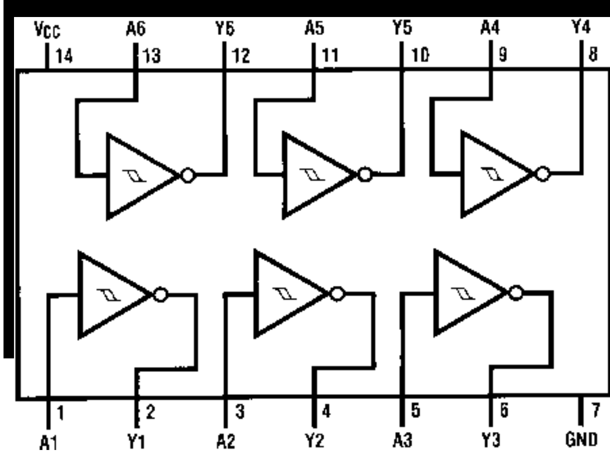
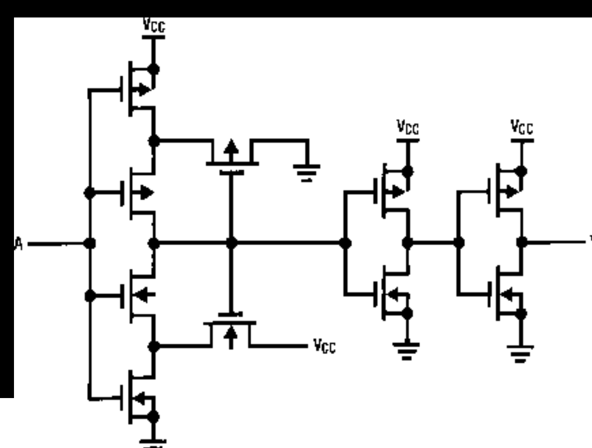
ON Semiconductor®

[redacted]



Top View



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Publication Order Number:
MM74HC14/D

Absolute Maximum Ratings[1]

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

Symbol	Parameter	Rating

[redacted]

DC Electrical Characteristics[3]

Symbol	Parameter	V_{CC} (V)	Conditions	$T_A = 25°C$		$T_A = –40°C$ to 85°C	$T_A = –55°C$ to 125°C	Units
				Typ.	Guaranteed Limits			
V_{T+}	Positive Going	2.0	Minimum	1.2	1.0	1.0	1.0	V
[redacted]								
	Current							

Note:

3. For a power supply of 5V ±10% the worst case output voltages (V_{OH}, and V_{OL}) occur for HC at 4.5V. Thus the 4.5V values should be used when designing with this supply. Worst case V_{IH} and V_{IL} occur at V_{CC} = 5.5V and 4.5V respectively. (The V_{IH} value at 5.5V is 3.85V.) The worst case leakage current (I_{IN}, I_{CC}, and I_{OZ}) occur for CMOS at the higher voltage and so the 6.0V values should be used.

AC Electrical Characteristics

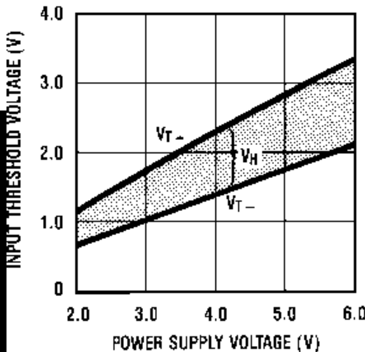
V_{CC} = 5V, T_A = 25°C, C_L = 15pF, t_r = t_f = 6ns

Symbol	Parameter	Conditions	Typ.	Guaranteed Limit	Units
t_{PHL}, t_{PLH}	Maximum Propagation Delay		12	22	ns

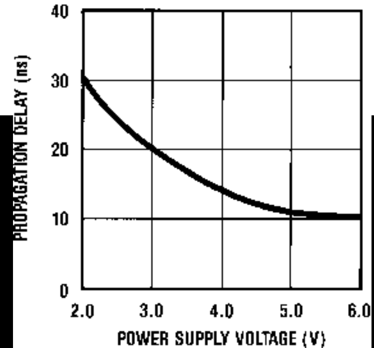
[redacted]

Typical Performance Characteristics

Input Threshold, V_T+, V_T-, vs Power Supply Voltage

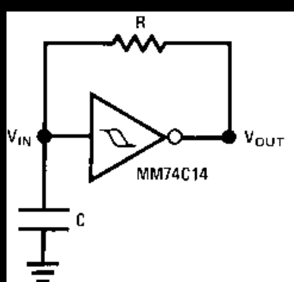


Propagation Delay vs. Power Supply



Typical Applications

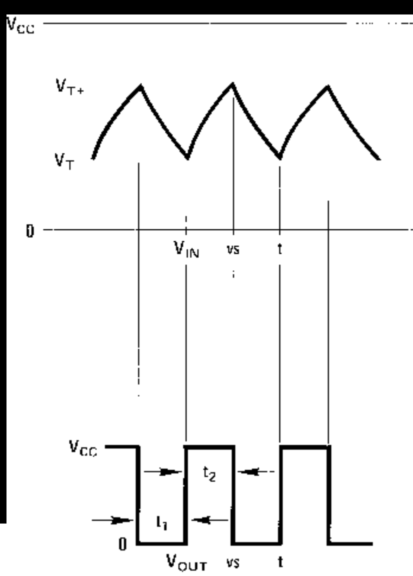
Low Power Oscillator



$$t_1 \approx RC \ln \frac{V_{T+}}{V_{T-}}$$

$$t_2 \approx RC \ln \frac{V_{CC} - V_T}{V_{CC} - V_{T+}}$$

$$f \approx \frac{1}{RC \ln \frac{V_{T+} (V_{CC} - V_{T-})}{V_{T-} (V_{CC} - V_{T+})}}$$



Note:

The equations assume $t_1 + t_2 >> t_{pd0} + t_{pd1}$

PUBLICATION ORDERING INFORMATION

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