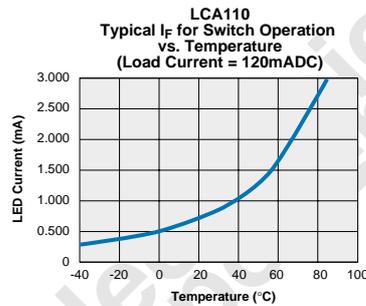
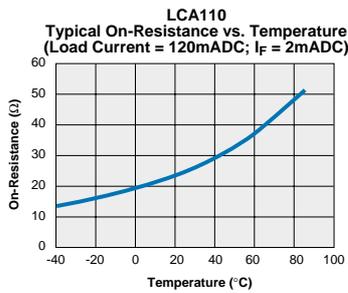
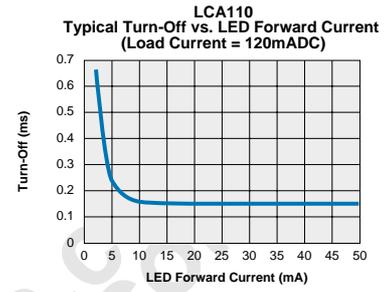
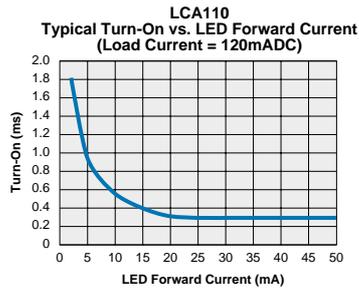
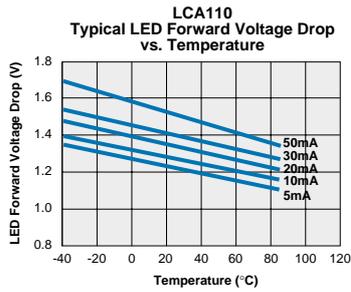




## SINGLE POLE OptoMOS® RELAYS

### LCA110/LCA110L

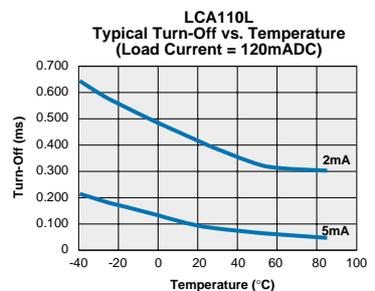
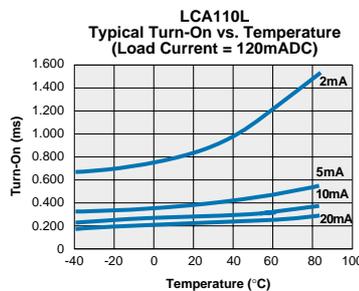
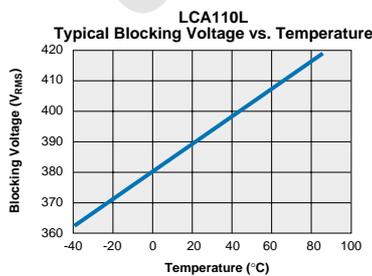
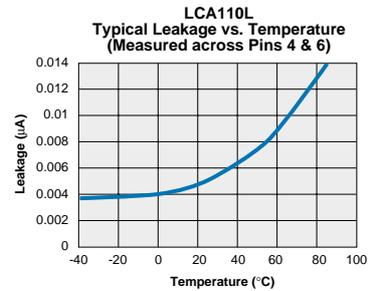
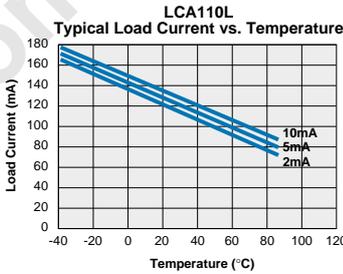
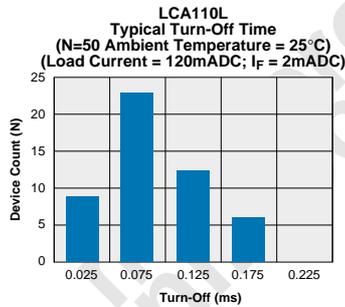
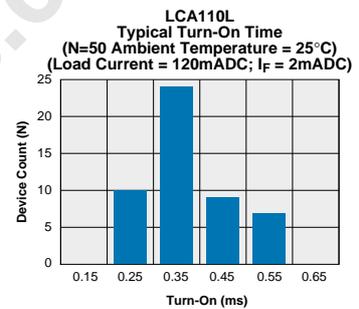
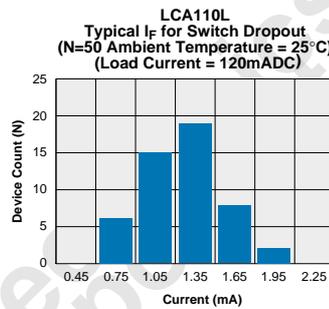
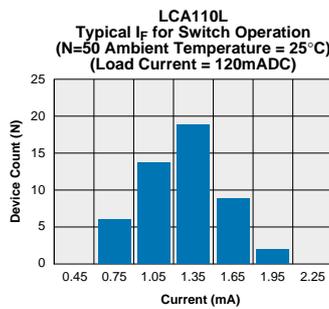
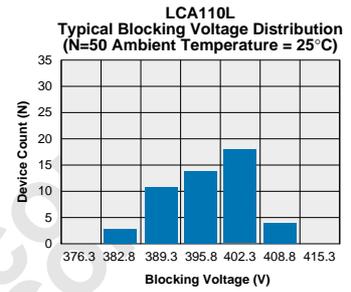
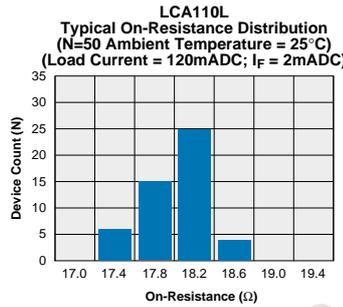
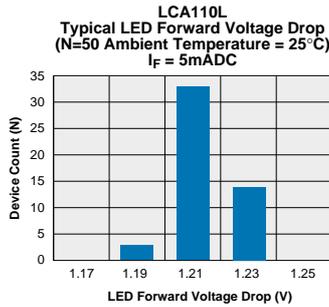
### PERFORMANCE DATA



SINGLE POLE OptoMOS® RELAYS

LCA110/LCA110L

PERFORMANCE DATA





## SINGLE POLE OptoMOS® RELAYS

### LCA110/LCA110L

### PERFORMANCE DATA

