



	LCA127	Units
Load Voltage	250	V
Load Current	200	mA
Max R <sub>ON</sub>	10	Ω

### Description

LCA127 is a 250V, 200mA, 10Ω 1-Form-A relay. It features low on-resistance.

### 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
- 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:
  - BS EN 60950:1992 (BS7002:1992) Certificate #:7344
  - BS EN 41003:1993 Certificate #:7344

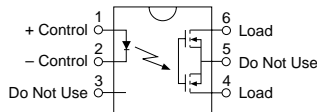
### Ordering Information

Part #	Description
LCA127	6 Pin DIP (50/Tube)
LCA127S	6 Pin Surface Mount (50/Tube)
LCA127STR	6 Pin Surface Mount (1000/Reel)

### Pin Configuration

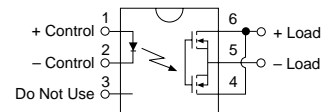
#### LCA127/L127L Pinout

AC/DC Configuration

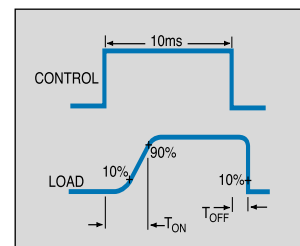


#### LCA127/LCA127L Pinout

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	-	-	50	mA
Peak (10ms)	-	-	1	A
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
Flatpack/Surface Mount Pkg (10 Seconds Max.)	-	-	+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. 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.*

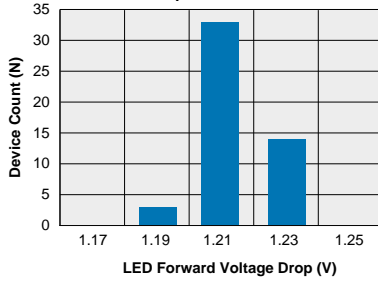
### Electrical Characteristics

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>Output Characteristics @ 25°C</b>						
Load Voltage (Peak)	-	V <sub>L</sub>	-	-	250	V
Load Current* (Continuous)						
AC/DC Configuration	-	I <sub>L</sub>	-	-	200	mA
DC Configuration	-	I <sub>L</sub>	-	-	350	mA
Peak Load Current	10ms	I <sub>LPK</sub>	-	-	400	mA
On-Resistance						
AC/DC Configuration	I <sub>L</sub> =200mA	R <sub>ON</sub>	-	8	10	Ω
DC Configuration	I <sub>L</sub> =200mA	R <sub>ON</sub>	-	2	3	Ω
Off-State Leakage Current	V <sub>L</sub> =250V	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>	-	50	-	pF
<b>Input Characteristics @ 25°C</b>						
Input Control Current	I <sub>L</sub> = 200mA	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>

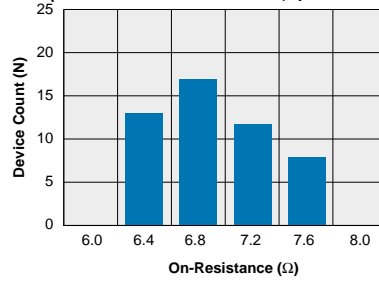
\*NOTE: If both poles operate simultaneously load current must be derated so as not to exceed the package power dissipation value.

Performance Data

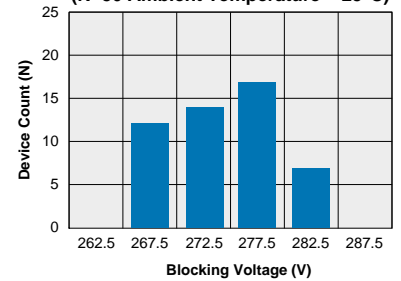
**LCA127**  
Typical LED Forward Voltage Drop  
(N=50 Ambient Temperature = 25°C)  
I<sub>F</sub> = 5mADC



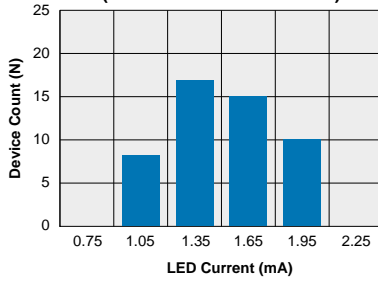
**LCA127**  
Typical On-Resistance Distribution  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 170mADC; I<sub>F</sub> = 5mADC)



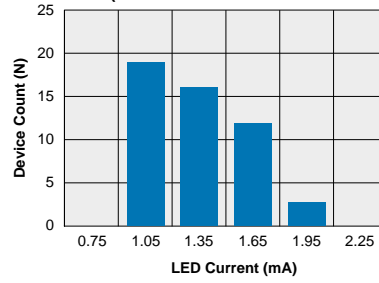
**LCA127**  
Typical Blocking Voltage Distribution  
(N=50 Ambient Temperature = 25°C)



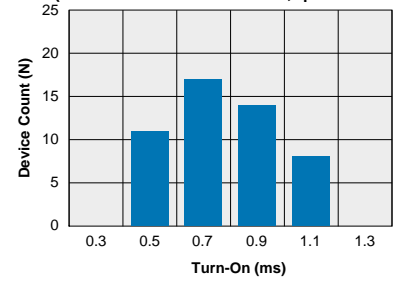
**LCA127**  
Typical I<sub>F</sub> for Switch Operation  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 170mADC)



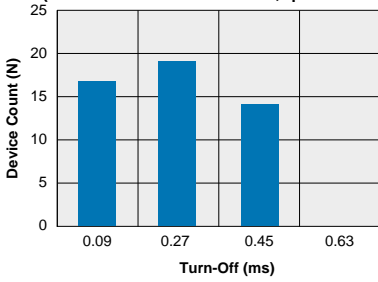
**LCA127**  
Typical I<sub>F</sub> for Switch Dropout  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 170mADC)



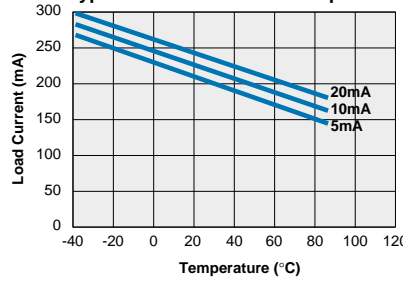
**LCA127**  
Typical Turn-On Time  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 170mADC; I<sub>F</sub> = 5mADC)



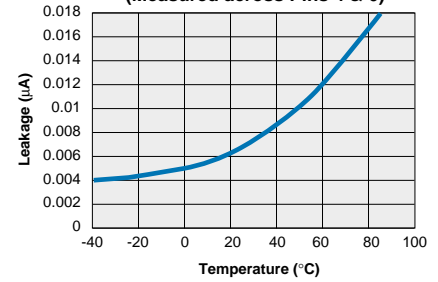
**LCA127**  
Typical Turn-Off Time  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 170mADC; I<sub>F</sub> = 5mADC)



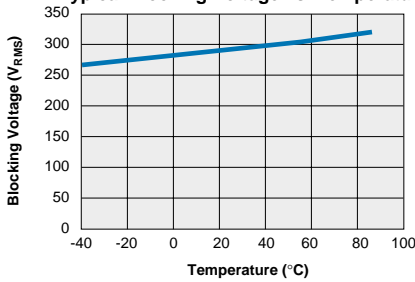
**LCA127**  
Typical Load Current vs. Temperature



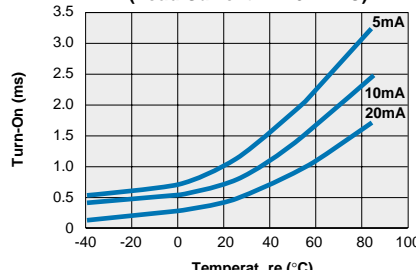
**LCA127**  
Typical Leakage vs. Temperature  
(Measured across Pins 4 & 6)



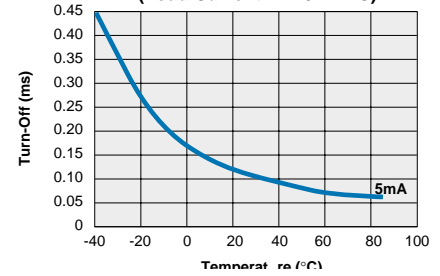
**LCA127**  
Typical Blocking Voltage vs. Temperature



**LCA127**  
Typical Turn-On vs. Temperature  
(Load Current = 170mADC)

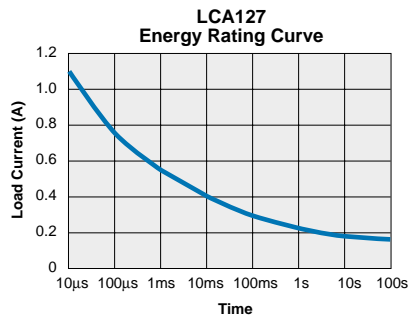
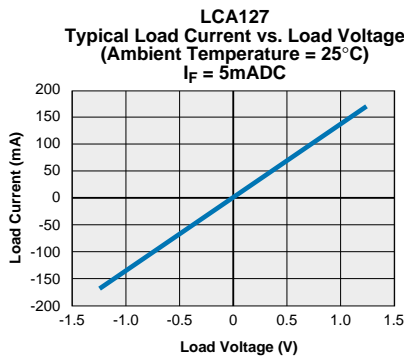
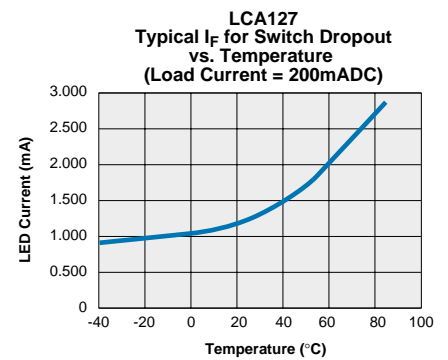
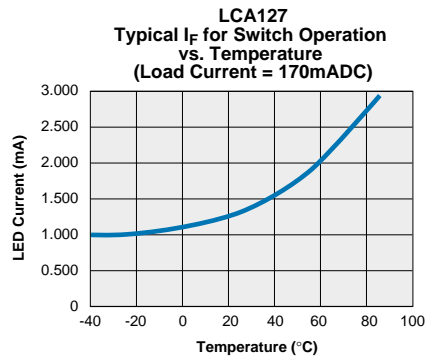
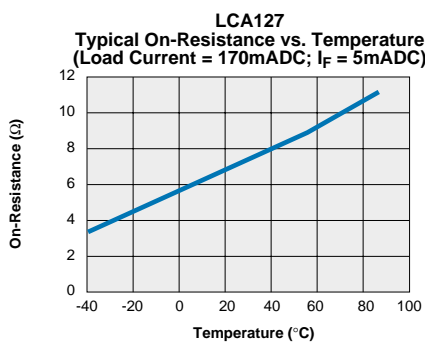
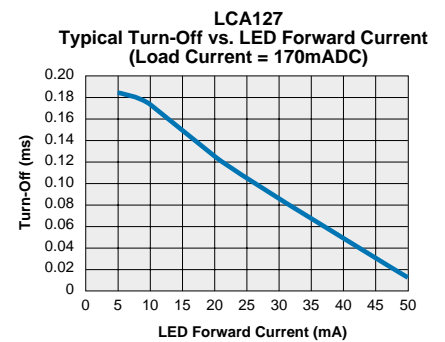
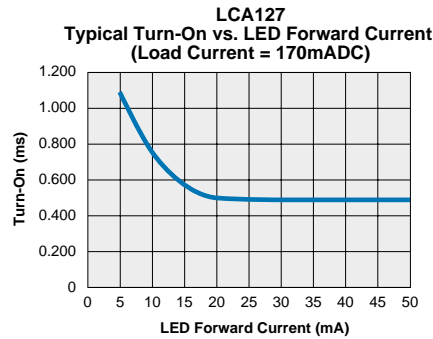
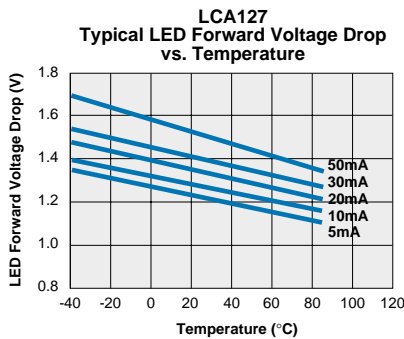


**LCA127**  
Typical Turn-Off vs. Temperature  
(Load Current = 170mADC)



\*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.

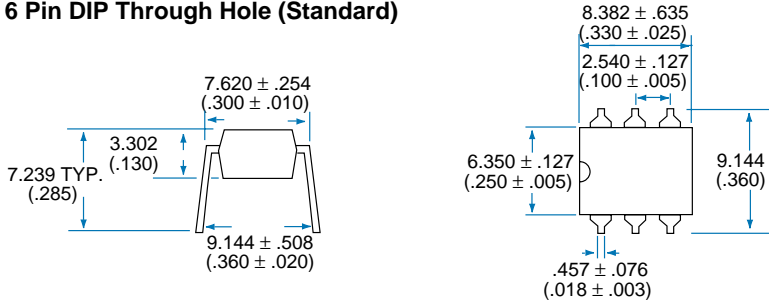
Performance Data



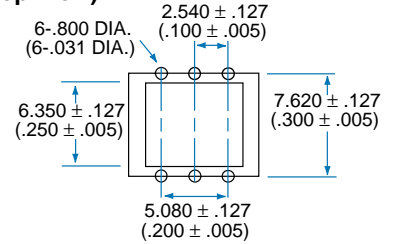
\*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

Mechanical Dimensions

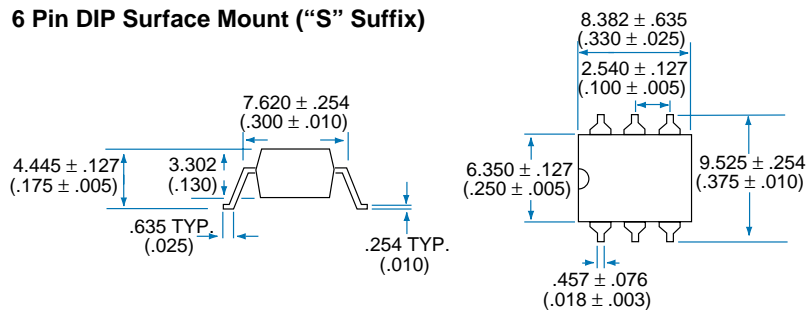
6 Pin DIP Through Hole (Standard)



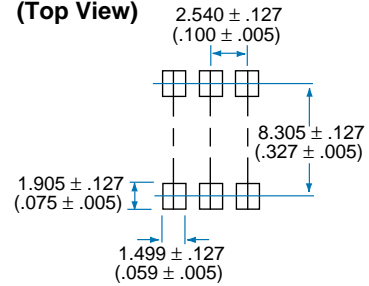
PC Board Pattern (Top View)



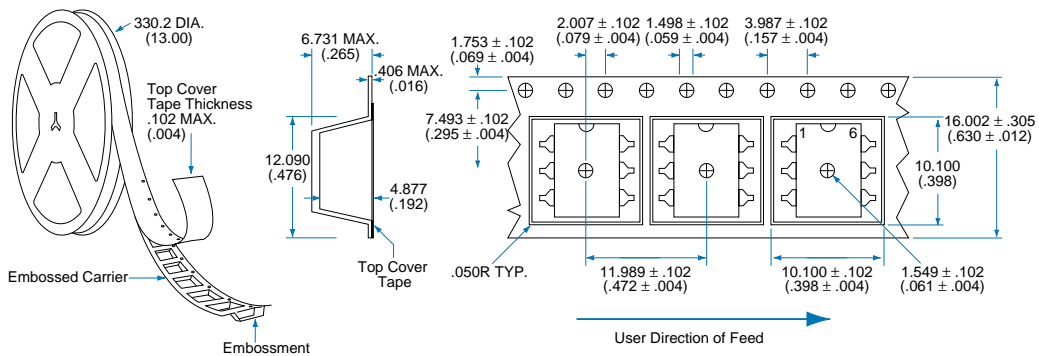
6 Pin DIP Surface Mount ("S" Suffix)



PC Board Pattern (Top View)



Tape and Reel Packaging for 6 Pin Surface Mount Package



Dimensions  
 mm  
 (inches)



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