



Parameter	Ratings	Units
Blocking Voltage	250	V <sub>P</sub>
Load Current	200	mA
Max R <sub>ON</sub>	10	Ω

## Features

- Small 8-Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- 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, 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

LBA127 is 250V, 200mA, 10Ω independent 1-Form-A and 1-Form-B relays. It features a superior combination of low on-resistance and enhanced peak load current handling capabilities.

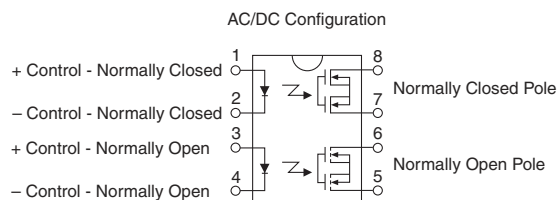
## Approvals

- UL Recognized Component: File # E76270
- CSA Certified Component: Certificate # 1172007
- Certified to:
  - IEC 60950-1: 2005
  - EN 60950-1: 2006
  - TUV Certificate # B 09 07 49410 004

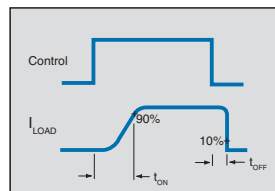
## Ordering Information

Part #	Description
LBA127	8-Pin DIP (50/Tube)
LBA127P	8-Pin Flatpack (50/Tube)
LBA127PTR	8-Pin Flatpack (1000/Reel)
LBA127S	8-Pin Surface Mount (50/Tube)
LBA127STR	8-Pin Surface Mount (1000/Reel)

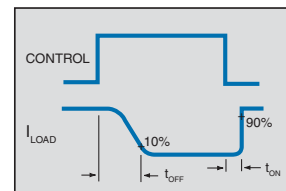
## Pin Configuration



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



### Switching Characteristics of Normally Closed (Form B) Devices



## Absolute Maximum Ratings

Parameter	Ratings	Units
Blocking Voltage	250	$V_P$
Reverse Input Voltage	5	V
Input Control Current	50	mA
Peak (10ms)	1	A
Input Power Dissipation <sup>1</sup>	150	mW
Total Power Dissipation <sup>2</sup>	800	mW
Isolation Voltage, Input to Output	3750	$V_{rms}$
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

<sup>1</sup> Derate Linearly 1.33 mW/°C

<sup>2</sup> 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

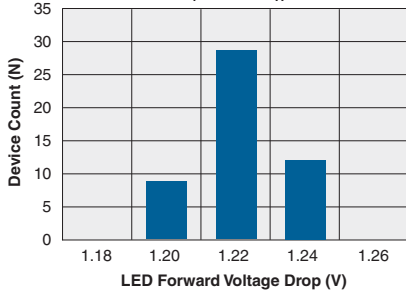
Parameter	Conditions	Symbol	Min	Typ	Max	Units
<b>Output Characteristics @ 25°C</b>						
Load Current						
Continuous <sup>1</sup>	-	$I_L$	-	-	200	mA
Peak	t = 10ms	$I_{LPK}$	-	-	400	
On-Resistance <sup>2</sup>	$I_L=200mA$	$R_{ON}$	-	6.8	10	$\Omega$
Off-State Leakage Current	$V_L=250V$	$I_{LEAK}$	-	-	1	$\mu A$
Switching Speeds						
Turn-On	$I_F=5mA, V_L=10V$	$t_{ON}$	-	-	5	ms
Turn-Off		$t_{OFF}$	-	-	5	
Output Capacitance	50V, f=1MHz	$C_{OUT}$	-	110	-	pF
<b>Input Characteristics @ 25°C</b>						
Input Control Current	$I_L=200mA$	$I_F$	-	-	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	$\mu A$
<b>Common Characteristics @ 25°C</b>						
Input to Output Capacitance	-	$C_{IO}$	-	3	-	pF

<sup>1</sup> If both poles operate simultaneously, then the load current must be derated so as not to exceed the package power dissipation value.

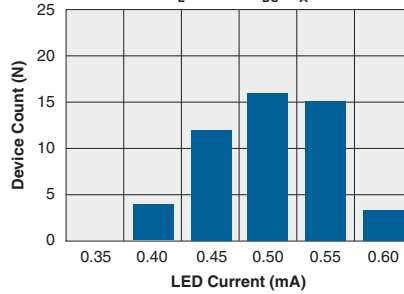
<sup>2</sup> Measurement taken within 1 second of on-time.

**COMMON PERFORMANCE DATA \***

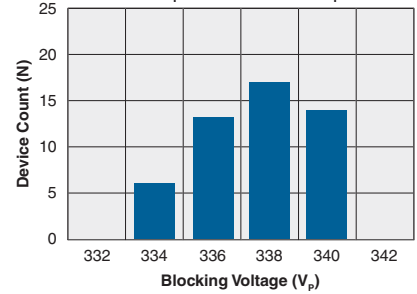
**Typical LED Forward Voltage Drop**  
(N=50,  $I_F=5\text{mA}$ ,  $T_A=25^\circ\text{C}$ )



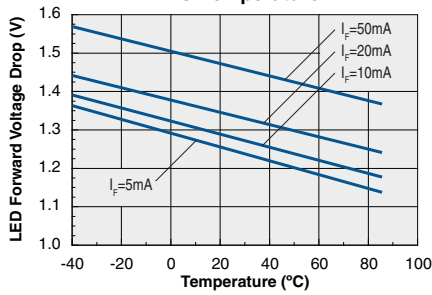
**Typical  $I_F$  for Switch Operation**  
(N=50,  $I_L=200\text{mA}_{DC}$ ,  $T_A=25^\circ\text{C}$ )



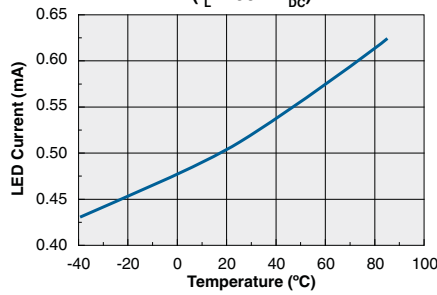
**Typical Blocking Voltage Distribution**  
(N=50,  $T_A=25^\circ\text{C}$ )  
(Form-A:  $I_F=0\text{mA}$ , Form-B:  $I_F=5\text{mA}$ )



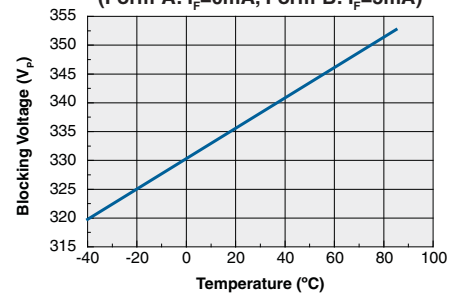
**Typical LED Forward Voltage Drop vs. Temperature**



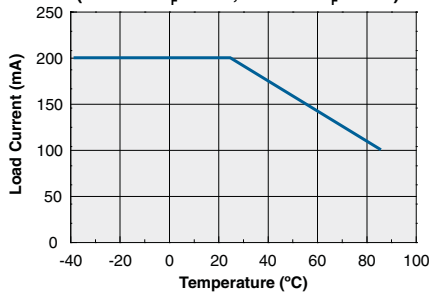
**Typical  $I_F$  for Switch Operation vs. Temperature**  
( $I_L=100\text{mA}_{DC}$ )



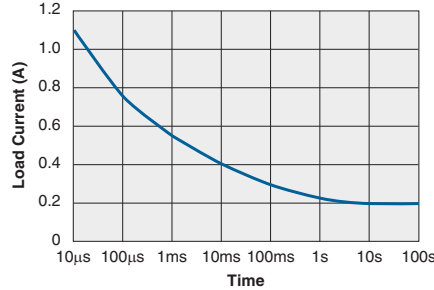
**Typical Blocking Voltage vs. Temperature**  
(Form-A:  $I_F=0\text{mA}$ , Form-B:  $I_F=5\text{mA}$ )



**Load Current vs. Load Temperature**  
(Form-A:  $I_F=5\text{mA}$ , Form-B:  $I_F=0\text{mA}$ )

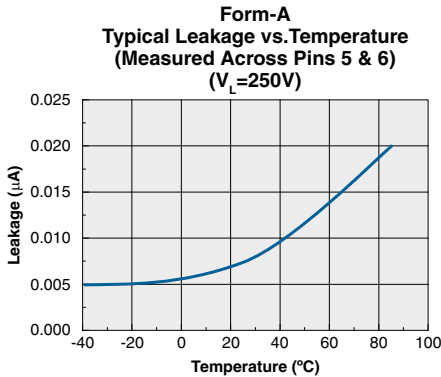
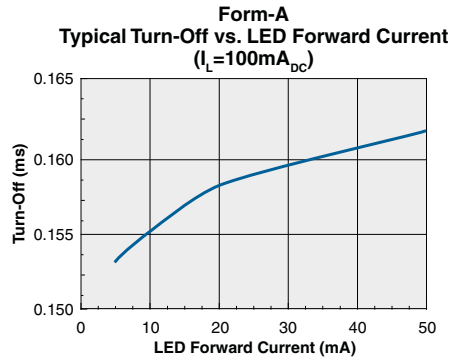
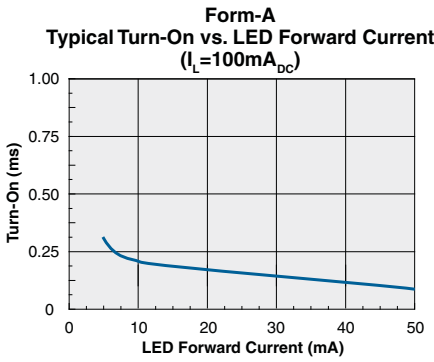
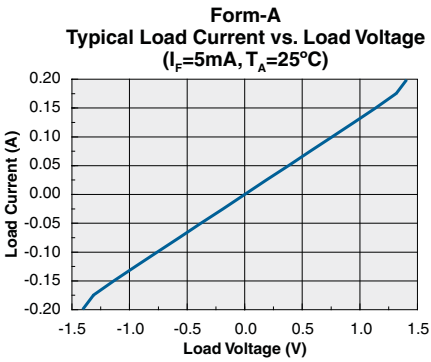
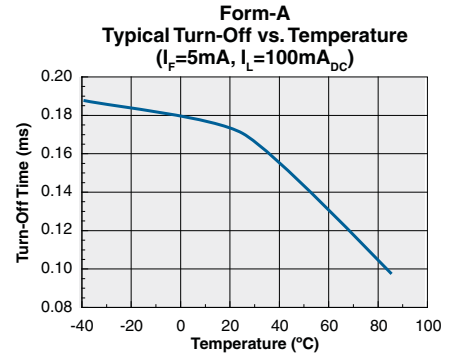
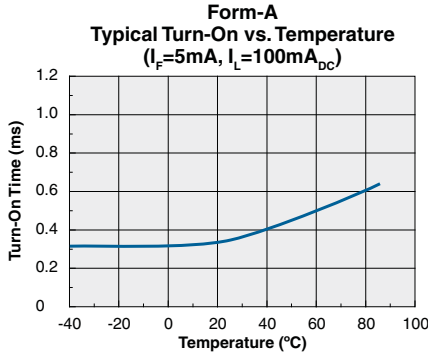
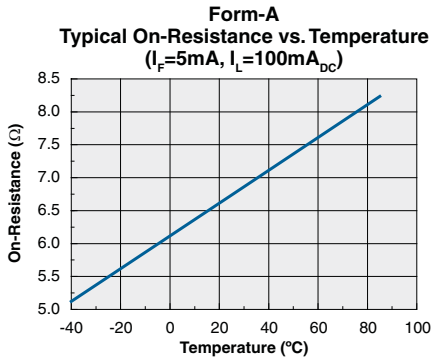
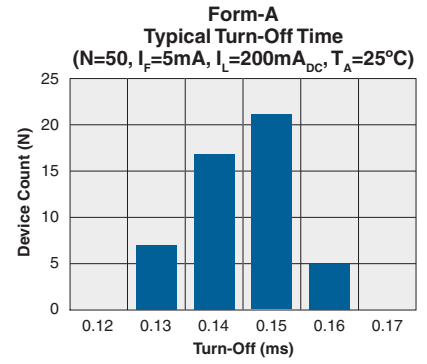
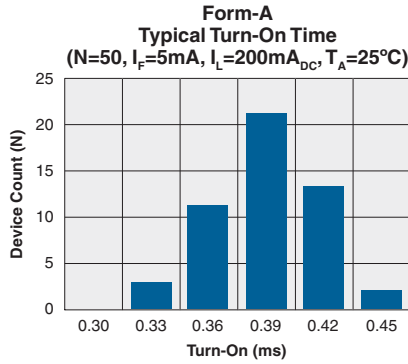
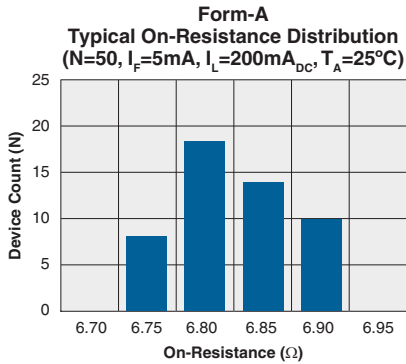


**Energy Rating Curve**



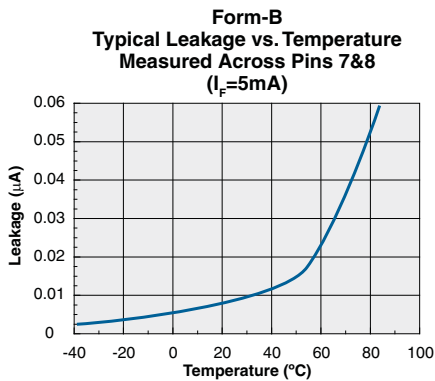
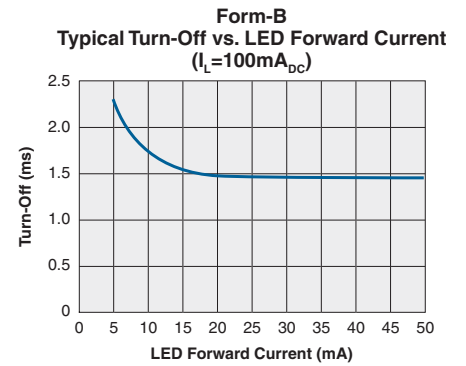
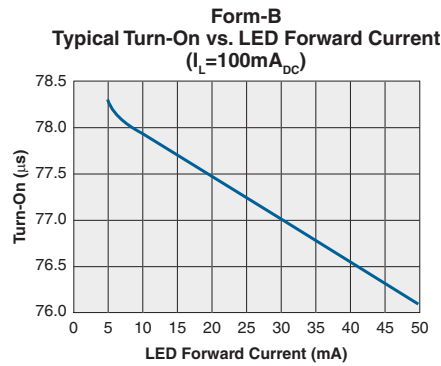
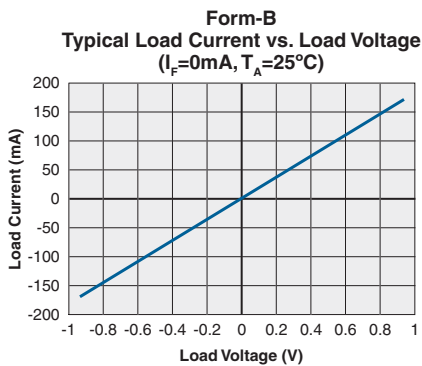
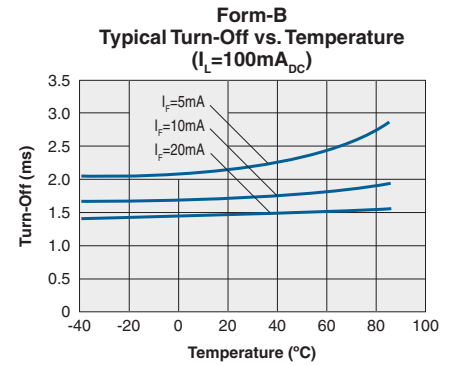
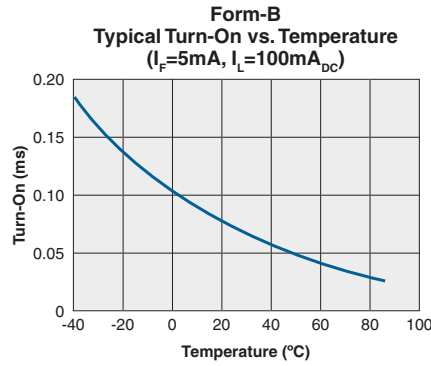
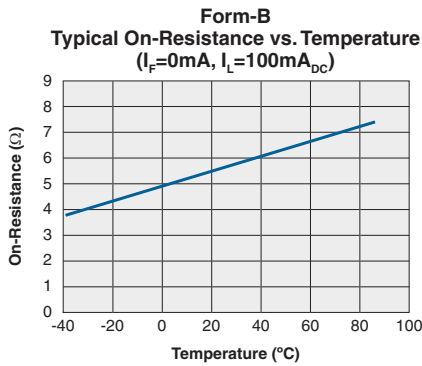
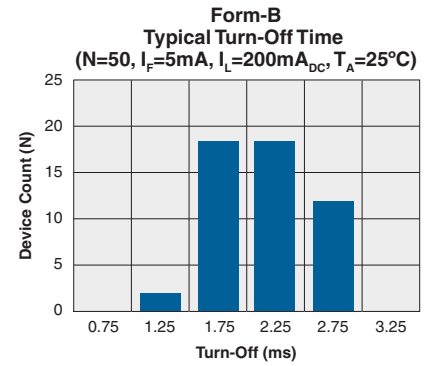
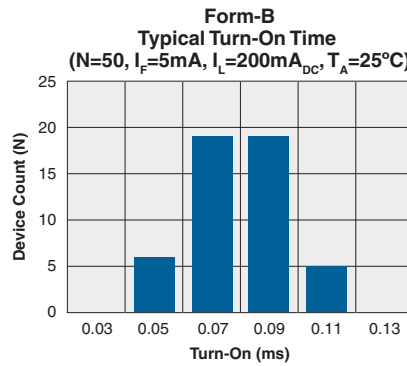
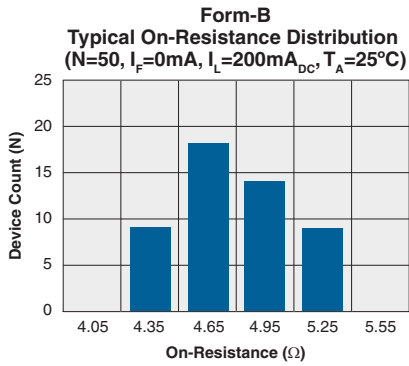
\*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

PERFORMANCE DATA for 1-Form-A Relay\*



\*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 for 1-Form-B Relay\***



\*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.

**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.

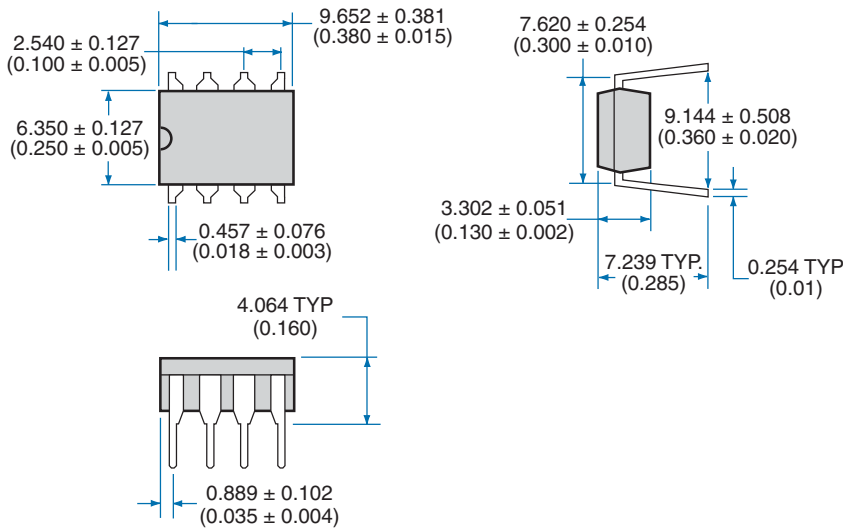
**Washing**

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

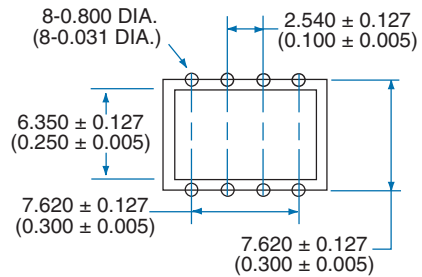


**MECHANICAL DIMENSIONS**

**8-Pin DIP Through-Hole Package**

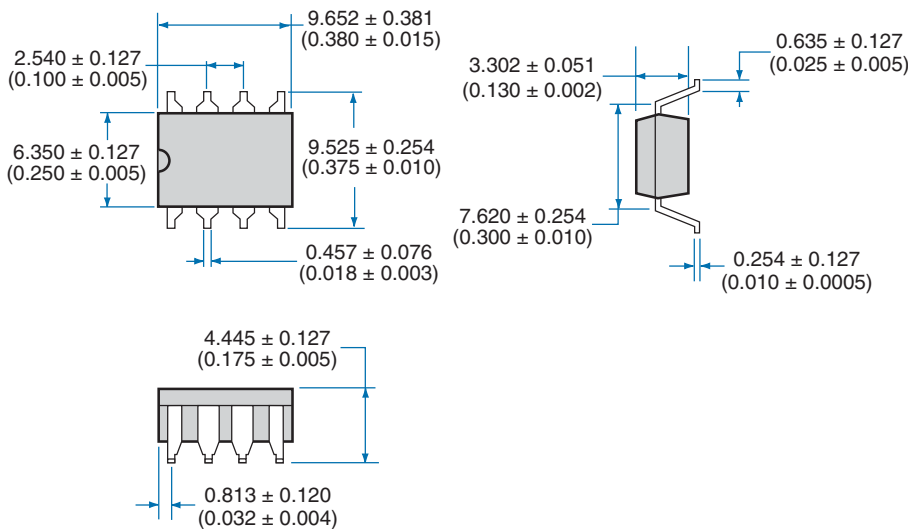


**PC Board Pattern**

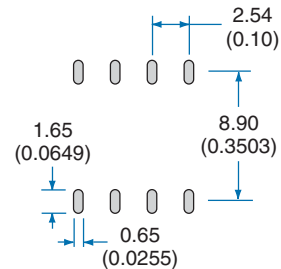


Dimensions  
mm  
(inches)

**8-Pin Surface Mount Package**



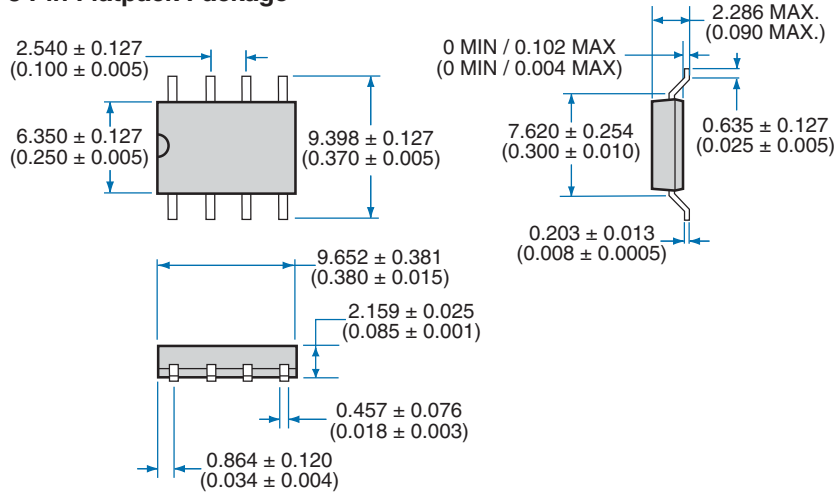
**Recommended PCB Land Pattern**



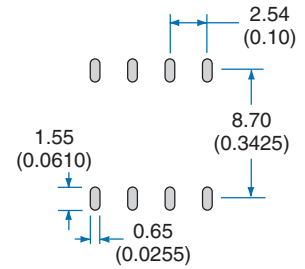
Dimensions  
mm  
(inches)

**MECHANICAL DIMENSIONS (CONT.)**

**8 Pin Flatpack Package**

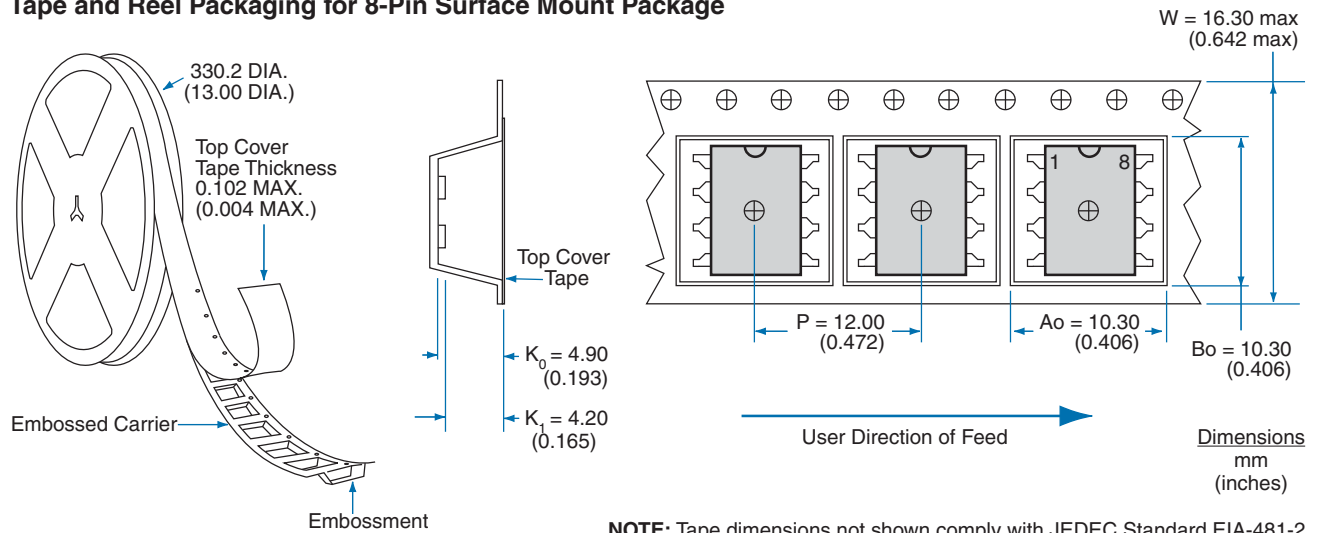


**Recommended PCB Land Pattern**



Dimensions  
mm  
(inches)

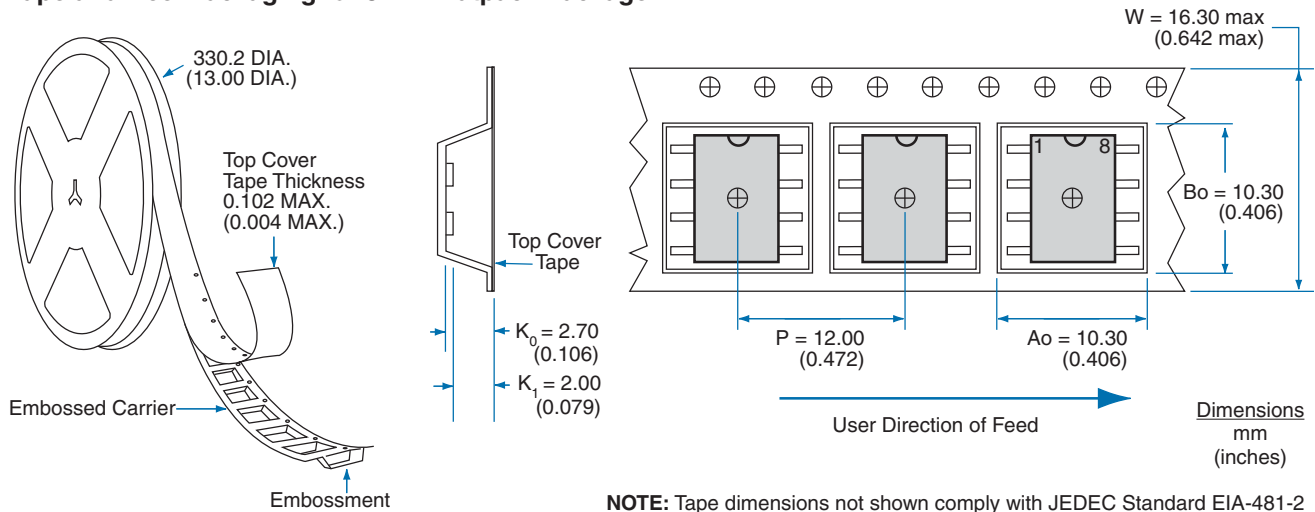
**Tape and Reel Packaging for 8-Pin Surface Mount Package**



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

**MECHANICAL DIMENSIONS (CONT.)**

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



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

**For additional information please visit our website at: [www.clare.com](http://www.clare.com)**

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