



	<b>XBA170</b>	<b>Units</b>
Load Voltage	350	V
Load Current	100	mA
Max R <sub>ON</sub>	50	Ω

### Description

XBA170 is 350V, 100mA, 50Ω independent 1-Form-A and 1-Form-B relays. It provides an economical solution where cost is critical and high performance is not a necessity.

### Features

- Small 8 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 to:
  - BS EN 60950:1992 (BS7002:1992)  
Certificate #: 7344
  - BS EN 41003:1993  
Certificate #: 7344

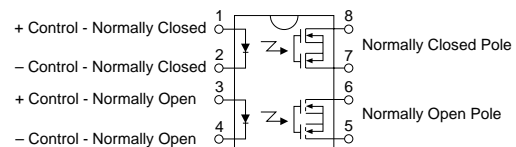
### Ordering Information

<b>Part #</b>	<b>Description</b>
XBA170	8 Pin DIP (50/ Tube)
XBA170P	8 Pin Flatpack (50/ Tube)
XBA170PTR	8 Pin Flatpack (1000/ Reel)
XBA170S	8 Pin Surface Mount (50/ Tube)
XBA170STR	8 Pin Surface Mount (1000/ Reel)

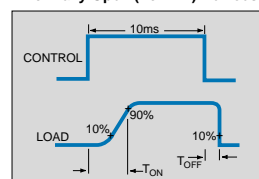
### Pin Configuration

#### XBA170 Pinout

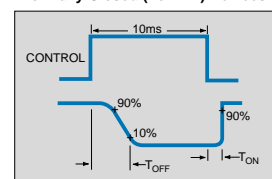
AC/DC Configuration



Switching Characteristics of Normally Open (Form A) Devices



Switching Characteristics of Normally Closed (Form B) Devices



### Absolute Maximum Ratings (@ 25° C)

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 <sup>1</sup>	mW
Input Control Current Peak (10ms)	-	-	50 1	mA A
Reverse Input Voltage	-	-	5	V
Total Power Dissipation	-	-	800 <sup>2</sup>	mW
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

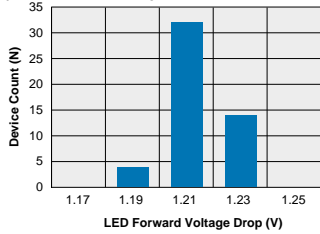
*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.*

### Electrical Characteristics

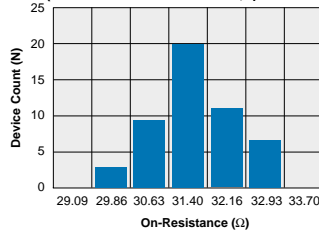
Parameter	Conditions	Symbol	Min	Typ	Max	Units
<b>Output Characteristics @ 25°C</b>						
Load Voltage (Peak)	-	V <sub>L</sub>	-	-	350	V
Load Current* (Continuous) AC/DC Configuration	-	I <sub>L</sub>	-	-	100	mA
Peak Load Current	10ms	I <sub>LPK</sub>	-	-	350	mA
On-Resistance AC/DC Configuration	I <sub>L</sub> =120mA	R <sub>ON</sub>	-	33	50	Ω
Off-State Leakage Current	V <sub>L</sub> =350V	I <sub>LEAK</sub>	-	-	1	μA
Switching Speeds						
Turn-On	I <sub>F</sub> =5mA, V <sub>L</sub> =10V	T <sub>ON</sub>	1	-	5	ms
Turn-Off	I <sub>F</sub> =5mA, V <sub>L</sub> =10V	T <sub>OFF</sub>	1	-	5	ms
Output Capacitance	50V; f=1MHz	C <sub>OUT</sub>	-	25	-	pF
Capacitance Input to Output	-	-	-	3	-	pF
<b>Input Characteristics @ 25°C</b>						
Input Control Current	I <sub>L</sub> =Load Current	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>

PERFORMANCE DATA \*

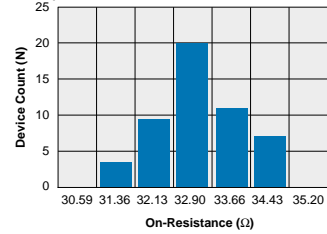
**XBA170**  
Typical LED Forward Voltage Drop  
(N=50 Ambient Temperature = 25°C; I<sub>F</sub> = 5mADC)



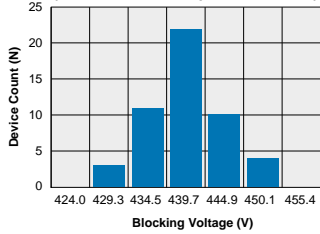
**XBA170 - FormA**  
Typical On-Resistance Distribution  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC, I<sub>F</sub>=5mADC)



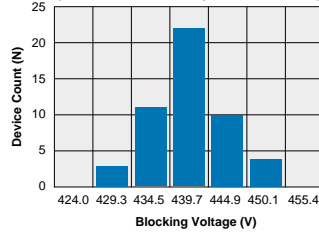
**XBA170 - FormB**  
Typical On-Resistance Distribution  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC, I<sub>F</sub>=5mADC)



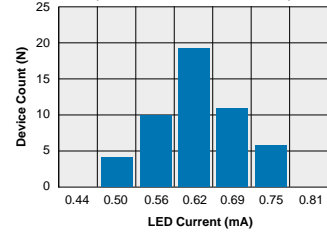
**XBA170 - FormA**  
Typical Blocking Voltage Distribution  
(N=50 Ambient Temperature = 25°C)



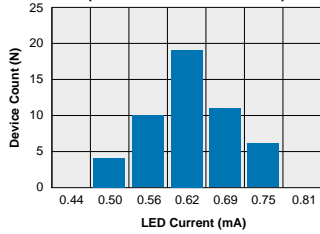
**XBA170 - FormB**  
Typical Blocking Voltage Distribution  
(N=50 Ambient Temperature = 25°C)



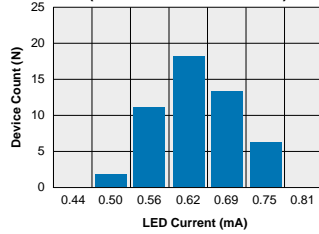
**XBA170 - FormA**  
Typical I<sub>F</sub> for Switch Operation  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC)



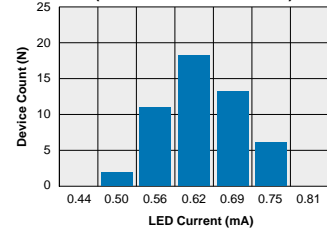
**XBA170 - FormB**  
Typical I<sub>F</sub> for Switch Operation  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC)



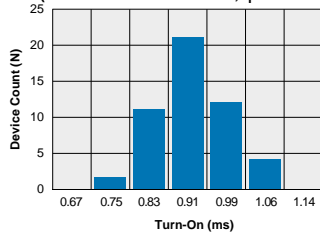
**XBA170 - FormA**  
Typical I<sub>F</sub> for Switch Dropout  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC)



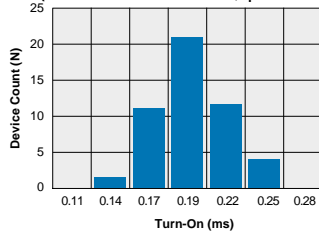
**XBA170 - FormB**  
Typical I<sub>F</sub> for Switch Dropout  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC)



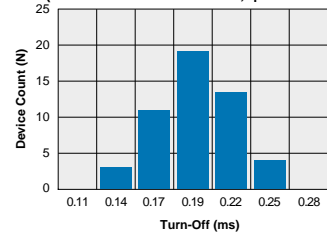
**XBA170 - FormA**  
Typical Turn-On Time  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC; I<sub>F</sub> = 5mADC)



**XBA170 - FormB**  
Typical Turn-On Time  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC; I<sub>F</sub> = 5mADC)

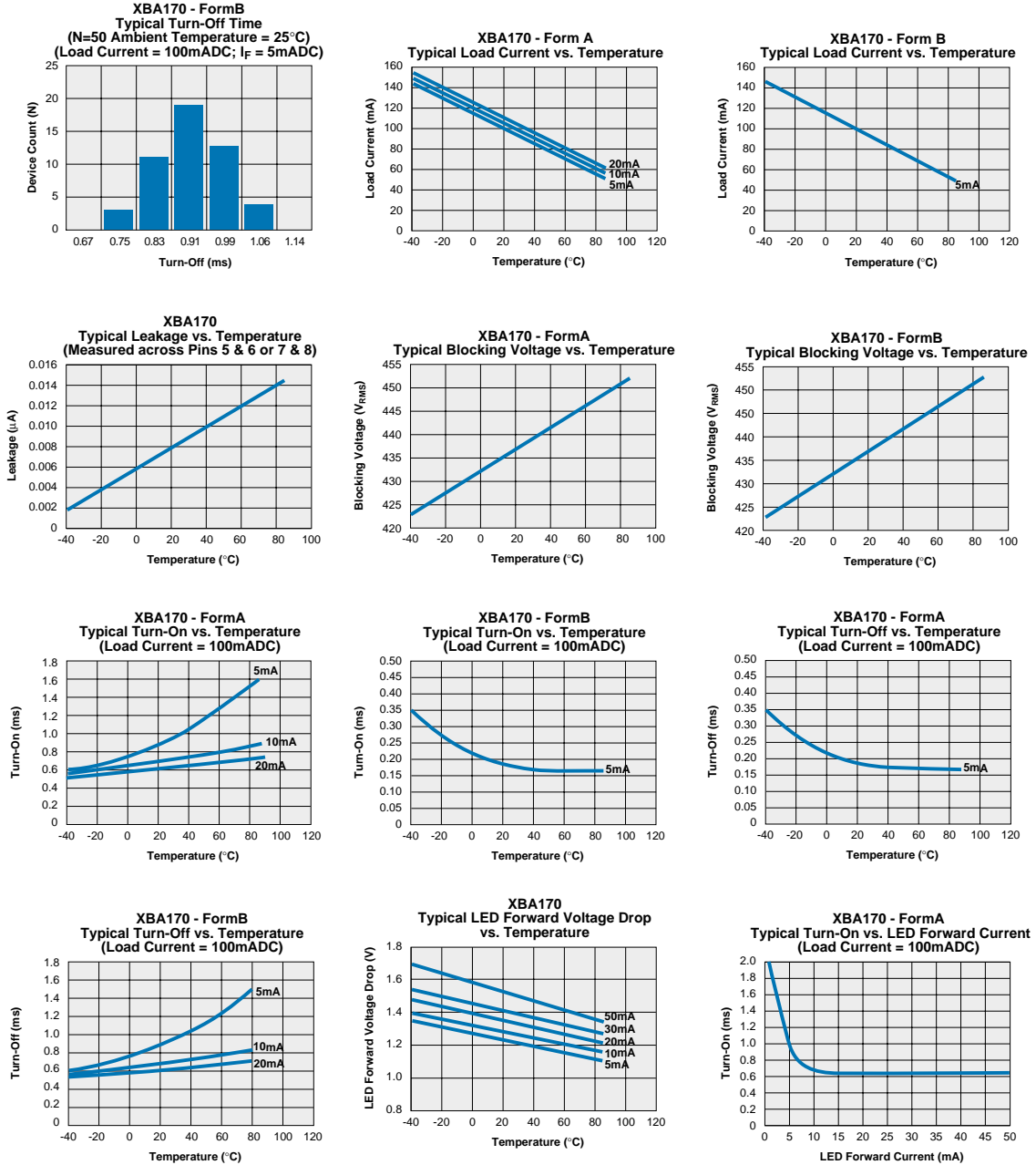


**XBA170 - FormA**  
Typical Turn-Off Time  
(N=50 Ambient Temperature = 25°C)  
(Load Current = 100mADC; I<sub>F</sub> = 5mADC)



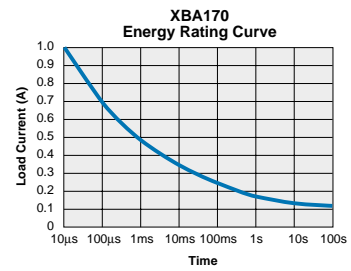
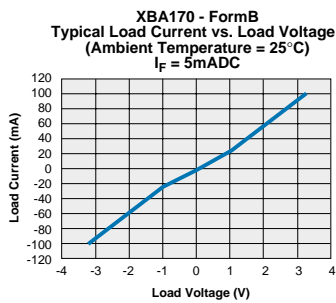
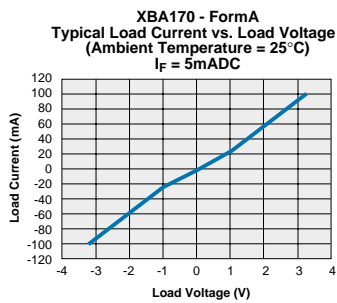
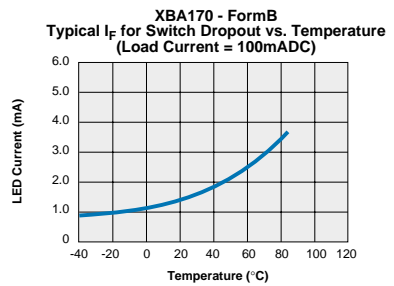
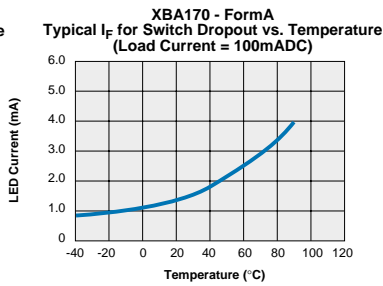
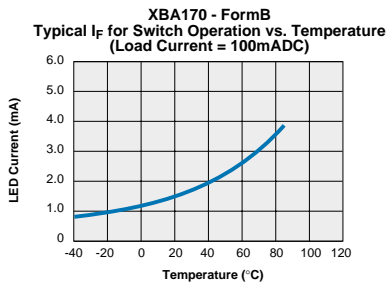
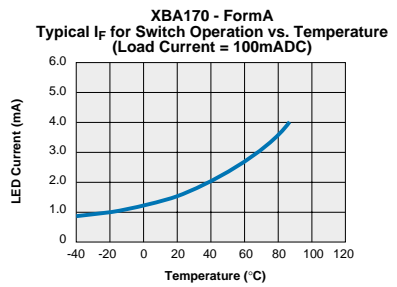
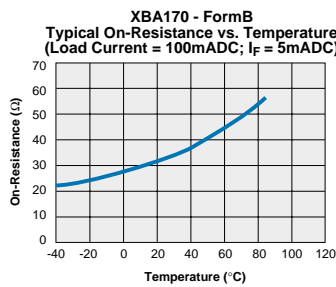
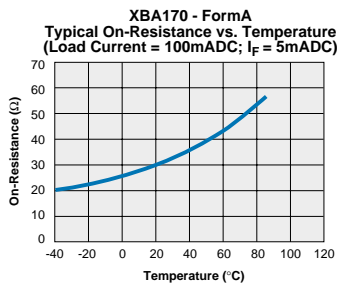
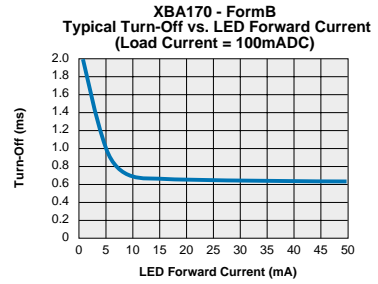
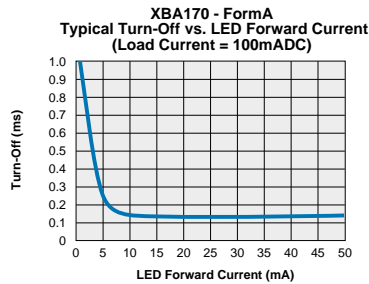
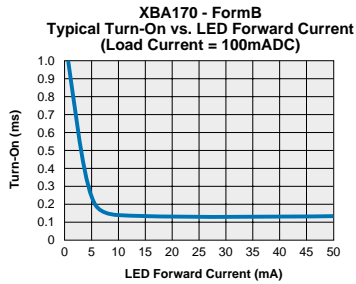
The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

PERFORMANCE DATA\*



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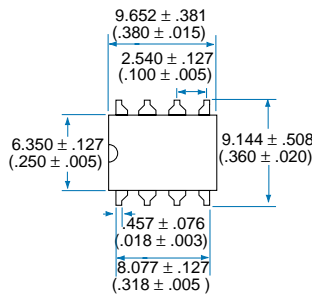
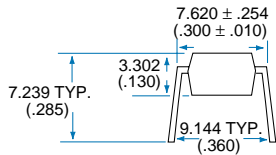
PERFORMANCE DATA\*



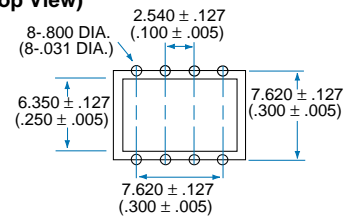
\*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

**Mechanical Dimensions**

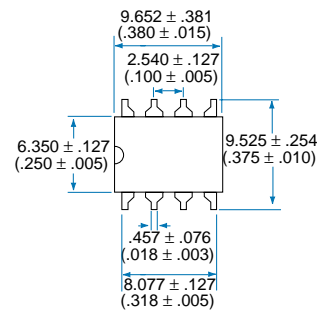
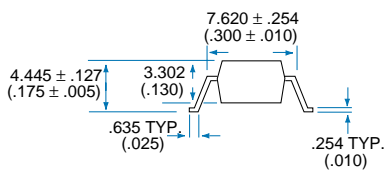
**8 Pin DIP Through Hole (Standard)**



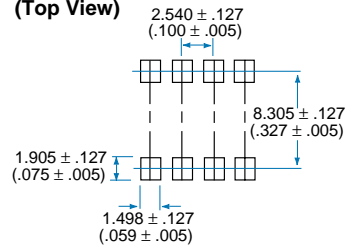
**PC Board Pattern (Top View)**



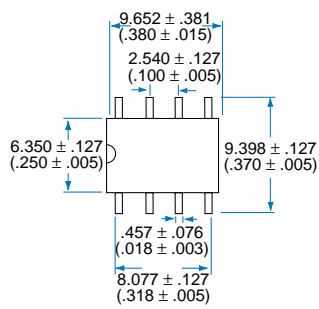
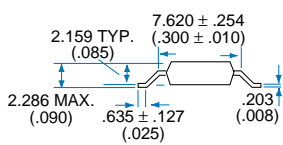
**8 Pin DIP Surface Mount ("S" Suffix)**



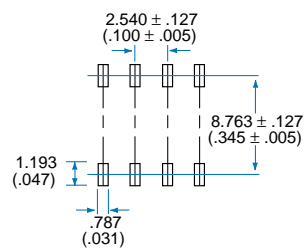
**PC Board Pattern (Top View)**



**8 Pin Flatpack ("P" Suffix)**



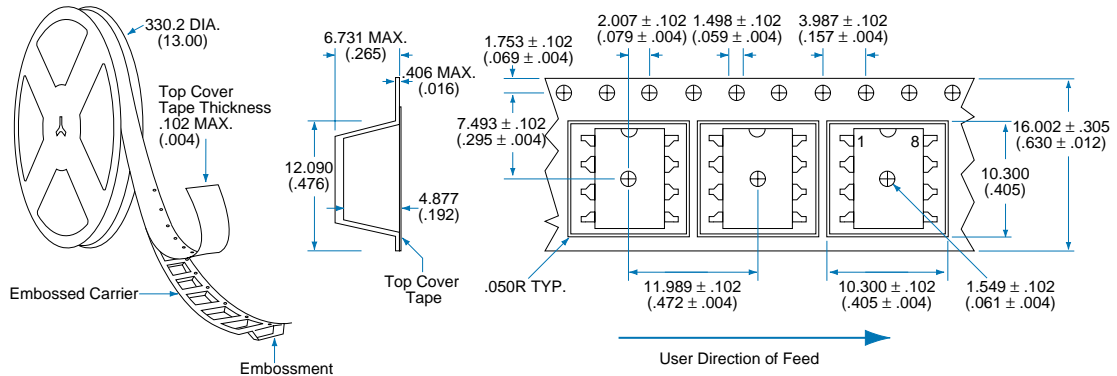
**PC Board Pattern (Top View)**



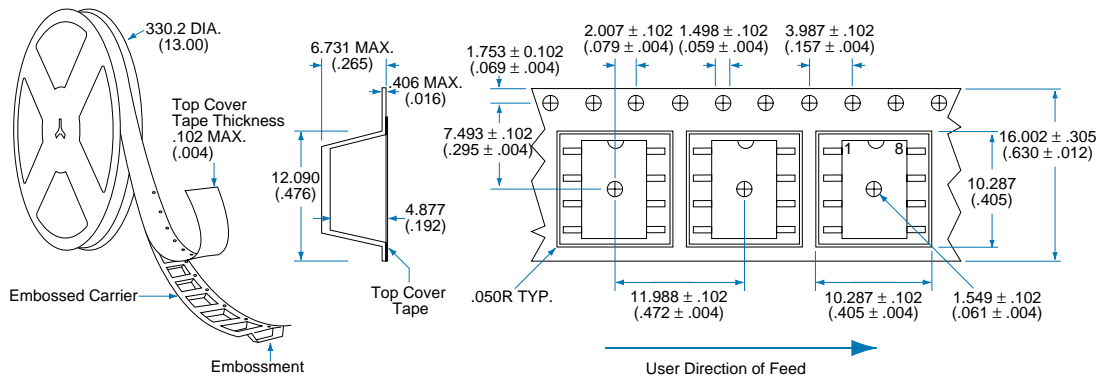
Dimensions  
mm  
(inches)

### Mechanical Dimensions

#### Tape and Reel Packaging for 8 Pin Surface Mount Package



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



Dimensions  
mm  
(inches)



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