



Parameter	Ratings	Units
Blocking Voltage	350	V _P
Load Current	120	mA
Max On-resistance	35	Ω

Features

- Small 6-Pin Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- Arc-Free With No Snubbing Circuits
- 3750V_{rms} Input/Output Isolation
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Surface Mount Tape & Reel Version Available

Applications

- Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
 - Modem Switching (Laptop, Notebook, Pocket Size)
 - Hook Switch
 - Dial Pulsing
 - Ground Start
 - Ringing 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 LCB110 is a 1-Form-B (normally closed) relay which uses optically coupled MOSFET technology to provide 3750V_{rms} of input to output isolation. The efficient MOSFET switches and photovoltaic die use Clare's patented OptoMOS® architecture. A highly efficient GaAIAs infrared LED controls the optically coupled output. The LCB110 has low on-resistance and is well suited for most applications requiring a normally closed relay.

Approvals

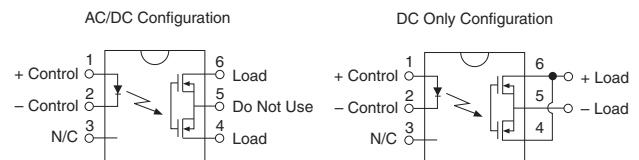
- UL Recognized Component: File # E76270
- CSA Certified Component: Certificate # 1175739
- EN/IEC 60950-1 Compliant

Ordering Information

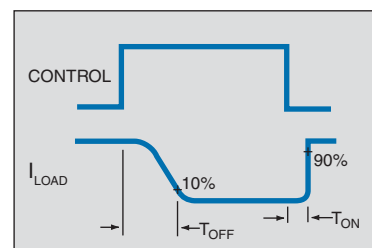
Part #	Description
LCB110	6-Pin DIP (50/Tube)
LCB110S	6-Pin Surface Mount (50/Tube)
LCB110STR	6-Pin Surface Mount (1000/Reel)

* For other packaging options consult factory.

Pin Configuration



Switching Characteristics of Normally Closed (Form B) Devices



Absolute Maximum Ratings

Parameter	Ratings	Units
Blocking Voltage	350	V _P
Reverse Input Voltage	5	V
Input Control Current	50	mA
Peak (10ms)	1	A
Input Power Dissipation ¹	150	mW
Total Power Dissipation ²	800	mW
Isolation voltage Input to Output	3750	V _{rms}
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

¹ Derate Linearly 3.33 mW / °C

² Derate Linearly 6.67 mW / °C

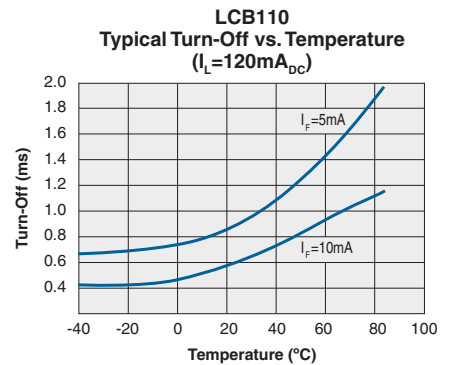
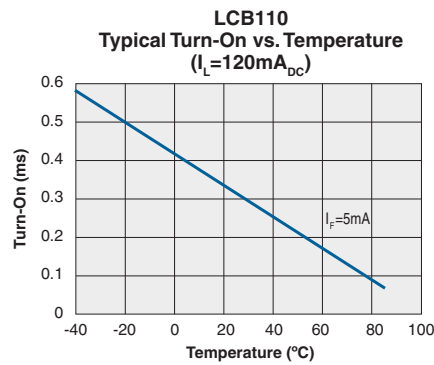
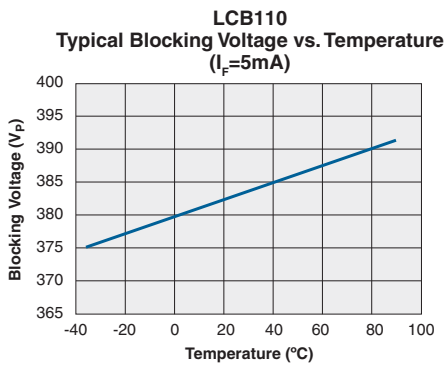
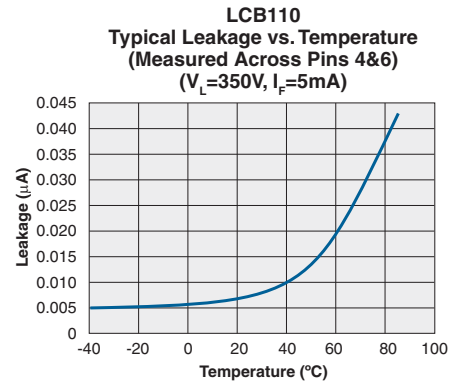
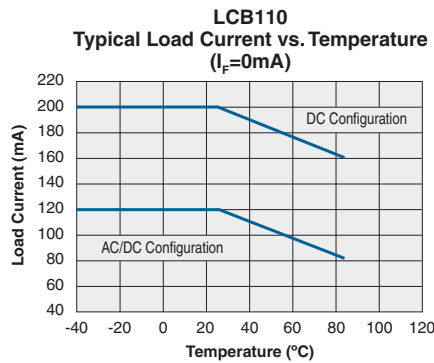
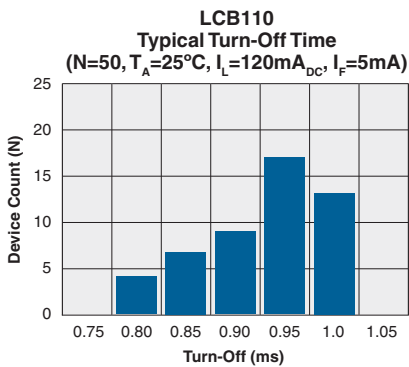
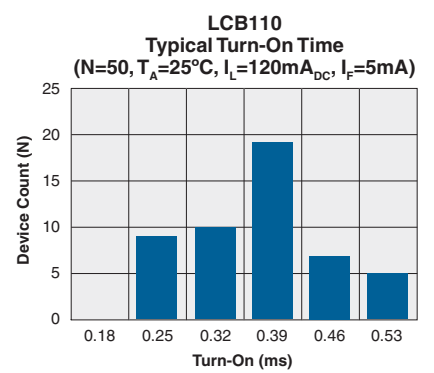
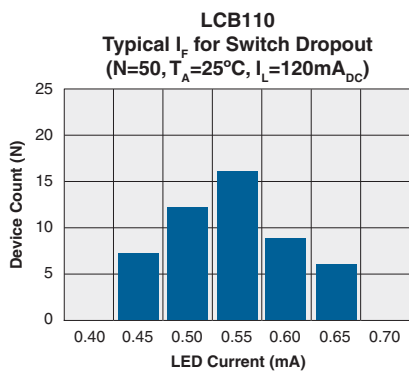
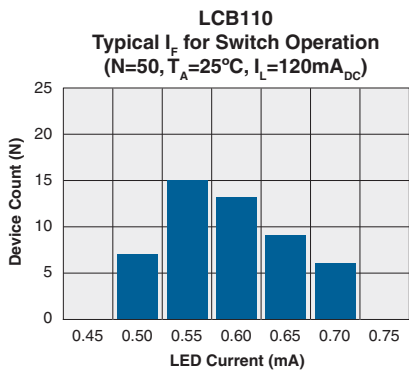
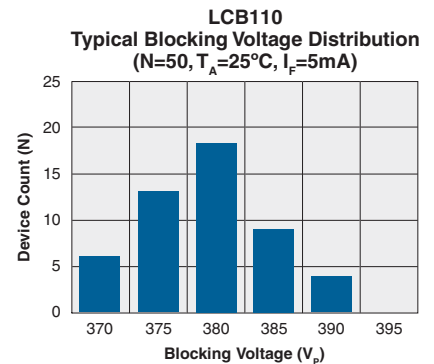
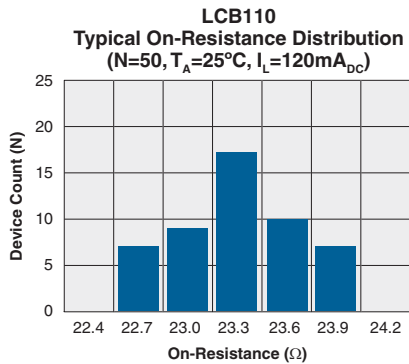
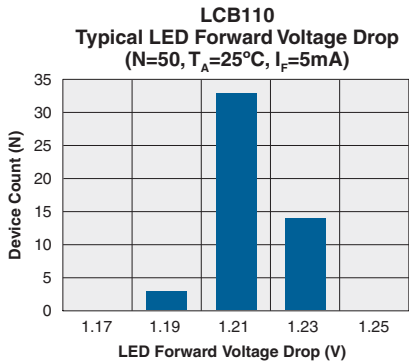
Electrical absolute maximum ratings are at 25°C

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 conditions beyond those indicated in the operational sections of this data sheet is not implied.

Electrical Characteristics

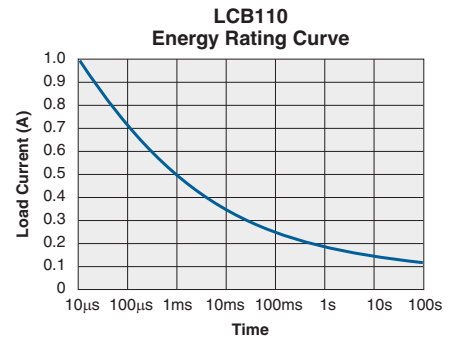
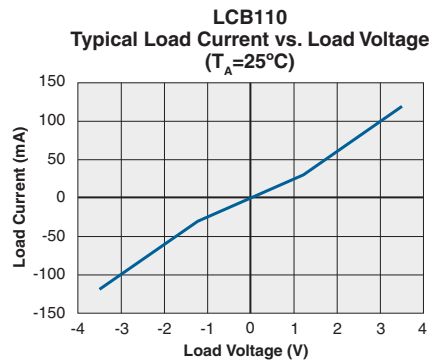
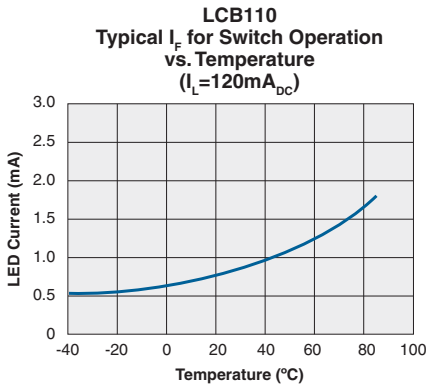
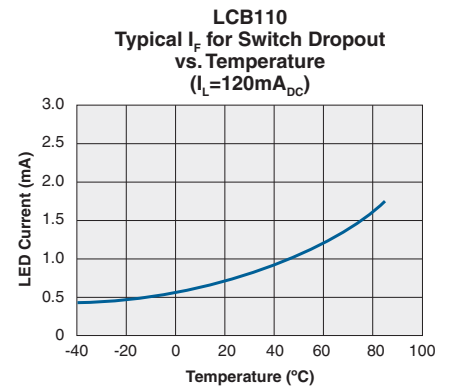
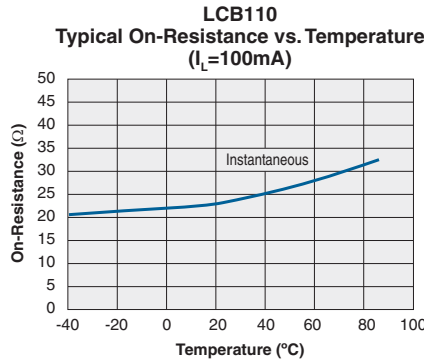
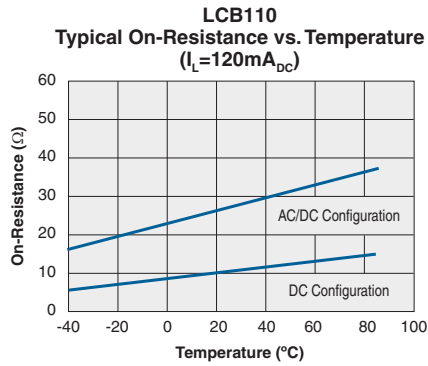
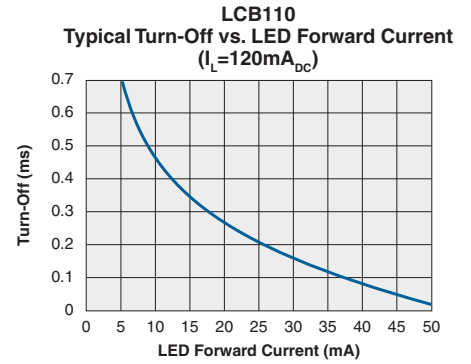
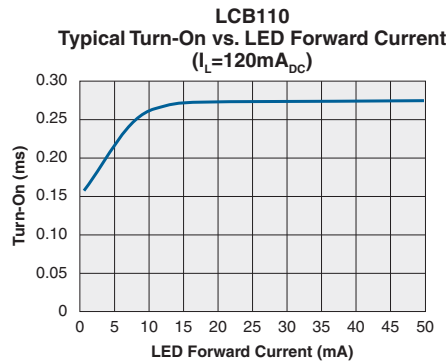
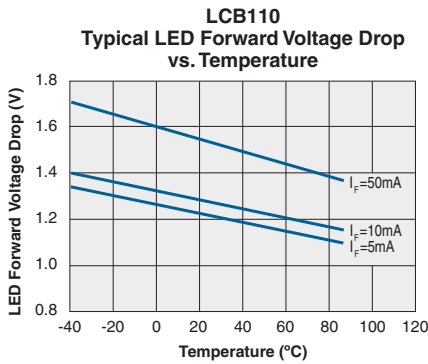
Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Load Current Continuous						
AC/DC Configuration	-	I _L	-	-	120	mA
DC Configuration					200	
Peak Load Current	t=10ms	I _L	-	-	350	mA
On-Resistance						
AC/DC Configuration	I _L =120mA	R _{ON}	-	23	35	Ω
DC Configuration	I _L =200mA		-	7	10	
Off-State Leakage Current	I _F =5mA, V _L =350V _P	I _{LEAK}	-	-	1	μA
Switching Speeds						
Turn-On	I _F =5mA, V _L =10V	t _{ON}	-	0.38	3	ms
Turn-Off		t _{OFF}	-	0.93	3	
Output Capacitance	I _F =5mA, 50V, f=1MHz	C _{OUT}	-	25	-	pF
Input Characteristics @ 25°C						
Input Control Current	I _L =120mA	I _F	-	-	5	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 Current	V _R =5V	I _R	-	-	10	μA
Common Characteristics @ 25°C						
Input to Output Capacitance	-	C _{IO}	-	3	-	pF

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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Manufacturing Information

Soldering

For proper assembly, the component must be processed in accordance with the current revision of IPC/JEDEC standard J-STD-020. Failure to follow the recommended guidelines may cause permanent damage to the device resulting in impaired performance and/or a reduced lifetime expectancy.

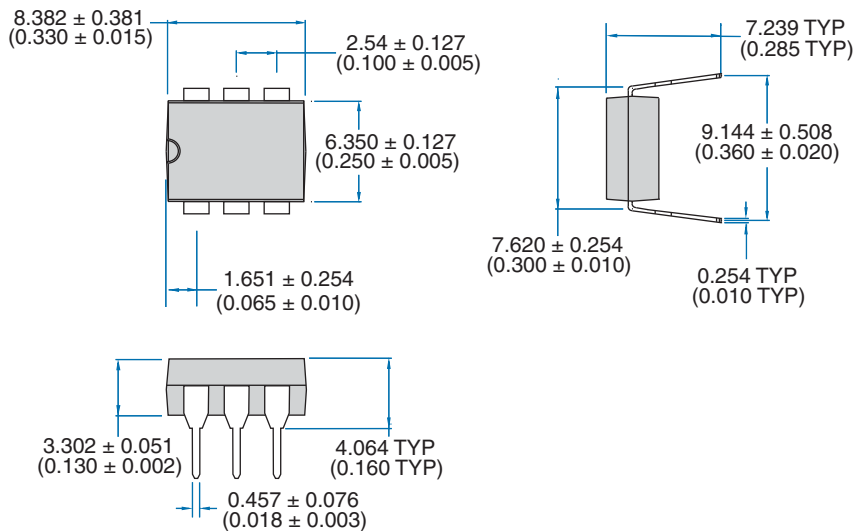
Washing

Clare does not recommend ultrasonic cleaning or the use of chlorinated solvents.

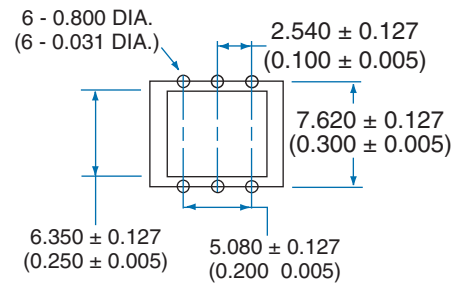


MECHANICAL DIMENSIONS

6-Pin DIP Thru-Hole Package

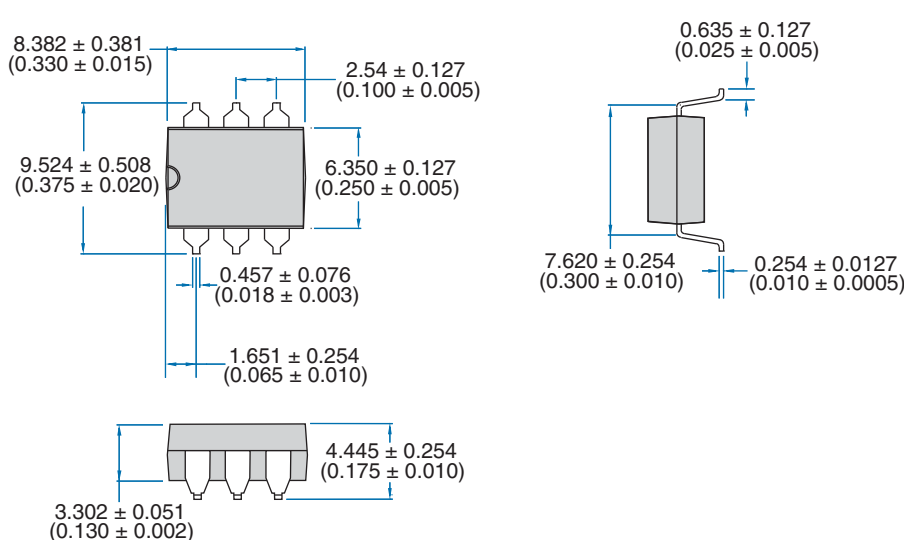


PC Board Pattern

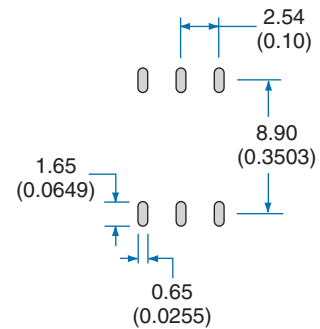


Dimensions
mm
(inches)

6-Pin Surface Mount Package ("S" Suffix)



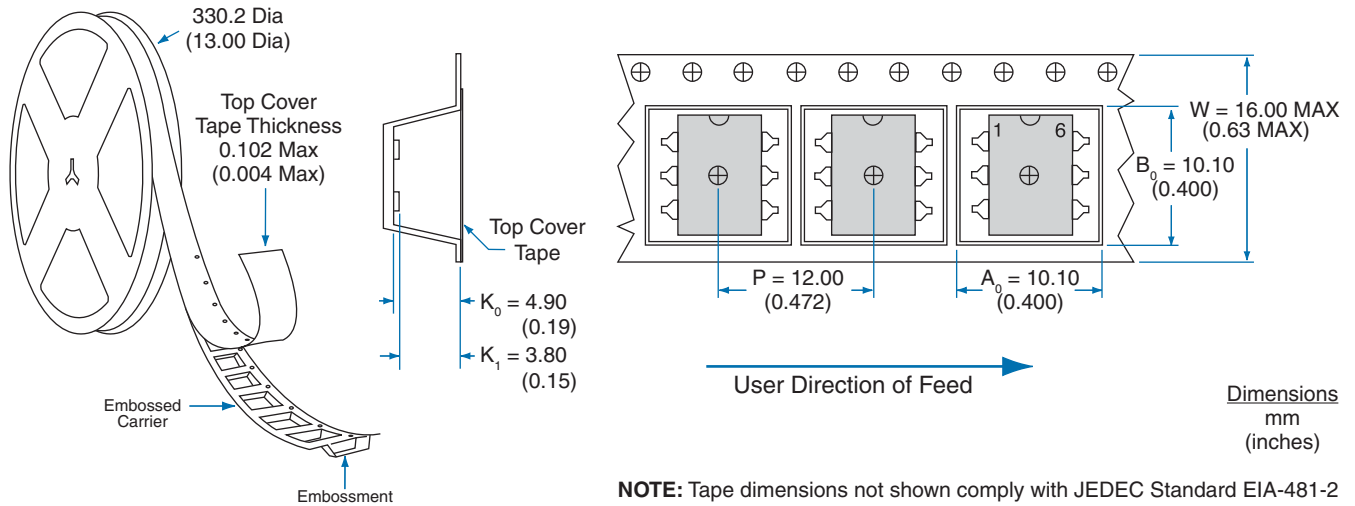
Recommended PCB Land Pattern



Dimensions
mm
(inches)

MECHANICAL DIMENSIONS (Cont.)

Tape and Reel Packaging for 6-Pin “S” Suffix Parts



NOTE: Tape dimensions not shown comply with JEDEC Standard EIA-481-2

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