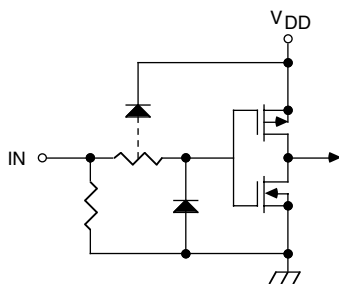


Typical Input



Absolute Maximum Ratings: (Notes 1–6)

at +25°C Free-Air Temperature

Output Voltage, V_{CE}	50V
Supply Voltage, V_{DD}	15V
Input Voltage Range, V_{IN}	−0.3V to $V_{DD} + 0.3V$
Continuous Collector Current, I_C	500mA
Package Power Dissipation:	
MIC5800 Plastic DIP (Note 1)	2.1W
MIC5801 Plastic DIP (Note 2)	2.5W
MIC5800 SOIC (Note 3)	1.0W
MIC5801 PLCC (Note 4)	2.25W
MIC5801 CERDIP (Note 5)	3.1W
MIC5801 Wide SOIC (Note 6)	1.4 Watt
Operating Temperature Range, T_A	−40°C to +85°C
Storage Temperature Range, T_S	−65°C to +125°C

Note 1: Derate at 16.7 mW/°C above $T_A = +25^\circ\text{C}$

Note 2: Derate at 20 mW/°C above $T_A = +25^\circ\text{C}$

Note 3: Derate at 8.5 mW/°C above $T_A = +25^\circ\text{C}$

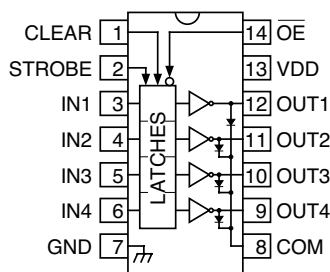
Note 4: Derate at 18.2 mW/°C above $T_A = +25^\circ\text{C}$

Note 5: Derate at 25 mW/°C above $T_A = +25^\circ\text{C}$

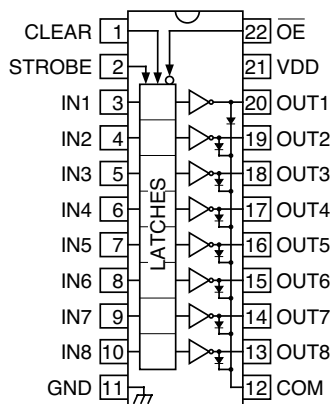
Note 6: Derate at 11 mW/°C above $T_A = +25^\circ\text{C}$

Note 7: Micrel CMOS devices have input-static protection but are susceptible to damage when exposed to extremely high static electrical charges.

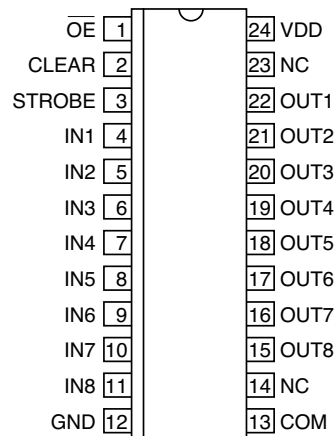
Pin Configuration



MIC5800BN, BM

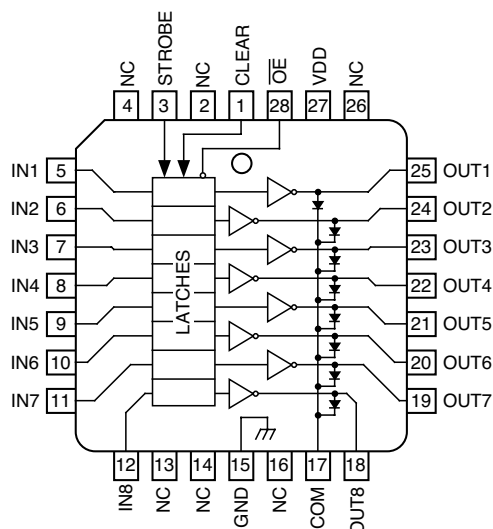


MIC5801BN, AJBQ



MIC5801BWM

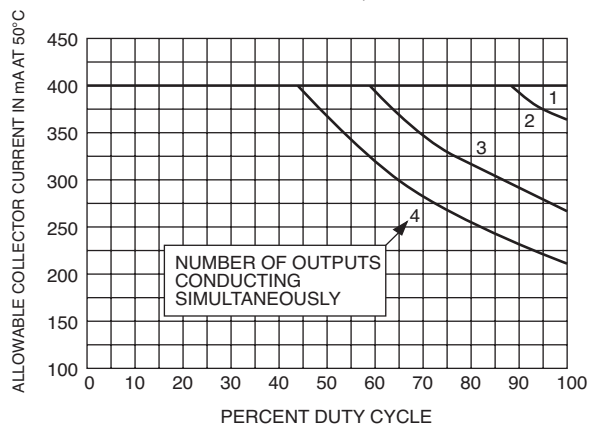
Pin Configurations (continued)



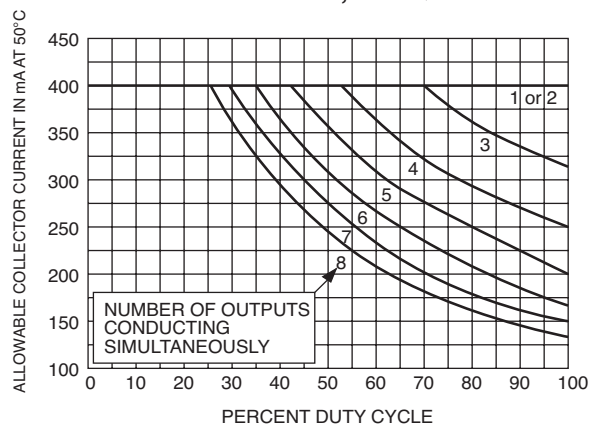
MIC5801BV

Allowable Output Current As A Function of Duty Cycle

MIC5800BN, BM



MIC5801BN, AJBQ

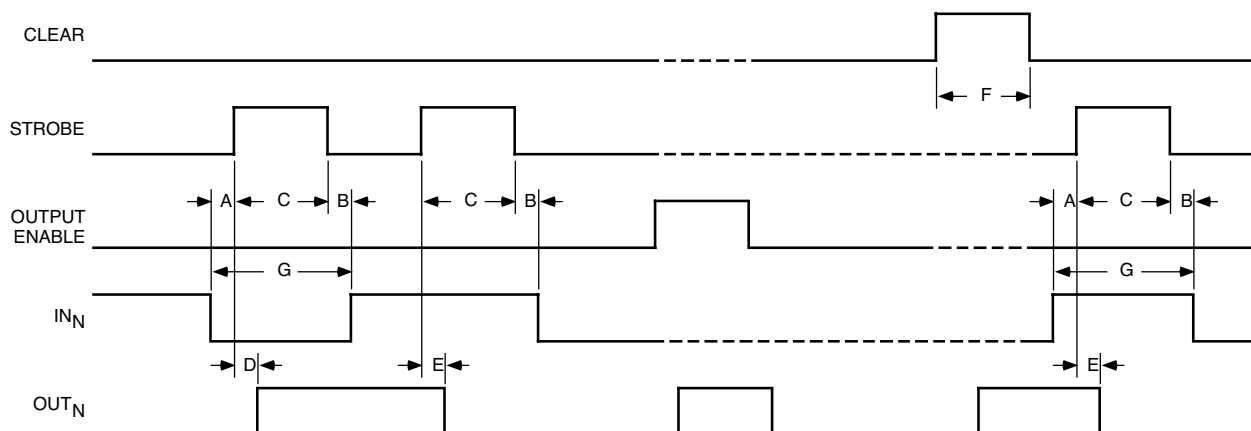


Electrical Characteristics (Note 1): at $T_A = +25^\circ\text{C}$, $V_{DD} = 5\text{V}$ (unless otherwise noted)

Characteristic	Symbol	Test Conditions	Limits			Units
			Min.	Typ.	Max.	
Output Leakage Current	I_{CEX}	$V_{CE} = 50\text{ V}$, $T_A = +25^\circ\text{C}$			50	μA
		$V_{CE} = 50\text{ V}$, $T_A = +70^\circ\text{C}$			100	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 100\text{ mA}$		0.9	1.1	V
		$I_C = 200\text{ mA}$		1.1	1.3	
		$I_C = 350\text{ mA}$, $V_{DD} = 7.0\text{ V}$		1.3	1.6	
Input Voltage	$V_{IN(0)}$				1.0	V
	$V_{IN(1)}$	$V_{DD} = 12\text{ V}$	10.5			
		$V_{DD} = 10\text{ V}$	8.5			
		$V_{DD} = 5.0\text{ V}$ (See Note)	3.5			
Input Resistance	R_{IN}	$V_{DD} = 12\text{ V}$	50	200		$\text{k}\Omega$
		$V_{DD} = 10\text{ V}$	50	300		
		$V_{DD} = 5.0\text{ V}$	50	600		
Supply Current	$I_{DD(ON)}$ (Each Stage)	$V_{DD} = 12\text{ V}$, Outputs Open		1.0	2.0	mA
		$V_{DD} = 10\text{ V}$, Outputs Open		0.9	1.7	
		$V_{DD} = 5.0\text{ V}$, Outputs Open		0.7	1.0	
	$I_{DD(OFF)}$ (Total)	$V_{DD} = 12\text{ V}$, Outputs Open, Inputs = 0 V			200	μA
		$V_{DD} = 5.0\text{ V}$, Outputs Open, Inputs = 0 V		50	100	
Clamp Diode Leakage Current	I_R	$V_R = 50\text{ V}$, $T_A = +25^\circ\text{C}$			50	μA
		$V_R = 50\text{ V}$, $T_A = +70^\circ\text{C}$			100	
Clamp Diode Forward Voltage	V_F	$I_F = 350\text{ mA}$		1.7	2.0	V

NOTE : Operation of these devices with standard TTL or DTL may require the use of appropriate pull-up resistors to insure a minimum logic "1".

NOTE 1: Specification for packaged product only.



Timing Conditions

(Logic Levels are V_{DD} and Ground)

A.	Minimum data active time before strobe enabled (data set-up time)	50ns
B.	Minimum data active time after strobe disabled (data hold time)	50ns
C.	Minimum strobe pulse width	125ns
D.	Typical time between strobe activation and output on to off transition	500ns
E.	Typical time between strobe activation and output off to on transition	500ns
F.	Minimum clear pulse width	300ns
G.	Minimum data pulse width	225ns

Truth Table

IN _N	Strobe	Clear	Output Enable	OUT _N	
				t-1	t
0	1	0	0	X	OFF
1	1	0	0	X	ON
X	X	1	X	X	OFF
X	X	X	1	X	OFF
X	0	0	0	ON	ON
X	0	0	0	OFF	OFF

X = Irrelevant

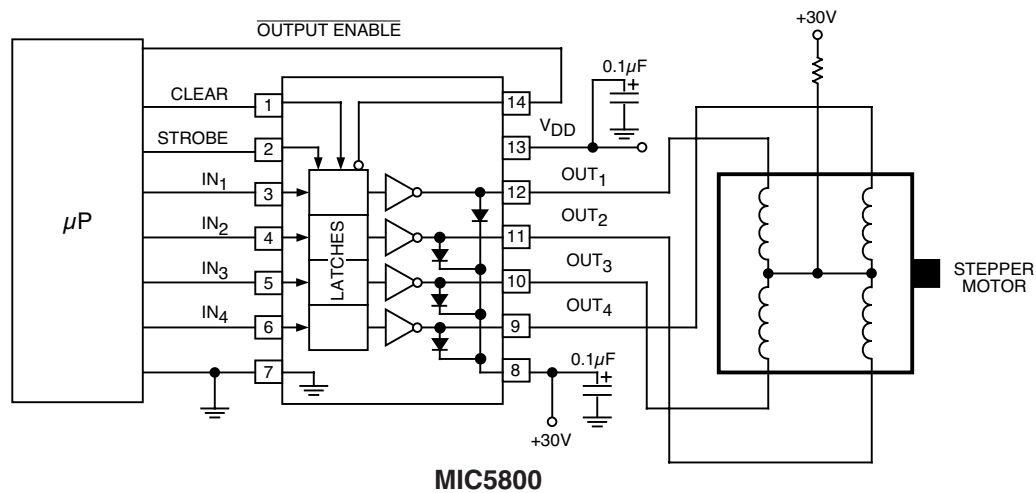
t-1 = previous output state

t = present output state

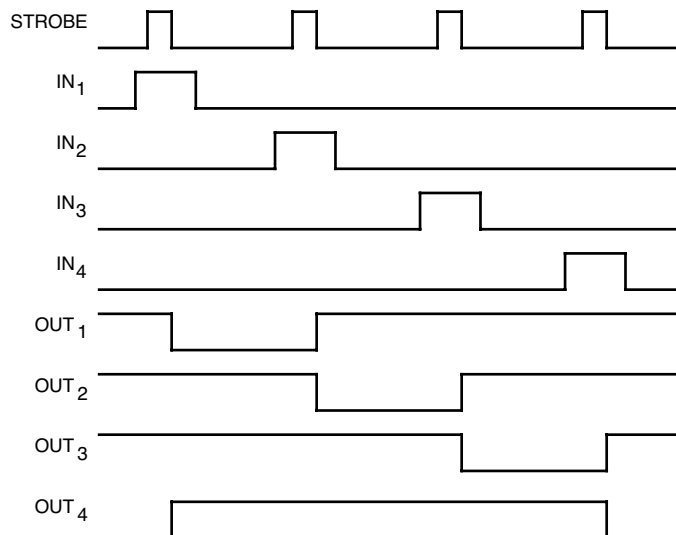
Information present at an input is transferred to its latch when the STROBE is high. A high CLEAR input will set all latches to the output OFF condition regardless of the data or STROBE input levels. A high OUTPUT ENABLE will set all outputs to the off condition, regardless of any other input conditions. When the OUTPUT ENABLE is low, the outputs depend on the state of their respective latches.

Typical Application

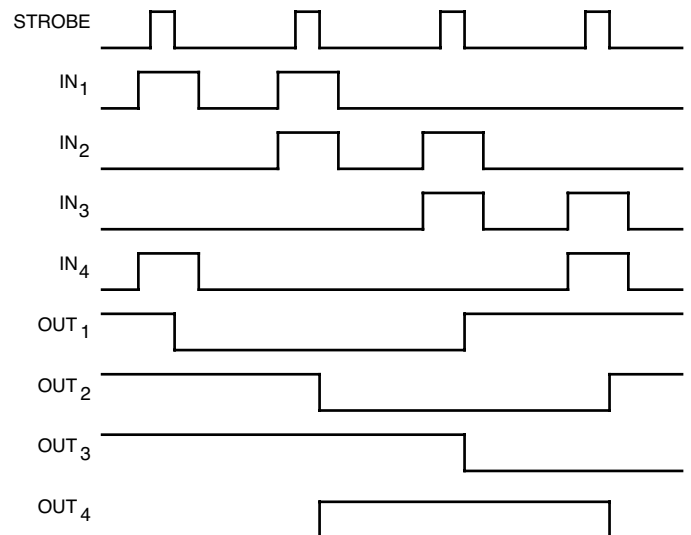
Unipolar Stepper-Motor Drive



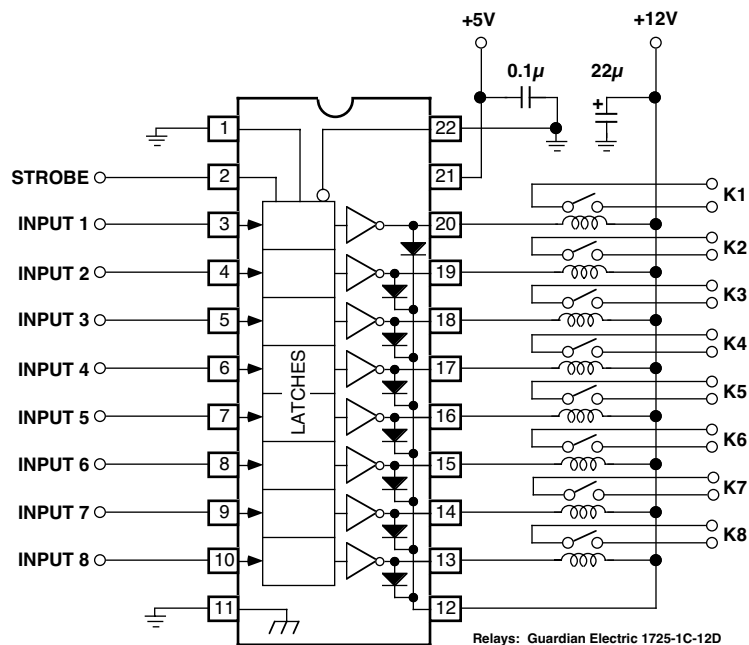
UNIPOLAR WAVE DRIVE



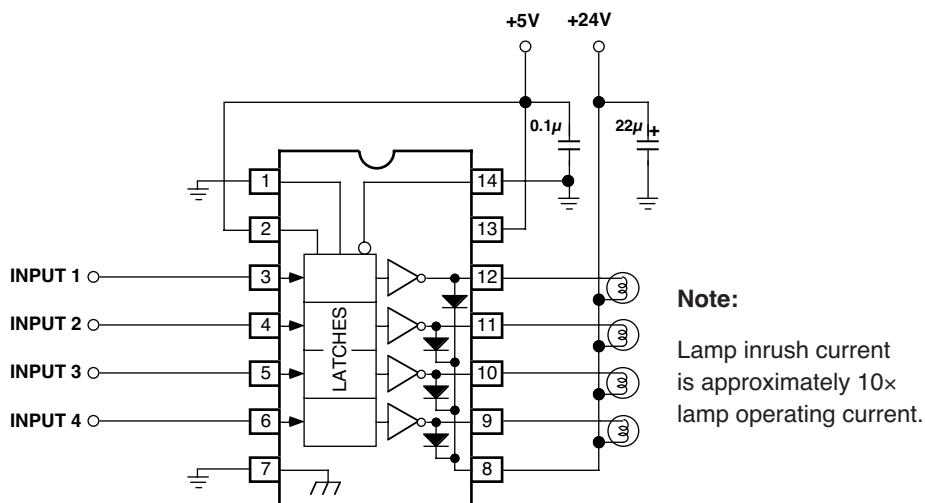
UNIPOLAR 2-PHASE DRIVE



Typical Applications

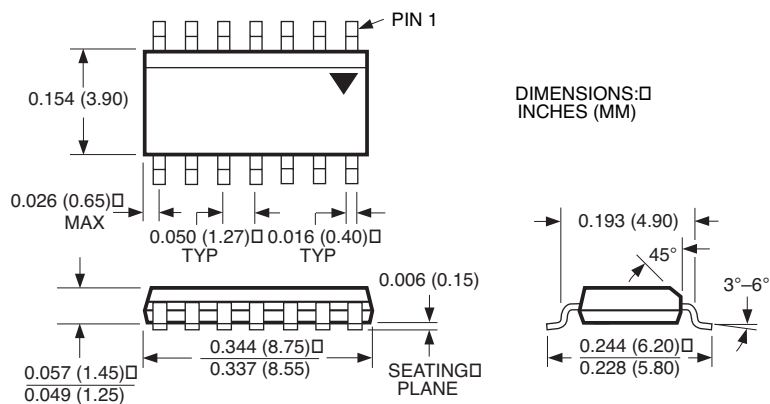


MIC5801 Relay Driver

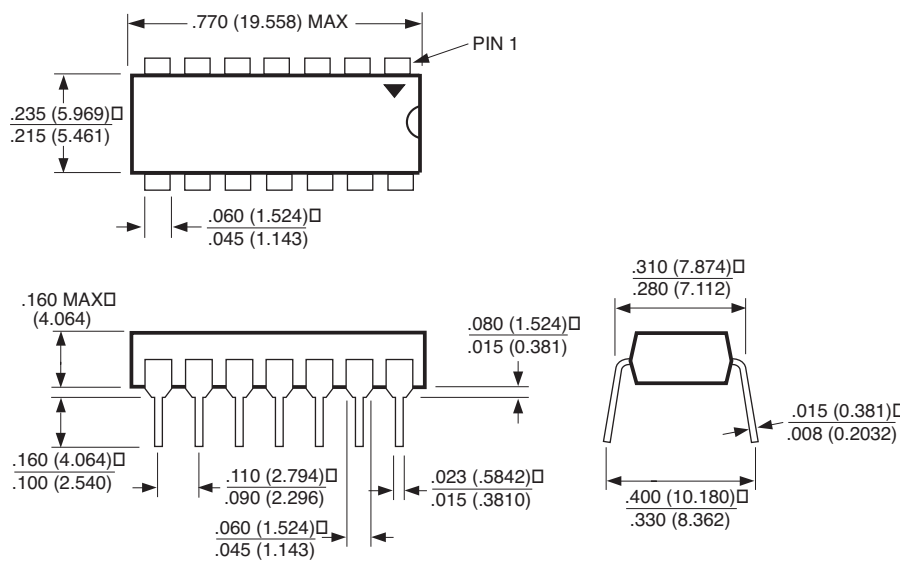


MIC5800 Incandescent/Halogen Lamp Driver

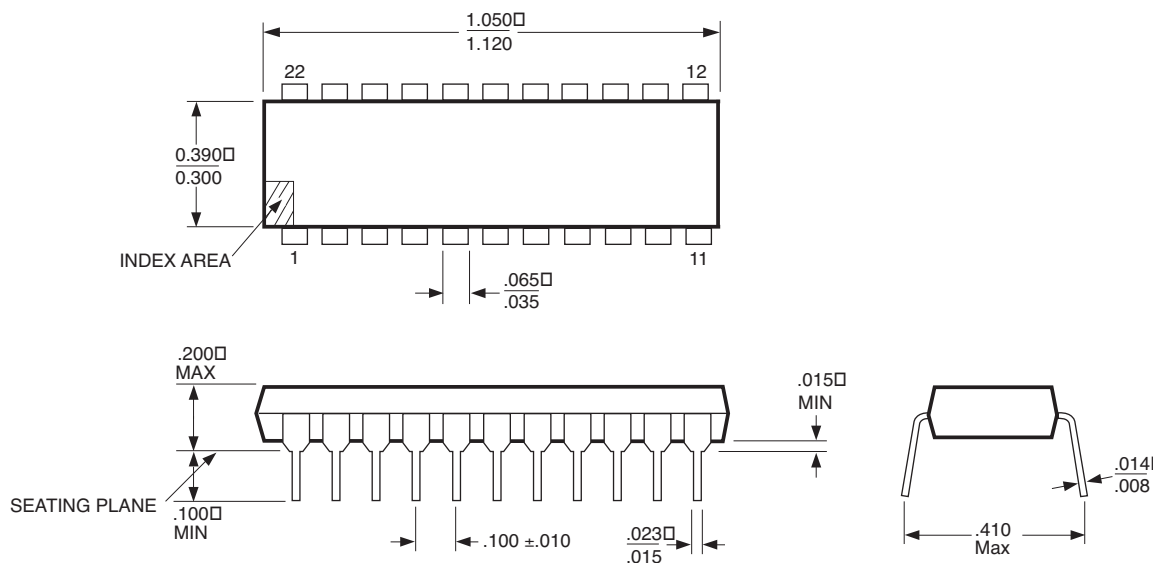
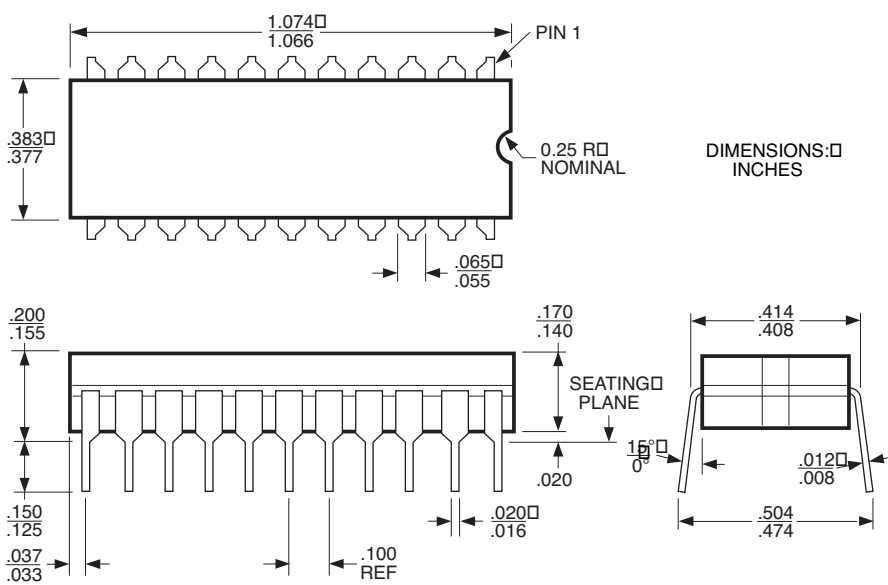
Package Information

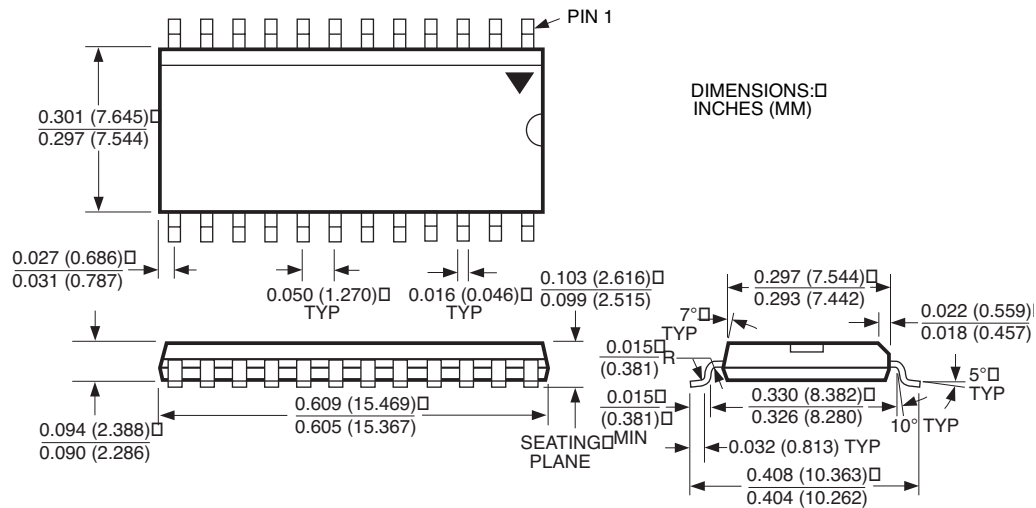


14-Pin SOIC (M)

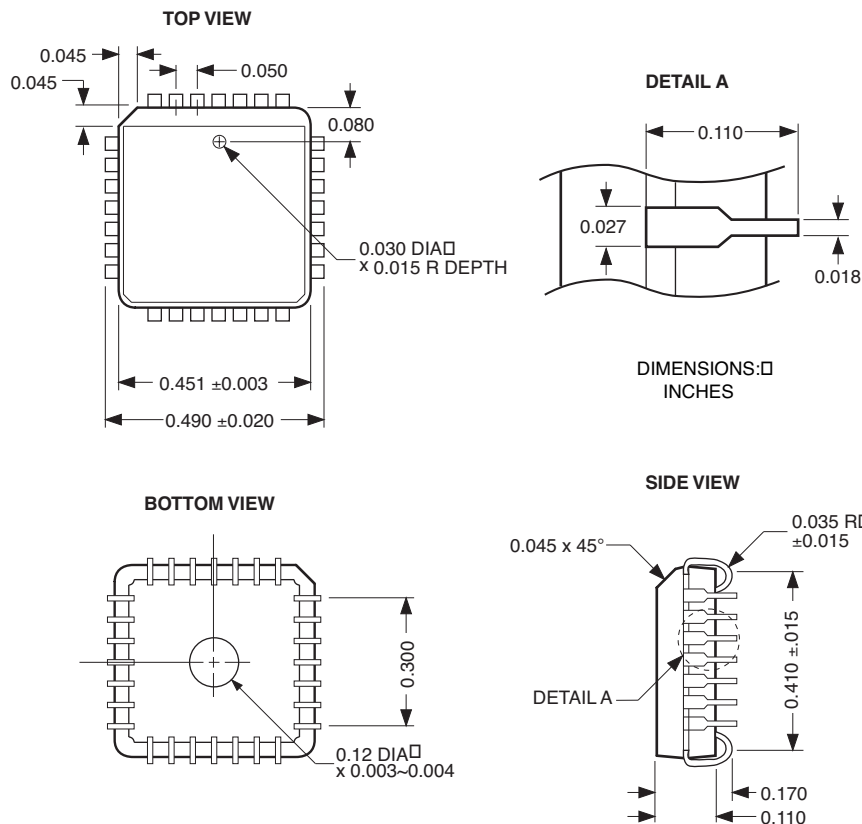


14-Pin Plastic DIP (N)

**22-Pin Plastic DIP (N)****22-Pin Ceramic DIP (J)**



24-Pin SOIC (M)



28-Pin PLCC (V)

MICREL INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

This information furnished by Micrel in this data sheet is believed to be accurate and reliable. However no responsibility is assumed by Micrel for its use. Micrel reserves the right to change circuitry and specifications at any time without notification to the customer.

Micrel Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of Micrel Products for use in life support appliances, devices or systems is a Purchaser's own risk and Purchaser agrees to fully indemnify Micrel for any damages resulting from such use or sale.

© 1998 Micrel Incorporated