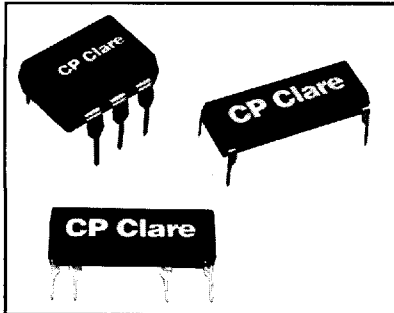


PowerDIP/PowerSIP/PowerMINI AC Solid State Switches



DESCRIPTION

CP Clare's PD/PS/PM series power switches employ patented waveguide coupling with dual power SCR outputs to produce an alternative to optocoupler and triac circuits. Superior noise immunity complying with NEMA ICS 2-230 "showering arc" test is provided along with advanced thermally efficient package design. Long life and environmental integrity make these devices suitable to control a variety of AC circuits including heaters, motors, solenoids, larger relays and contactors.

FEATURES

- Ratings to 600V, 3A¹ (600V, 0.5A_{RMS})
- 5mA sensitivity
- Zero-crossing detection
- DC control, AC output
- Optically isolated
- TTL and CMOS compatible
- Low EMI and RFI generation
- Inherent noise immunity
- 3750V_{RMS} input/output isolation available
- Machine insertable, wave solderable
- UL recognized file #: E69938
- CSA certified file #: LR 43639-8
- VDE compatible

¹Operation to 3A with heat sink.

APPLICATIONS

- Programmable controls
- Process control
- Power control panels
- Remote switching
- Gas pump electronics
- Contactors
- Large relays
- Solenoids
- Motors
- Heaters

RATINGS (@ 25°C)

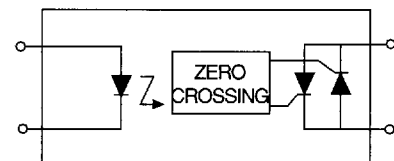
Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 ¹	mW
Input Control Current	-	-	100	mA
Peak (10ms)	-	-	1	A
Reverse Input Voltage	-	-	5	V
Total Package Dissipation				
PM	-	-	500 ²	mW
PS/PD	-	-	1600 ³	mW
Capacitance				
Input to Output	-	3	-	pF
Isolation Voltage				
Input to Output	2500	-	-	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

³Derate Linearly 16.6 mW/°C

EQUIVALENT CIRCUIT



Note: For Mechanical Dimensions see pages 46-49.

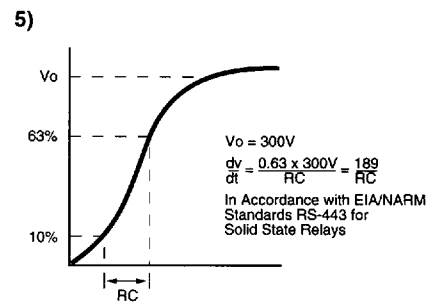
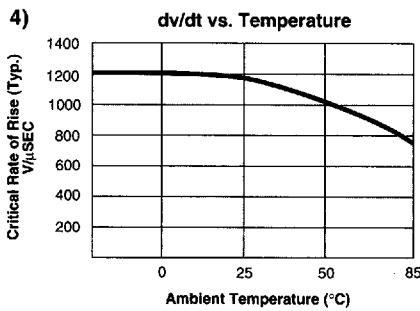
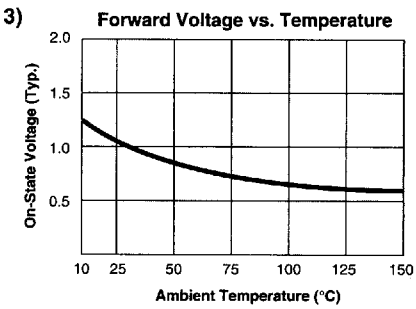
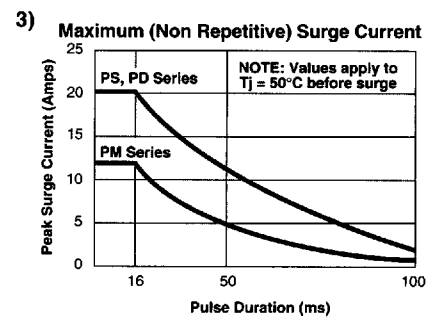
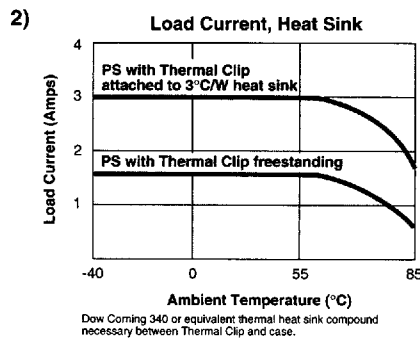
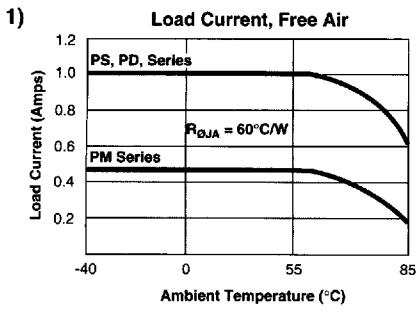
Specifications @ 25°C

PART NUMBER		PS1201 ¹ PD1201	PS2401 ¹ PD2401	PS2601 ¹ PD2601	PM1204	PM1205	PM1206	UNITS
Peak Blocking Voltage		400	500	600	400	500	600	V
Continuous Load Current	Min	0.005	0.005	0.005	0.005	0.005	0.005	A _{RMS}
	Max	1	1	1	0.5	0.5	0.5	
Off-State Leakage Current @ Rated Blocking Voltage	Max	1	1	1	1	1	1	mA
On-State Voltage Drop @ Continuous Voltage Current	Max	1.2	1.2	1.2	1.2	1.2	1.2	V _{RMS}
Critical Rate of Rise Voltage dv/dt	Min	1000	1000	1000	1000	1000	1000	V/μs
	Typ	1200	1200	1200	1200	1200	1200	
Turn-on, Turn-off Time	Max	1/2	1/2	1/2	1/2	1/2	1/2	Cycle
Zero-Cross Turn-On Voltage	Typ	2	2	2	2	2	2	V
1st 1/2 Cycle	Max	5	5	5	5	5	5	
Sub. 1/2 Cycle	Max	1	1	1	1	1	1	
Operating Frequency ²		20 500	20 500	20 500	20 500	20 500	20 500	Hz
Load Power Factor for Guaranteed Turn-On ³		0.25	0.25	0.25	0.25	0.25	0.25	
Input Control Current	Typ	2	2	2	2	2	2	mA
I _{LED}	Max	5	5	5	5	5	5	
For High Noise Environment	Typ	3	3	3	3	3	3	
	Max	10	10	10	10	10	10	
Input Voltage Drop	Min	0.9	0.9	0.9	0.9	0.9	0.9	V
V _F @ 5mA	Typ	1.2	1.2	1.2	1.2	1.2	1.2	
	Max	1.4	1.4	1.4	1.4	1.4	1.4	
Input Drop-out Voltage	Min	0.8	0.8	0.8	0.8	0.8	0.8	V
Reverse Input Leakage Current @ 5V	Max	10	10	10	10	10	10	μA
Input/Output Capacitance	Max	3	3	3	3	3	3	pF
Input to Output Isolation		2500	2500	2500	2500	2500	2500	V _{RMS}
With "E" Suffix (optional)		3750	3750	3750	3750	3750	3750	

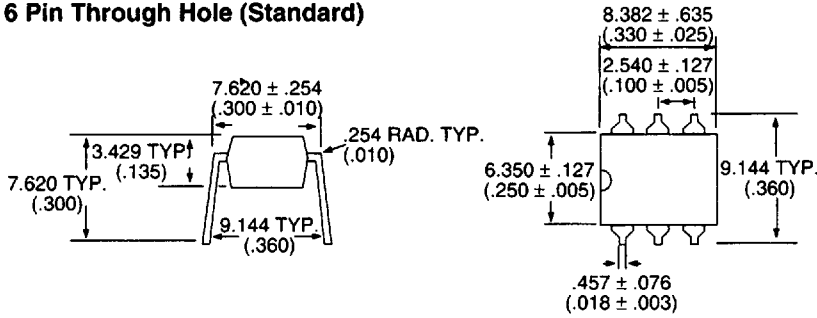
¹Operation to 3A with heat sink

²Zero-cross 1st 1/2 cycle @ <100Hz

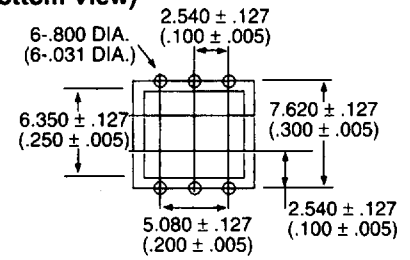
³Snubber circuits may be required at low power factors



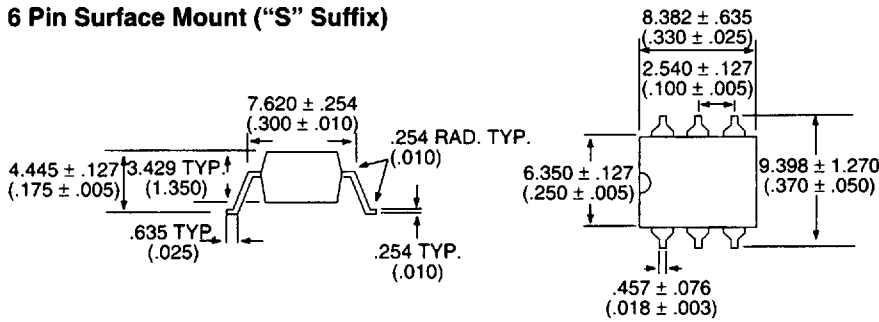
6 Pin Through Hole (Standard)



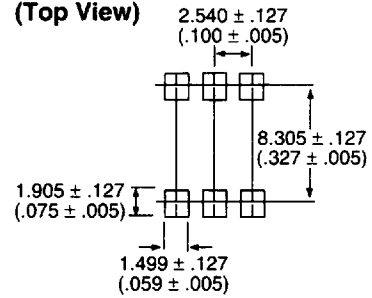
6 Pin PC Board Pattern (Bottom View)



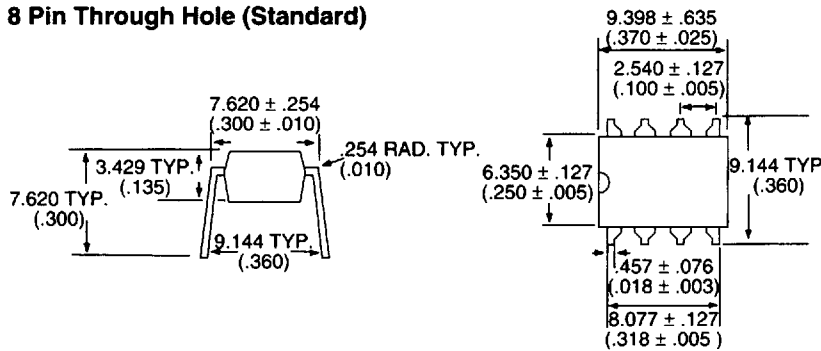
6 Pin Surface Mount ("S" Suffix)



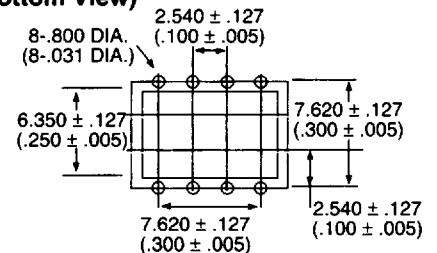
6 Pin Mounting Pad (Top View)



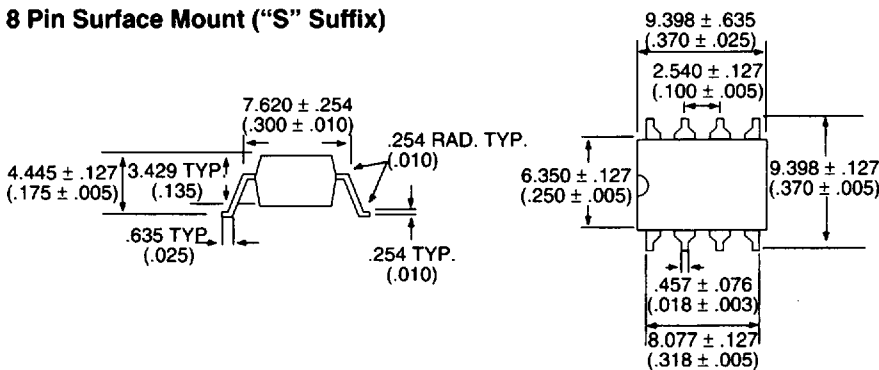
8 Pin Through Hole (Standard)



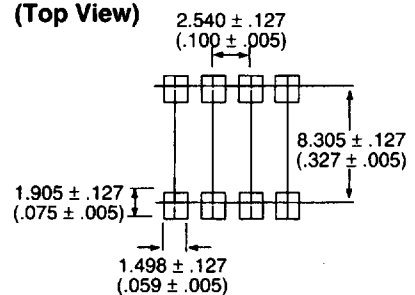
8 Pin PC Board Pattern (Bottom View)



8 Pin Surface Mount ("S" Suffix)

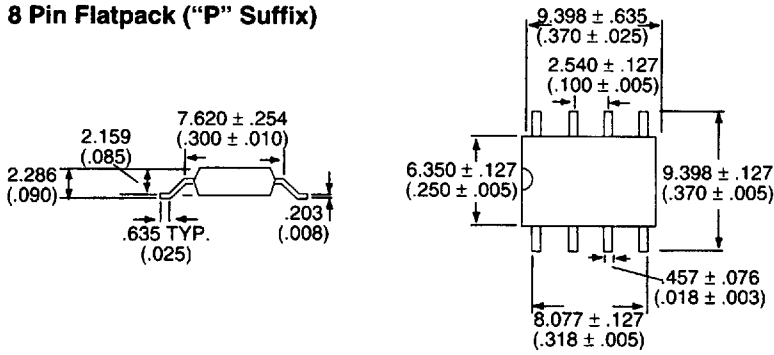


8 Pin Mounting Pad (Top View)

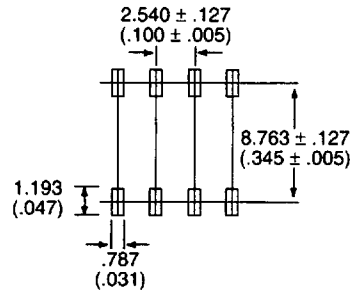


DIMENSIONS
mm
(Inches)

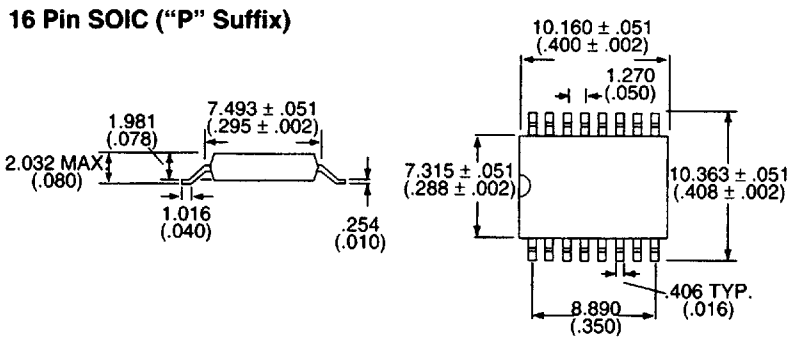
8 Pin Flatpack ("P" Suffix)



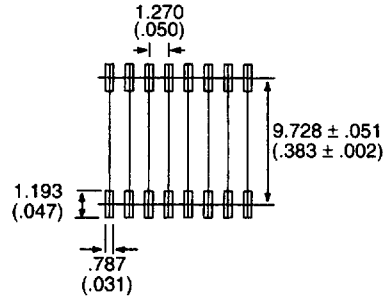
8 Pin Flatpack Mounting Pad (Top View)



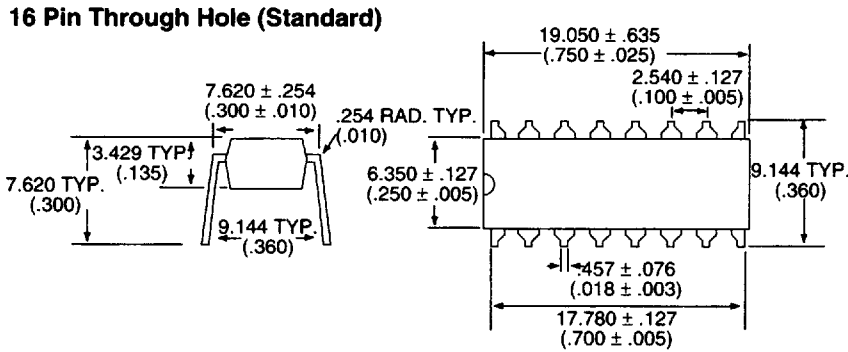
16 Pin SOIC ("P" Suffix)



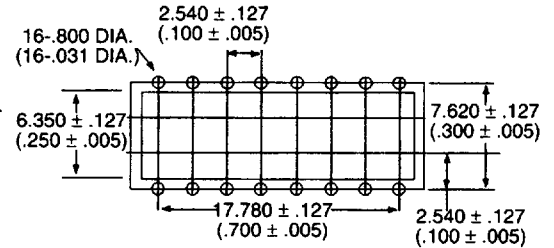
16 Pin SOIC Mounting Pad (Top View)



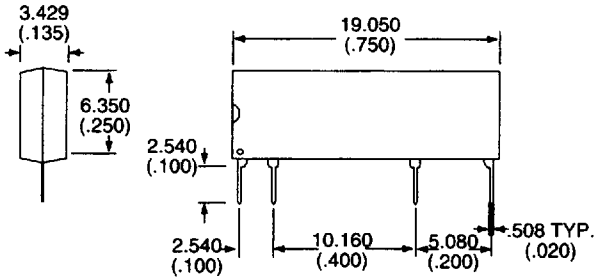
16 Pin Through Hole (Standard)



16 Pin PC Board Pattern (Bottom View)

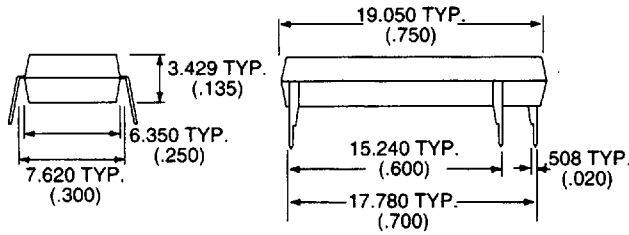


8 Pin SIP

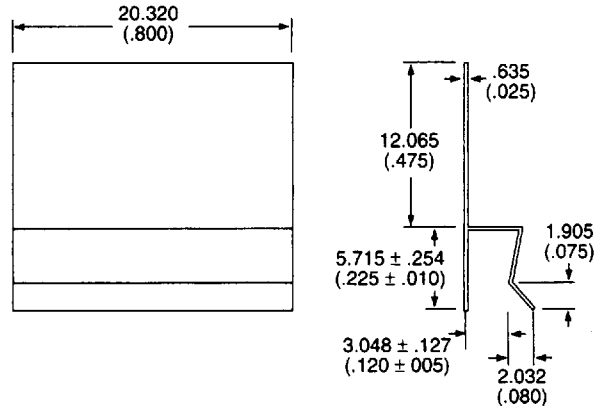


DIMENSIONS
mm
(Inches)

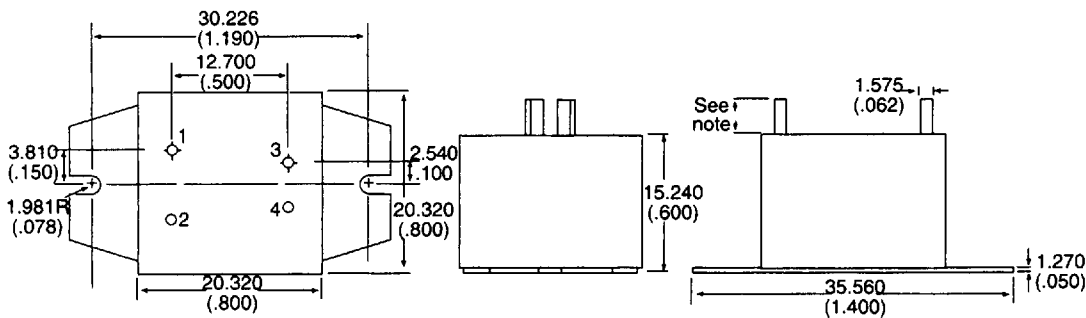
16 Pin DIP



Thermal Clip

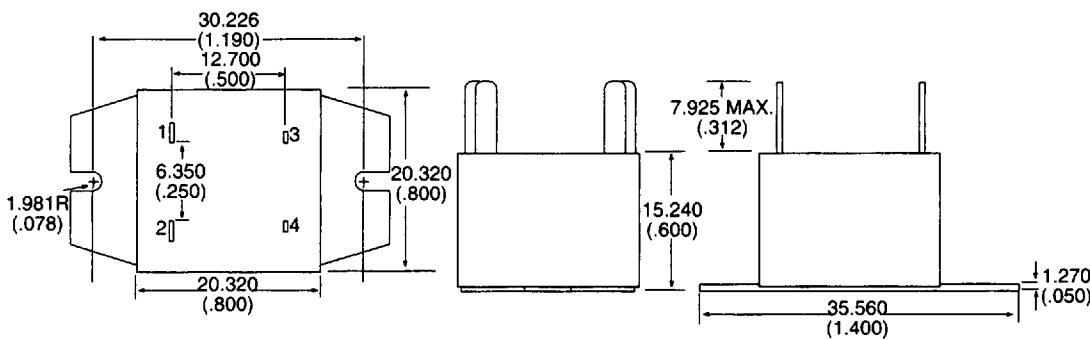


OptoFILM® 10A Series, Pins

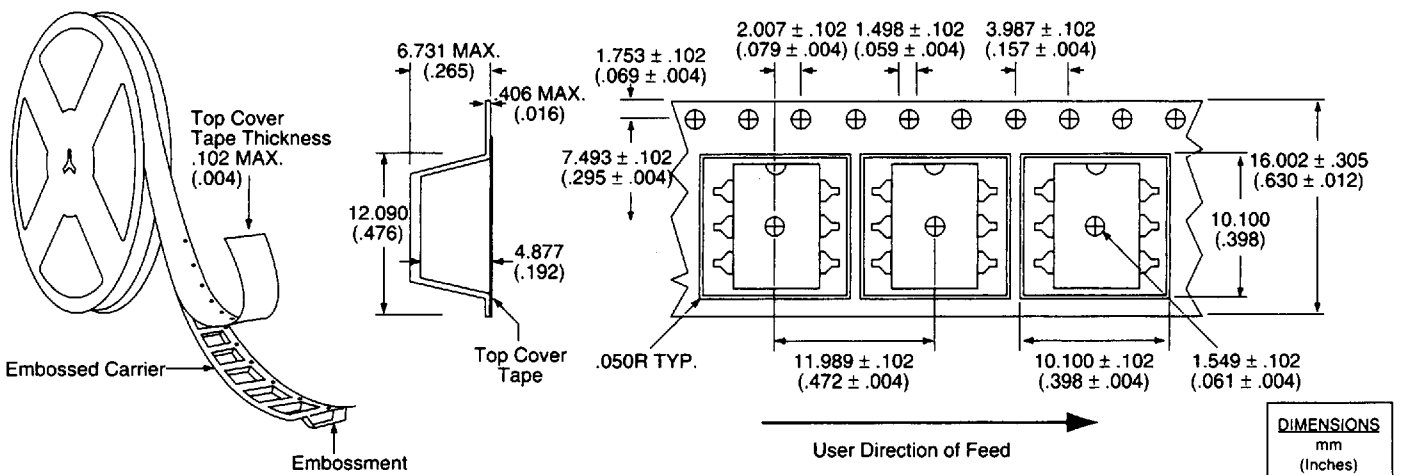


Note: Specify "-1" (0.300" pins)
 Specify "-3" (0.175" pins)

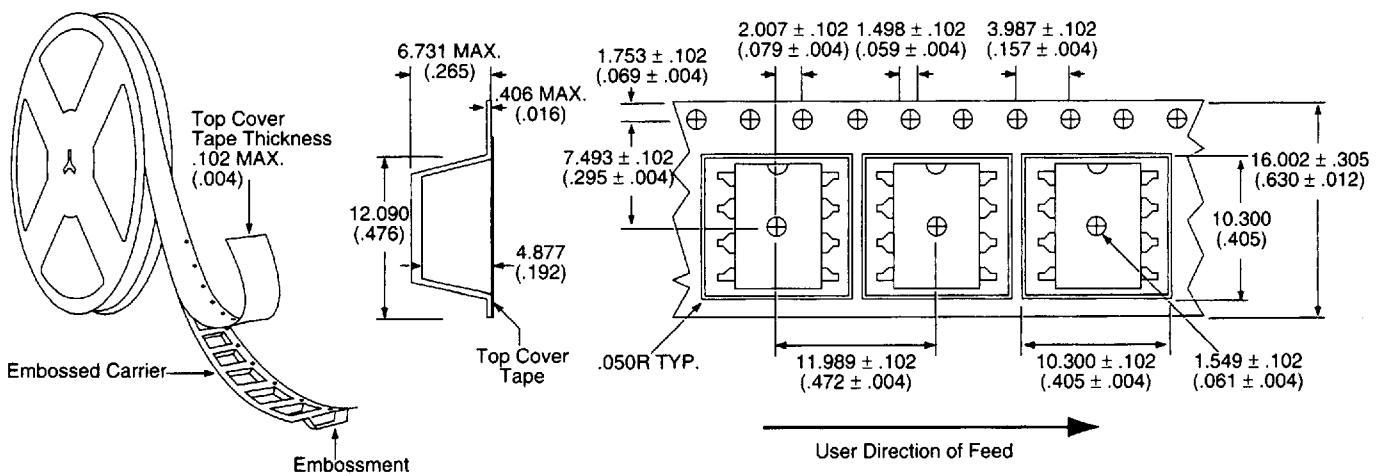
OptoFILM® 10A Series, Quick Connect



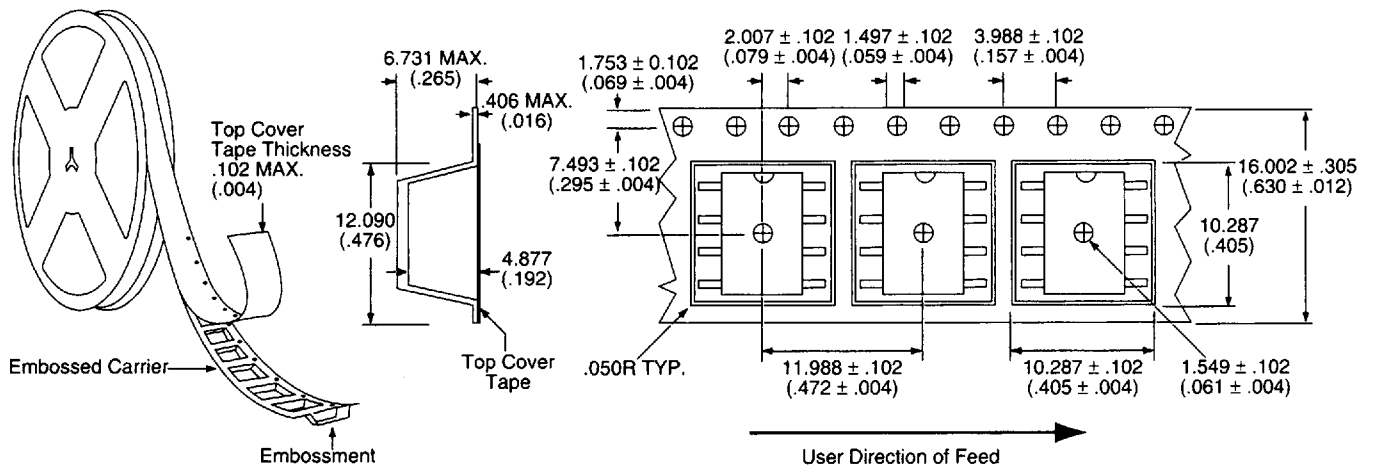
Tape and Reel Packaging for 6 Pin Surface Mount Package



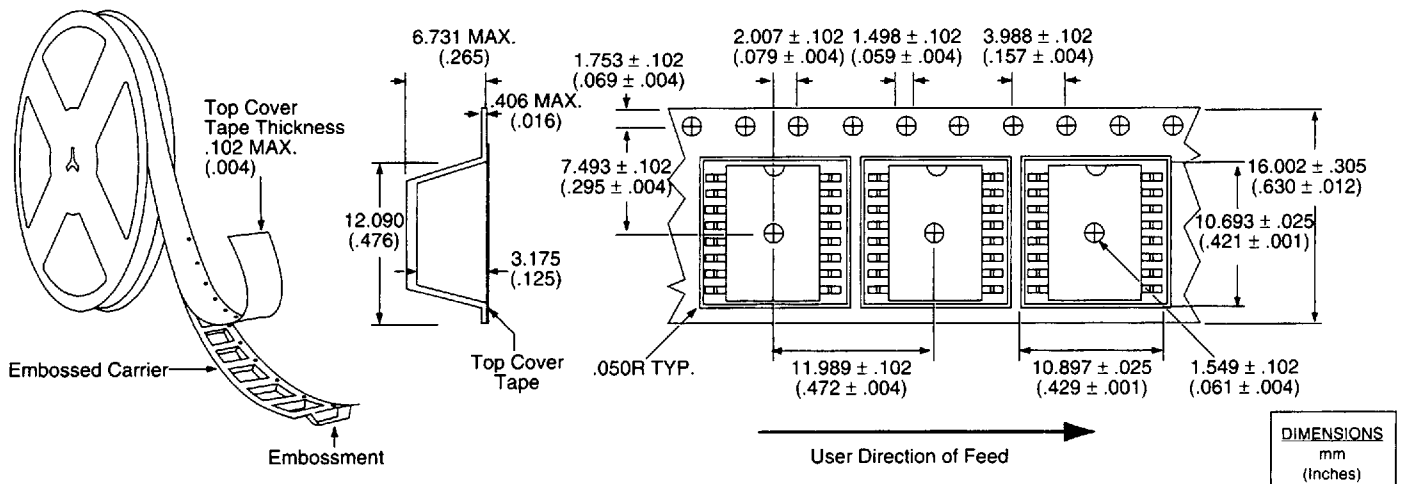
Tape and Reel Packaging for 8 Pin Surface Mount Package



Tape and Reel Packaging for 8 Pin Flatpack Package



Tape and Reel Packaging for 16 Pin SOIC Package



DIMENSIONS
mm
(Inches)