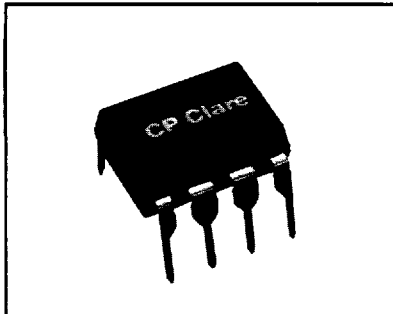


FDA215

OptoMOS® Solid State MOSFET Driver



DESCRIPTION

CP Clare's FDA215 MOSFET driver couples infrared light emitting diodes with a pair of proprietary photovoltaic integrated circuits. In addition to providing voltage for turn-on of discrete MOSFETs, these patented ICs feature a gate-clamping circuit to provide fast turn-off. The FDA215 offers a significant reduction in drive circuit complexity, board-space, and cost over alternate techniques for isolated switching of MOSFETs. Used in conjunction with discrete MOSFETs the FDA215 is ideal for use in programmable controls, process control, instrumentation and telecommunications, replacing TRIAC/drivers, mechanical relays, and bipolar components.

FEATURES

- Optically-isolated input to output
- May be configured for AC and DC
- Switching
- 2mA control current
- No EMI/RFI generation
- Machine insertable, wave solderable
- Surface Mount and Tape & Reel version available
- Dual independent, floating outputs for parallel, series, or isolated configuration
- Replacement of discrete components
- Solid state reliability
- UL recognized file #: E76270
- CSA certified file #: LR 43639-10
- VDE compatible
- BSI certified to:
 - BS EN 60950: 1992 (BS7002: 1992) Certificate #: 7344
 - BS EN 41003: 1993 Certificate #: 7344

APPLICATIONS

- MOSFET driver
- Programmable control
- Process control
- Instrumentation
- Replace TRIAC drivers
- Telecommunications

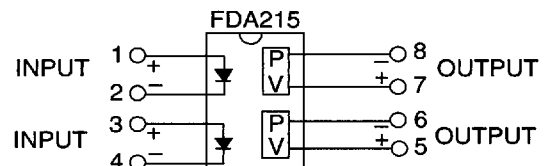
RATINGS (@ 25°C)

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 ¹	mW
Input Control Current	-	-	100	mA
Peak (10ms)	-	-	1	A
Reverse Input Voltage	-	-	5	V
Power Dissipation				
Total Package Dissipation	-	-	500 ²	mW
Capacitance				
Input to Output	-	3	-	pF
Isolation Voltage				
Input to Output	2500	-	-	V _{RMS}
"E" Suffix (optional)	3750	-	-	V _{RMS}
Operating Temperature	-40	-	85	°C
Storage Temperature	-40	-	125	°C
Soldering Temperature (10 Seconds Max)	-	-	260	°C

¹Derate Linearly 1.33 mW/°C

²Derate Linearly 1.67 mW/°C

EQUIVALENT CIRCUIT



Note: For Mechanical Dimensions see pages 46-49.

Output Characteristics @ 25°C

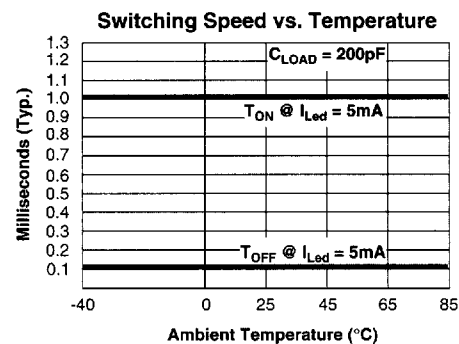
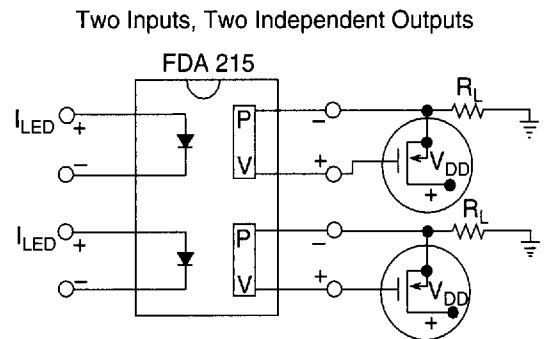
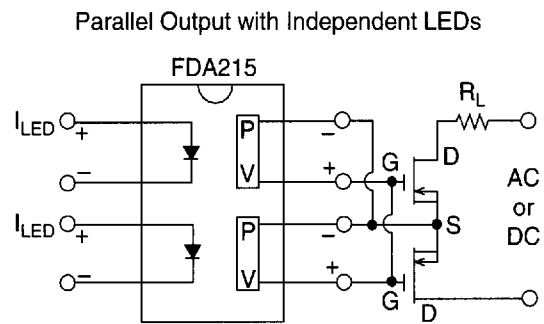
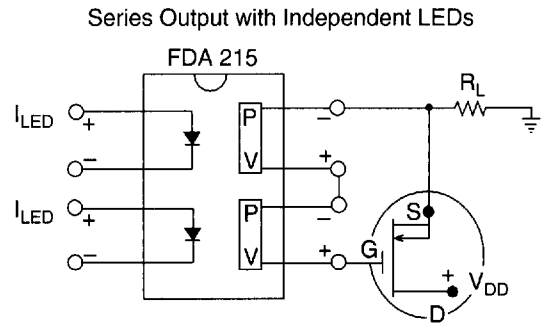
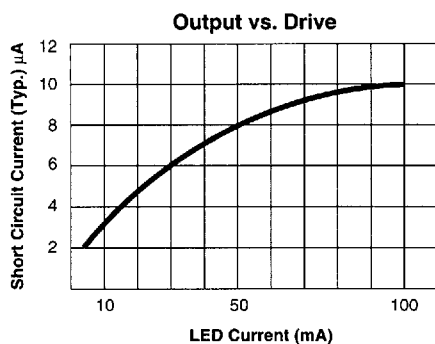
PART NUMBER	FDA215	UNITS
Load Voltage	10	V
Load Current	1	μA
Open Circuit Voltage $I_{LED}=5mA$	Min Typ	- 4
Short Circuit Current $I_{LED}=5mA$	Typ	2.5
	Min	1
$I_{LED}=25mA$	Typ	3.5
	Min	2.5
Turn On Time $I_{LED}=5mA$	Typ Max	2 5
Turn Off Time $I_{LED}=5mA$	Typ Max	2 5
Off-State Clamping Resistance	Typ Max	0.25 3.3
		KΩ

Input Characteristics @ 25°C

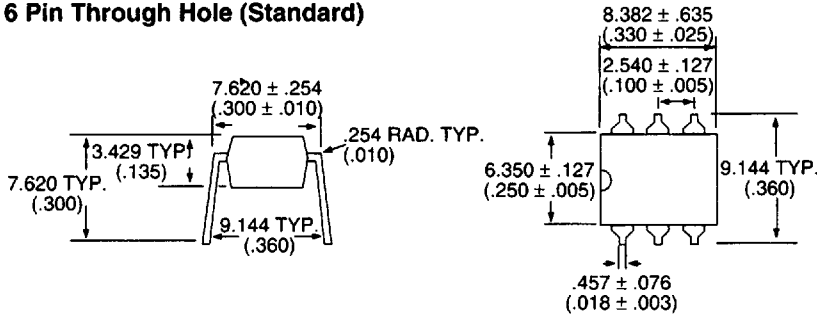
Input Control Current I_{LED}	Typ Max	- 5	mA
Input Voltage Drop $V_F @ 5mA$	Min Typ Max	0.9 1.2 1.4	V
Reverse Input Voltage	Max	5	V
Reverse Input Current	Max	10	μA
Input to Output Capacitance	Typ	3	pF

Common Electrical Characteristics @ 25°C

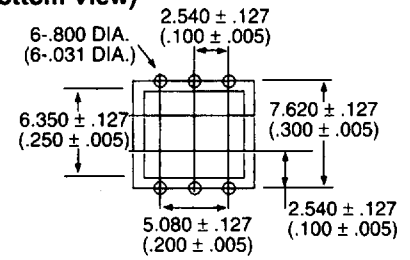
Input to Output Isolation	2500	V_{RMS}
With "E" Suffix (optional)	3750	



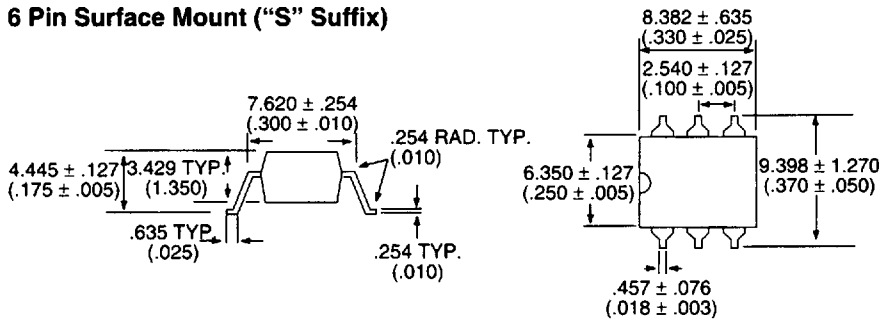
6 Pin Through Hole (Standard)



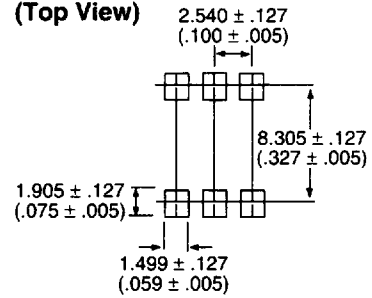
6 Pin PC Board Pattern (Bottom View)



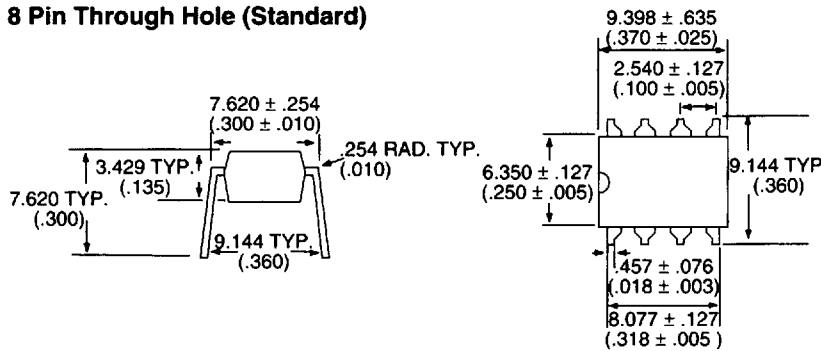
6 Pin Surface Mount ("S" Suffix)



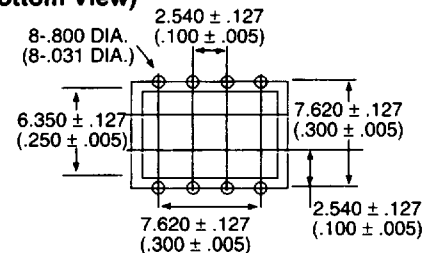
6 Pin Mounting Pad (Top View)



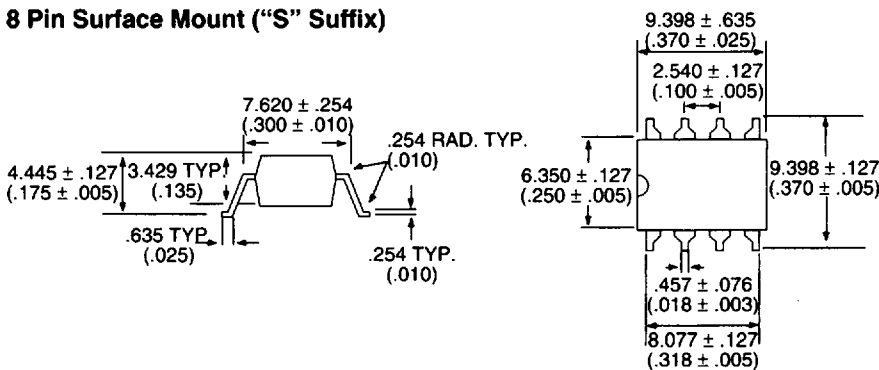
8 Pin Through Hole (Standard)



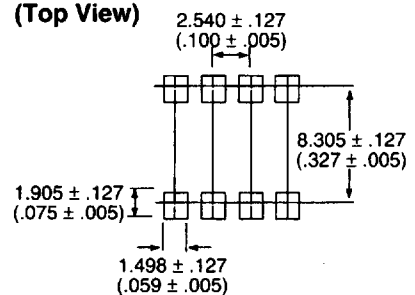
8 Pin PC Board Pattern (Bottom View)



8 Pin Surface Mount ("S" Suffix)

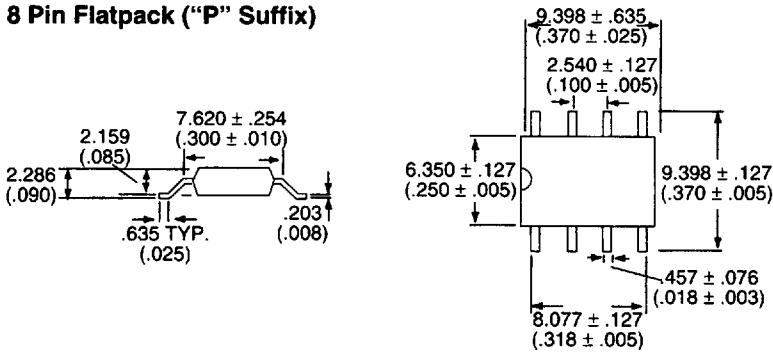


8 Pin Mounting Pad (Top View)

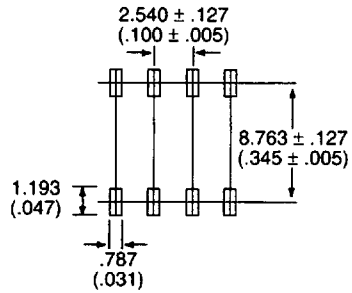


DIMENSIONS
mm
(Inches)

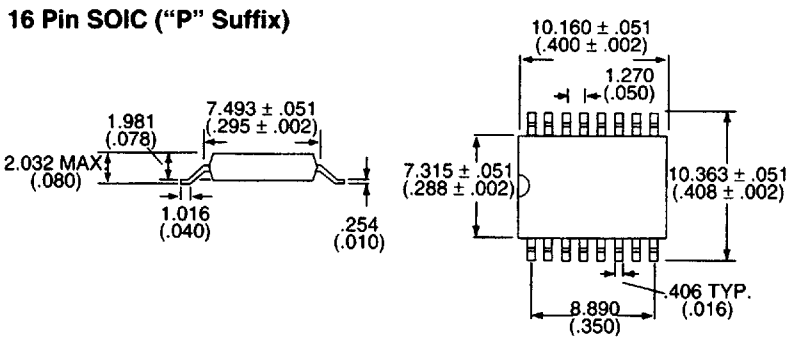
8 Pin Flatpack ("P" Suffix)



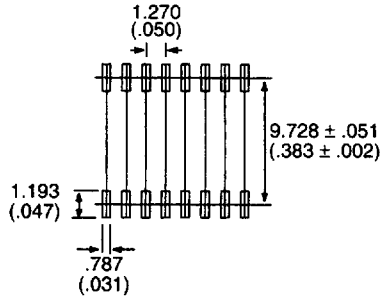
8 Pin Flatpack Mounting Pad (Top View)



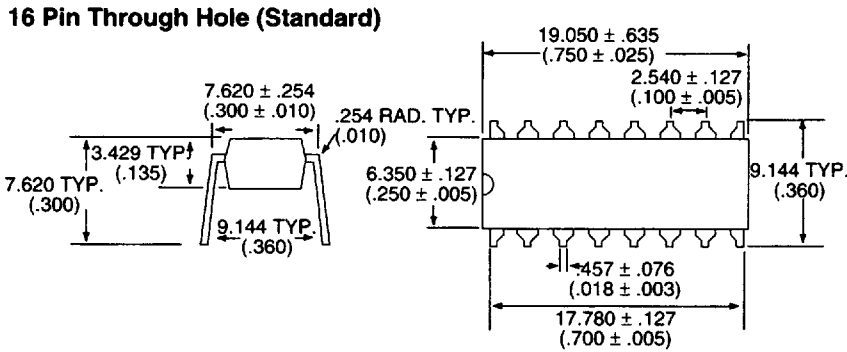
16 Pin SOIC ("P" Suffix)



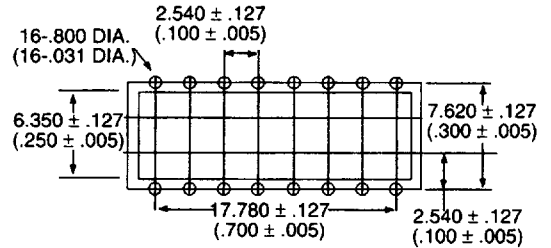
16 Pin SOIC Mounting Pad (Top View)



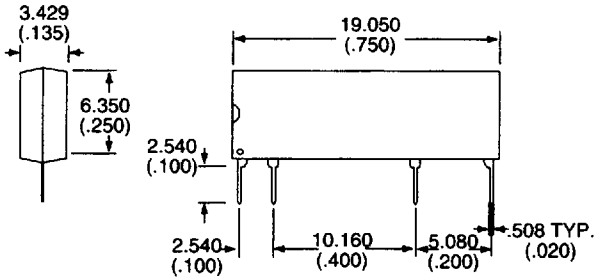
16 Pin Through Hole (Standard)



16 Pin PC Board Pattern (Bottom View)

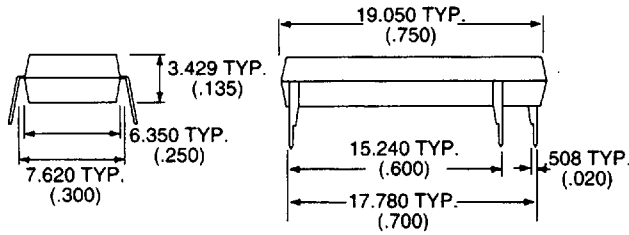


8 Pin SIP

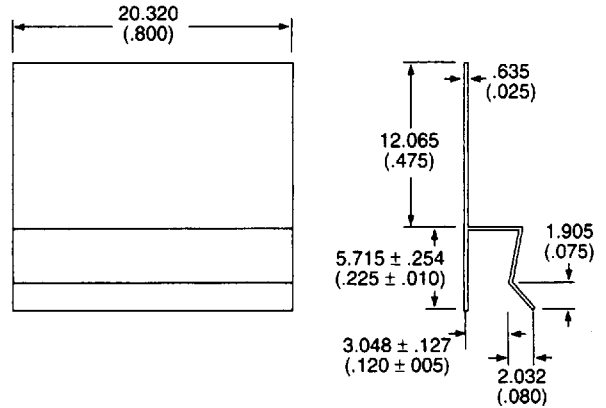


DIMENSIONS
mm
(Inches)

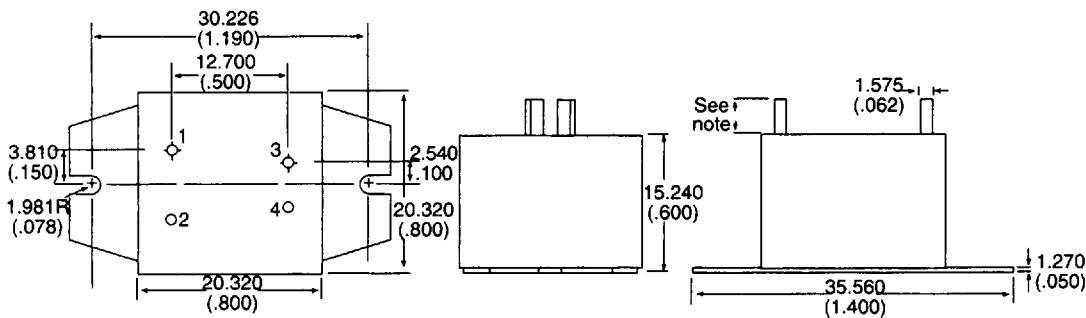
16 Pin DIP



Thermal Clip

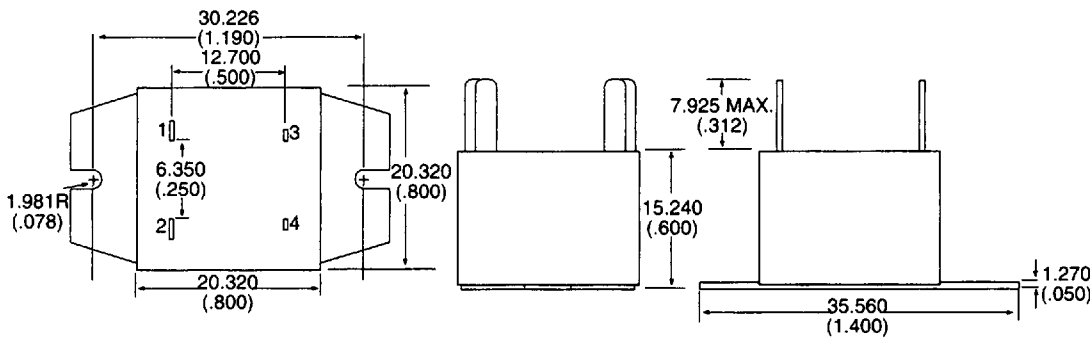


OptoFILM® 10A Series, Pins

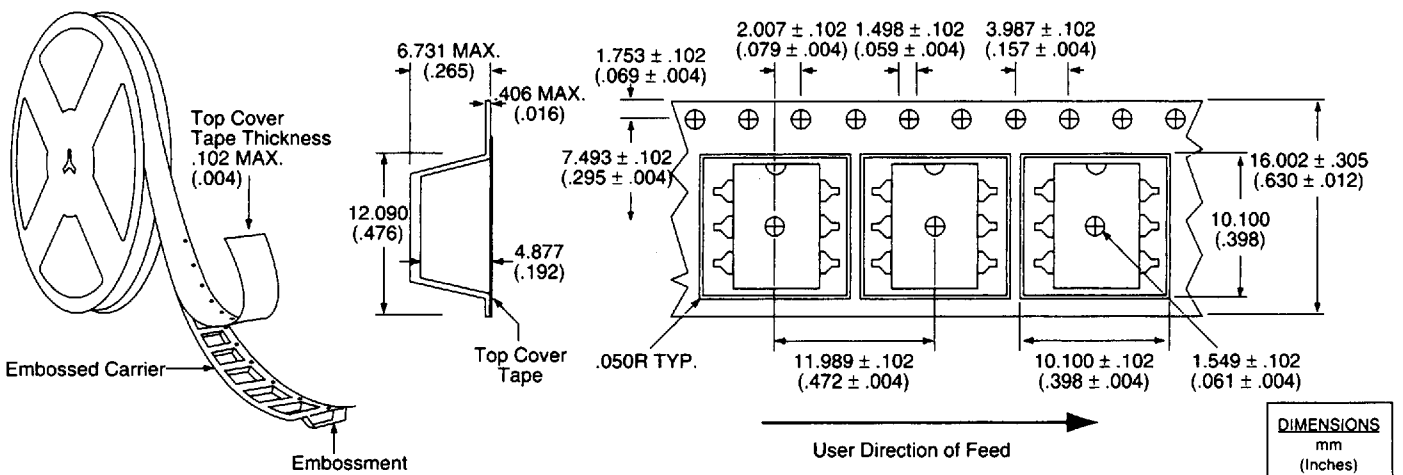


Note: Specify "-1" (0.300" pins)
 Specify "-3" (0.175" pins)

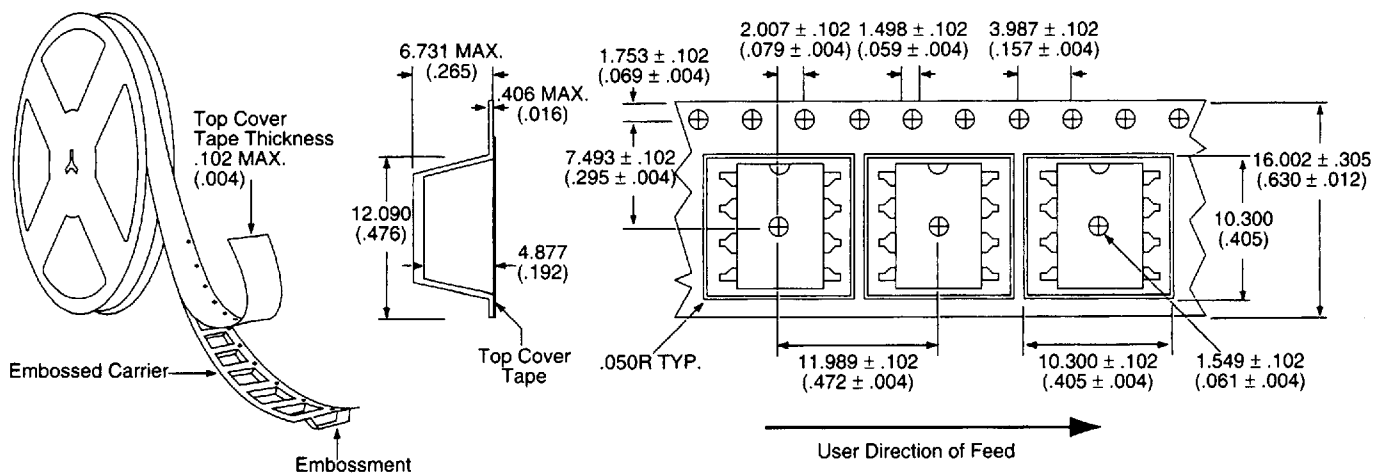
OptoFILM® 10A Series, Quick Connect



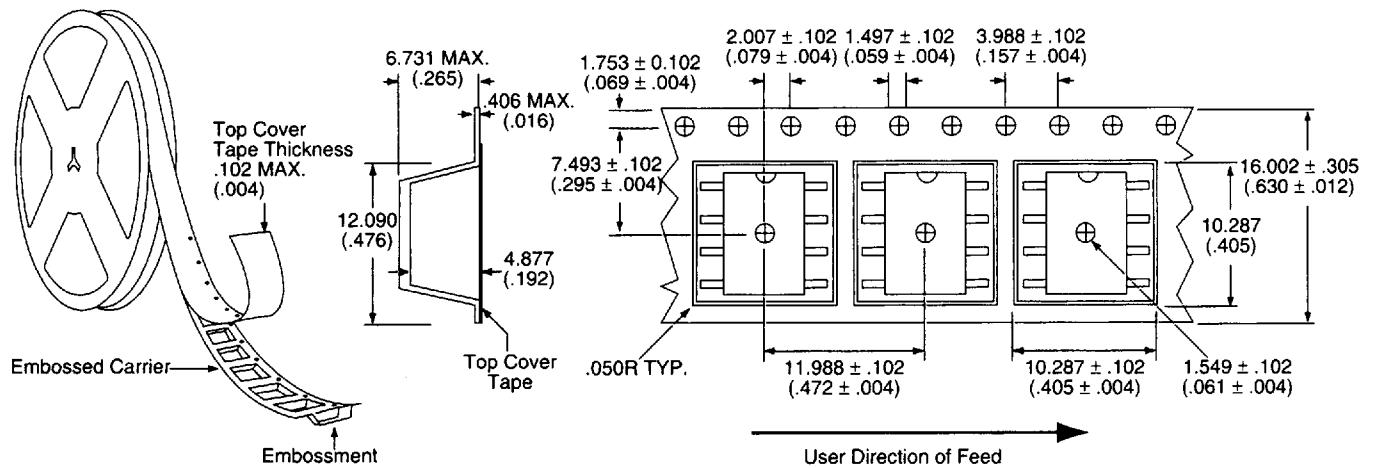
Tape and Reel Packaging for 6 Pin Surface Mount Package



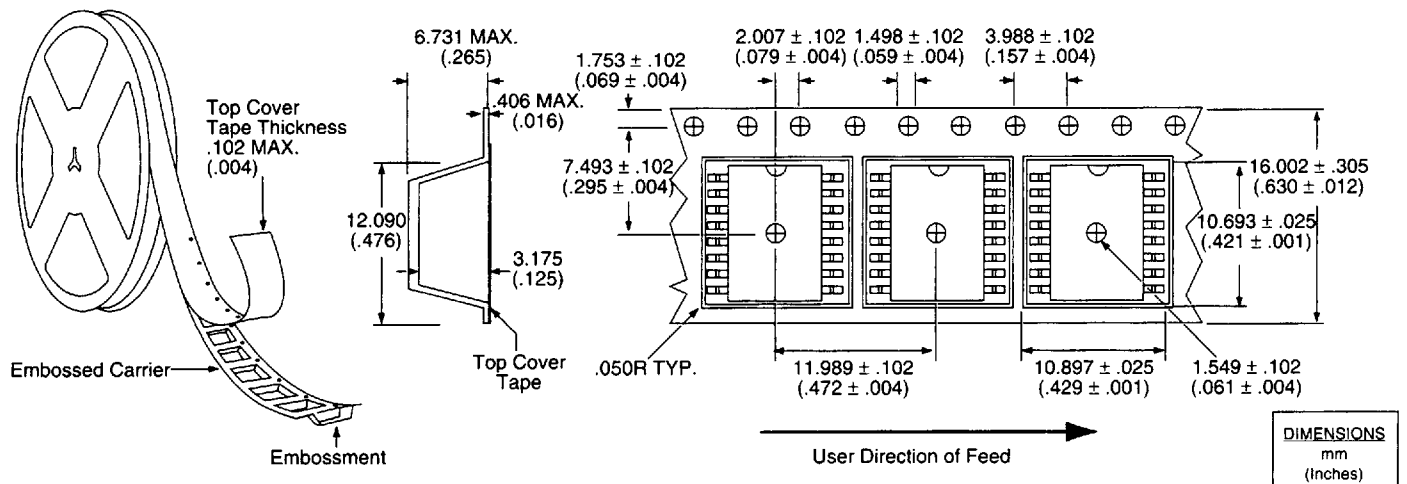
Tape and Reel Packaging for 8 Pin Surface Mount Package



Tape and Reel Packaging for 8 Pin Flatpack Package



Tape and Reel Packaging for 16 Pin SOIC Package



DIMENSIONS
mm
(Inches)