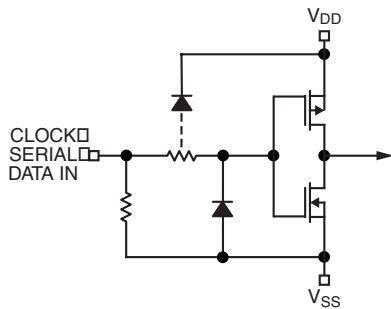
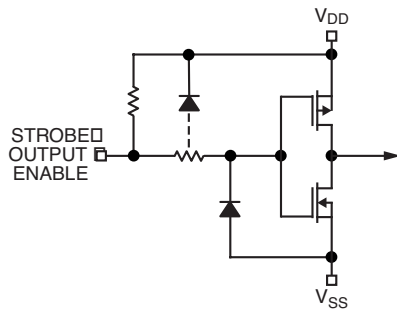


Typical Input Circuits



Absolute Maximum Ratings (Note 1)

at 25°C Free-Air Temperature and $V_{SS} = 0V$

Output Voltage, V_{CE}	(MIC5821)	50V
	(MIC5822)	80V
Output Voltage, $V_{CE\ SUS}$	(MIC5821)(Note 3)	35V
	(MIC5822)(Note 3)	50V
Logic Supply Voltage, V_{DD}		15V
Input Voltage Range, V_{IN}		$-0.3V$ to $V_{DD} + 0.3V$
$V_{DD} - V_{EE}$		25V
Emitter Supply Voltage, V_{EE}		-20V
Continuous Output Current, I_{OUT}		500mA
Package Power Dissipation, P_D (Note 1)		1.67W
Operating Temperature Range, T_A		$-55^{\circ}C$ to $+85^{\circ}C$
Storage Temperature Range, T_S		$-65^{\circ}C$ to $+150^{\circ}C$

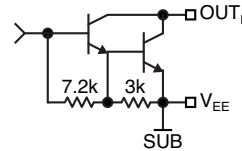
Note 1: Derate at the rate of 16.7mW/°C above $T_A = 25^{\circ}C$.

Note 2: CMOS devices have input static protection but are susceptible to damage when exposed to extremely high static electrical charges.

Note 3: For inductive load applications.

Note 4: Specification for packaged product only.

Typical Output Driver



Maximum Allowable Duty Cycle (Plastic DIP)

Number of Outputs ON ($I_{OUT} = 200mA$ $V_{DD} = 12V$)	Maximum Allowable Duty Cycle at Ambient Temperature of				
	25°C	40°C	50°C	60°C	70°C
8	73%	62%	55%	47%	40%
7	83%	71%	62%	54%	46%
6	97%	82%	72%	63%	53%
5	100%	98%	87%	75%	63%
4	100%	100%	100%	93%	79%
3	100%	100%	100%	100%	100%
2	100%	100%	100%	100%	100%
1	100%	100%	100%	100%	100%

Electrical Characteristics (Note 4) at $T_A = 25^\circ\text{C}$ $V_{DD} = 5\text{V}$, $V_{EE} = V_{SS} = 0\text{V}$ (unless otherwise specified)

Characteristic	Symbol	Applicable Devices	Test Conditions	Limits		
				Min.	Max.	Unit
Output Leakage Current	I_{CEX}	MIC5821	$V_{OUT} = 50\text{V}$		50	μA
			$V_{OUT} = 50\text{V}$, $T_A = +70^\circ\text{C}$		100	
		MIC5822	$V_{OUT} = 80\text{V}$		50	
			$V_{OUT} = 80\text{V}$, $T_A = +70^\circ\text{C}$		100	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	Both	$I_{OUT} = 100\text{mA}$		1.1	V
			$I_{OUT} = 200\text{mA}$		1.3	
			$I_{OUT} = 350\text{mA}$, $V_{DD} = 7.0\text{V}$		1.6	
Input Voltage	$V_{IN(0)}$	Both			0.8	V
	$V_{IN(1)}$	Both	$V_{DD} = 12\text{V}$	10.5		
			$V_{DD} = 10\text{V}$	8.5		
			$V_{DD} = 5.0\text{V}$	3.5		
Input Resistance	R_{IN}	Both	$V_{DD} = 12\text{V}$	50		$\text{k}\Omega$
			$V_{DD} = 10\text{V}$	50		
			$V_{DD} = 5.0\text{V}$	50		
Supply Current	$I_{DD(ON)}$	Both	One Driver ON, $V_{DD} = 12\text{V}$		4.5	mA
			One Driver ON, $V_{DD} = 10\text{V}$		3.9	
			One Driver ON, $V_{DD} = 5.0\text{V}$		2.4	
			All Drivers ON, $V_{DD} = 12\text{V}$		16	
			All Drivers ON, $V_{DD} = 10\text{V}$		14	
			All Drivers ON, $V_{DD} = 5.0\text{V}$		8	
	$I_{DD(OFF)}$	Both	All Drivers OFF, $V_{DD} = 5.0\text{V}$, All Inputs = 0V		1.6	
			All Drivers OFF, $V_{DD} = 12\text{V}$, All Inputs = 0V		2.9	

Electrical Characteristics (Note 4) $T_A = -55^\circ\text{C}$, $V_{DD} = 5\text{V}$, $V_{SS} = V_{EE} = 0\text{V}$ (unless otherwise noted)

Characteristic	Symbol	Test Conditions	Limits			
			Min.	Max.	Unit	
Output Leakage Current	I_{CEX}	$V_{OUT} = 80\text{V}$		50	μA	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_{OUT} = 100\text{mA}$		1.3	V	
		$I_{OUT} = 200\text{mA}$		1.5		
		$I_{OUT} = 350\text{mA}$, $V_{DD} = 7.0\text{V}$		1.8		
Input Voltage	$V_{IN(0)}$			0.8	V	
	$V_{IN(1)}$	Both	$V_{DD} = 12\text{V}$	10.5		
$V_{DD} = 5.0\text{V}$			3.5			
Input Resistance	R_{IN}	Both	$V_{DD} = 12\text{V}$	35	$\text{k}\Omega$	
			$V_{DD} = 10\text{V}$	35		
			$V_{DD} = 5.0\text{V}$	35		
Supply Current	$I_{DD(ON)}$	Both	One Driver ON, $V_{DD} = 12\text{V}$		5.5	mA
			One Driver ON, $V_{DD} = 10\text{V}$		4.5	
			One Driver ON, $V_{DD} = 5.0\text{V}$		3.0	
			All Drivers ON, $V_{DD} = 12\text{V}$		16	
			All Drivers ON, $V_{DD} = 10\text{V}$		14	
			All Drivers ON, $V_{DD} = 5.0\text{V}$		10	
	$I_{DD(OFF)}$	Both	All Drivers OFF, $V_{DD} = 12\text{V}$		3.5	
			All Drivers OFF, $V_{DD} = 5.0\text{V}$		2.0	

Timing Conditions

($T_A = +25^\circ\text{C}$, Logic Levels are V_{DD} and V_{SS})

$V_{DD} = 5.0\text{V}$

A. Minimum Data Active Time Before Clock Pulse (Data Set-Up Time)	75 ns
B. Minimum Data Active Time After Clock Pulse (Data Hold Time)	75 ns
C. Minimum Data Pulse Width	150 ns
D. Minimum Clock Pulse Width	150 ns
E. Minimum Time Between Clock Activation and Strobe	300 ns
F. Minimum Strobe Pulse Width	100 ns
G. Typical Time Between Strobe Activation and Output Transition	500 ns

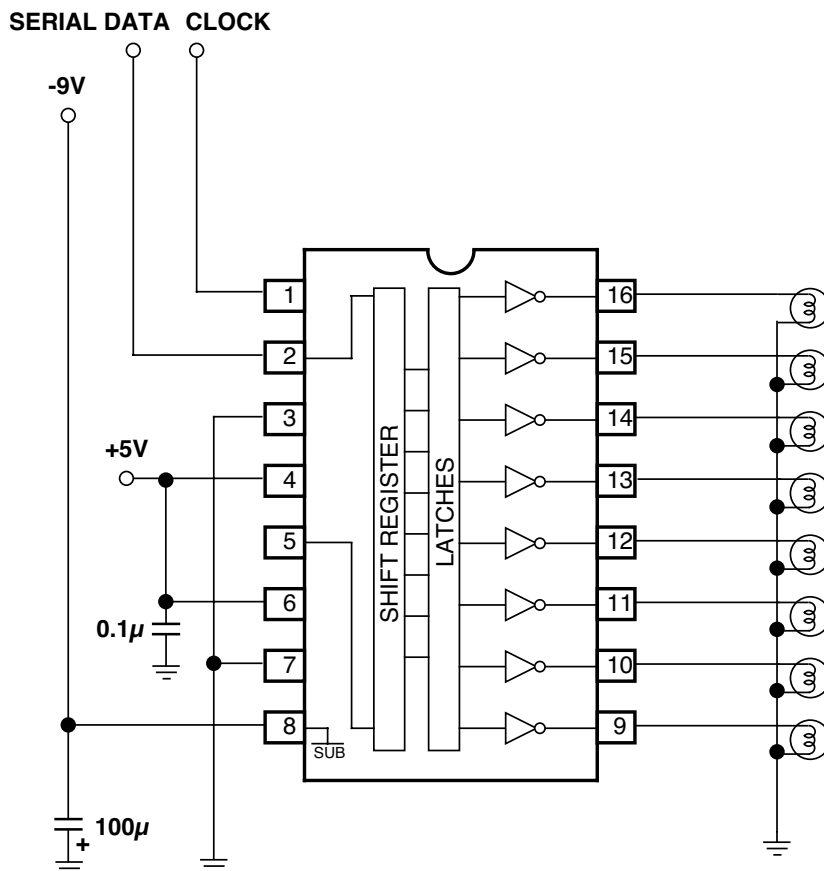
SERIAL DATA present at the input is transferred to the shift register on the logic "0" to logic "1" transition of the CLOCK input pulse. On succeeding CLOCK pulses, the registers shift data information towards the SERIAL DATA OUTPUT. The SERIAL DATA must appear at the input prior to the rising edge of the CLOCK input waveform.

Information present at any register is transferred to its respective latch when the STROBE is high (serial-to-parallel conversion). The latches will continue to accept new data as long as the STROBE is held high. Applications where the latches are bypassed (STROBE tied high) will require that the ENABLE input be high during serial entry.

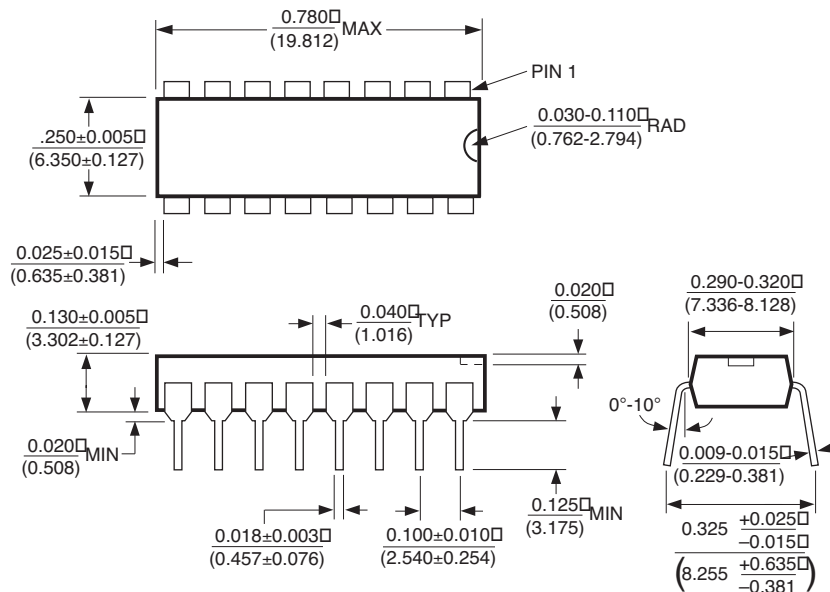
When the ENABLE input is high, all of the output buffers are disabled (OFF) without affecting the information stored in the latches or shift register. With the ENABLE input low, the outputs are controlled by the state of the latches.

Typical Applications

MIC5822 Level Shifting Lamp Driver with Darlington Emitters Tied to a Negative Supply



Package Information



16-Pin Plastic DIP (N)

MICREL INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USATEL + 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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[MIC5821YN](#) [MIC5822YN](#)