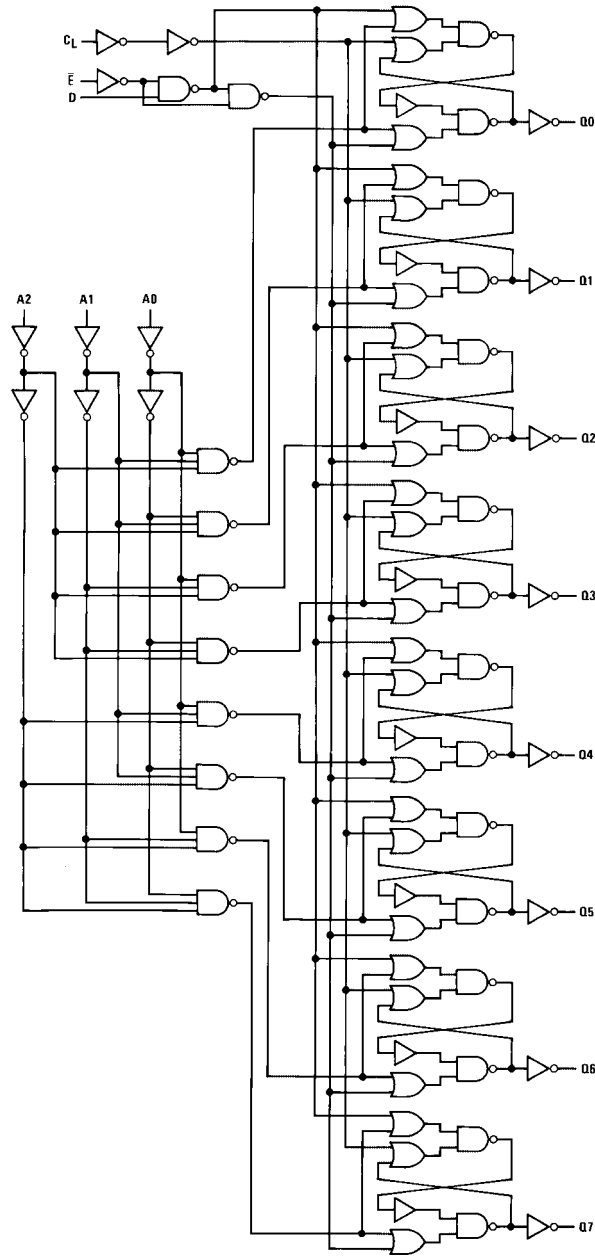


Logic Diagram



Absolute Maximum Ratings (Note 1)

(Note 2)

DC Supply Voltage (V_{DD})	-0.5V to +18 V_{DC}
Input Voltage (V_{IN})	-0.5V to $V_{DD} + 0.5 V_{DC}$
Storage Temperature (T_S)	-65°C to +150°C
Power Dissipation (P_D)	
Dual-In-Line	700 mW
Small Outline	500 mW
Lead Temperature (T_L)	
(Soldering, 10 seconds)	260°C

Recommended Operating Conditions (Note 2)

DC Supply Voltage (V_{DD})	3.0V to 15 V_{DC}
Input Voltage (V_{IN})	0V to $V_{DD} V_{DC}$
Operating Temperature Range (T_A)	-55°C to +125°C

Note 1: "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed; they are not meant to imply that the devices should be operated at these limits. The tables of "Recommended Operating Conditions" and "Electrical Characteristics" provide conditions for actual device operation.

Note 2: $V_{SS} = 0V$ unless otherwise specified.

DC Electrical Characteristics (Note 2)

Symbol	Parameter	Conditions	-55°C		+25°C			+125°C		Units
			Min	Max	Min	Typ	Max	Min	Max	
I_{DD}	Quiescent Device Current	$V_{DD} = 5V$ $V_{DD} = 10V$ $V_{DD} = 15V$		5 10 20		0.02 0.02 0.02	5 10 20	150 300 600	μA	
V_{OL}	LOW Level Output Voltage	$ I_{OL} \leq 1 \mu A$ $V_{DD} = 5V$ $V_{DD} = 10V$ $V_{DD} = 15V$		0.05 0.05 0.05		0 0 0	0.05 0.05 0.05	0.05 0.05 0.05	V	
V_{OH}	HIGH Level Output Voltage	$ I_{OL} \leq 1 \mu A$ $V_{DD} = 5V$ $V_{DD} = 10V$ $V_{DD} = 15V$	4.95 9.95 14.95		4.95 9.95 14.95	5.0 10 15		4.95 9.95 14.95	V	
V_{IL}	LOW Level Input Voltage	$V_{DD} = 5V, V_O = 0.5V$ or 4.5V $V_{DD} = 10V, V_O = 1V$ or 9V $V_{DD} = 15V, V_O = 1.5V$ or 13.5V		1.5 3.0 4.0		2.25 4.5 6.75	1.5 3.0 4.0	1.5 3.0 4.0	V	
V_{IH}	HIGH Level Input Voltage	$V_{DD} = 5V, V_O = 0.5V$ or 4.5V $V_{DD} = 10V, V_O = 1V$ or 9V $V_{DD} = 15V, V_O = 1.5V$ or 13.5V	3.5 7.0 11.0		3.5 7.0 11.0	2.75 5.5 8.25		3.5 7.0 11.0	V	
I_{OL}	LOW Level Output Current <small>(Note 3)</small>	$V_{DD} = 5V, V_O = 0.4V$ $V_{DD} = 10V, V_O = 0.5V$ $V_{DD} = 15V, V_O = 1.5V$	0.64 1.6 4.2		0.51 1.3 3.4	0.88 2.25 8.8		0.36 0.9 2.4	mA	
I_{OH}	HIGH Level Output Current <small>(Note 3)</small>	$V_{DD} = 5V, V_O = 4.6V$ $V_{DD} = 10V, V_O = 9.5V$ $V_{DD} = 15V, V_O = 13.5V$	-0.64 -1.6 -4.2		-0.51 -1.3 -3.4	-0.88 -2.25 -8.8		-0.36 -0.9 -2.4	mA	
I_{IN}	Input Current	$V_{DD} = 15V, V_{IN} = 0V$ $V_{DD} = 15V, V_{IN} = 15V$		-0.1 0.1		-10^{-5} 10^{-5}	-0.1 0.1	-1.0 1.0	μA	

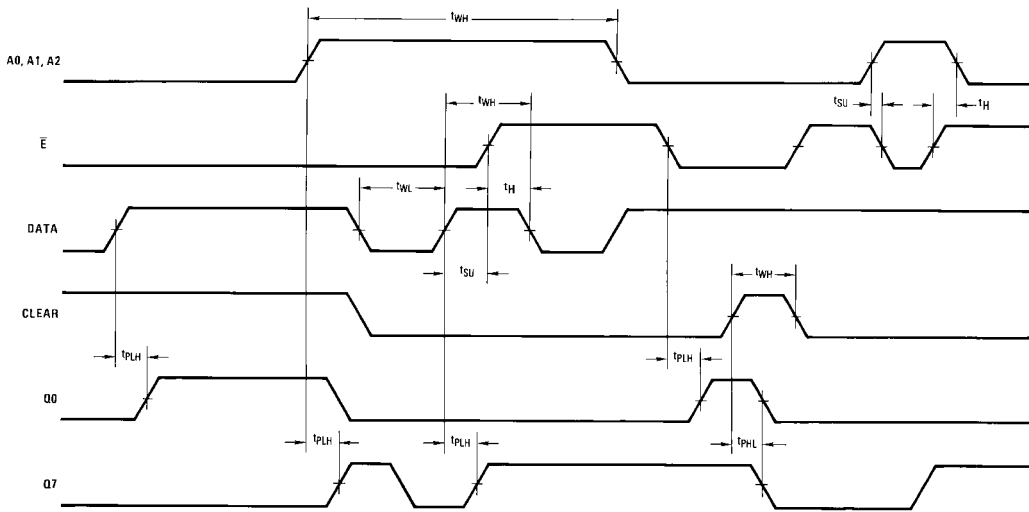
Note 3: I_{OL} and I_{OH} are tested one output at a time.

AC Electrical Characteristics (Note 4)						
T _A = 25°C, C _L = 50 pF, R _L = 200k, Input t _r = t _f = 20 ns, unless otherwise noted						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
t _{PHL} , t _{PLH}	Propagation Delay Data to Output	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		200 75 50	400 150 100	ns
t _{PLH} , t _{PHL}	Propagation Delay Enable to Output	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		200 80 60	400 160 120	ns
t _{PHL}	Propagation Delay Clear to Output	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		175 80 65	350 160 130	ns
t _{PLH} , t _{PHL}	Propagation Delay Address to Output	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		225 100 75	450 200 150	ns
t _{THL} , t _{TLH}	Transition Time (Any Output)	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		100 50 40	200 100 80	ns
T _{WH} , T _{WL}	Minimum Data Pulse Width	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		100 50 40	200 100 80	ns
t _{WH} , t _{WL}	Minimum Address Pulse Width	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		200 100 65	400 200 125	ns
t _{WH}	Minimum Clear Pulse Width	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		75 40 25	150 75 50	ns
t _{SU}	Minimum Setup Time Data to E	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		40 20 15	80 40 30	ns
t _H	Minimum Hold Time Data to E	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		60 30 25	120 60 50	ns
t _{SU}	Minimum Setup Time Address to E	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		-15 0 0	50 30 20	ns
t _H	Minimum Hold Time Address to E	V _{DD} = 5V V _{DD} = 10V V _{DD} = 15V		-50 -20 -15	15 10 5	ns
C _{PD}	Power Dissipation Capacitance	Per Package (Note 5)		100		pF
C _{IN}	Input Capacitance	Any Input		5.0	7.5	pF

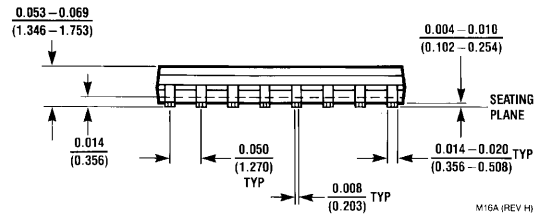
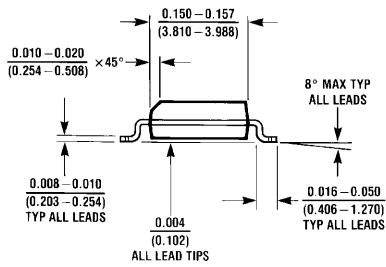
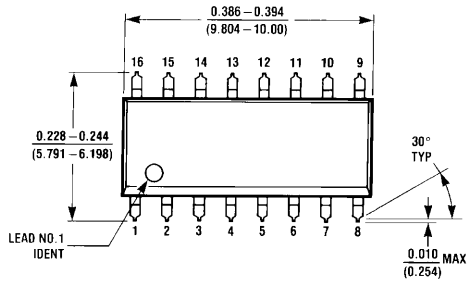
Note 4: AC Parameters are guaranteed by DC correlated testing.

Note 5: Dynamic power dissipation (P_D) is given by: P_D = (C_{PD} + C_L) V_{CC}²f + P_Q; where C_L = load capacitance; f = frequency of operation; for further details, see Application Note AN-90, "Family Characteristics".

Switching Time Waveforms



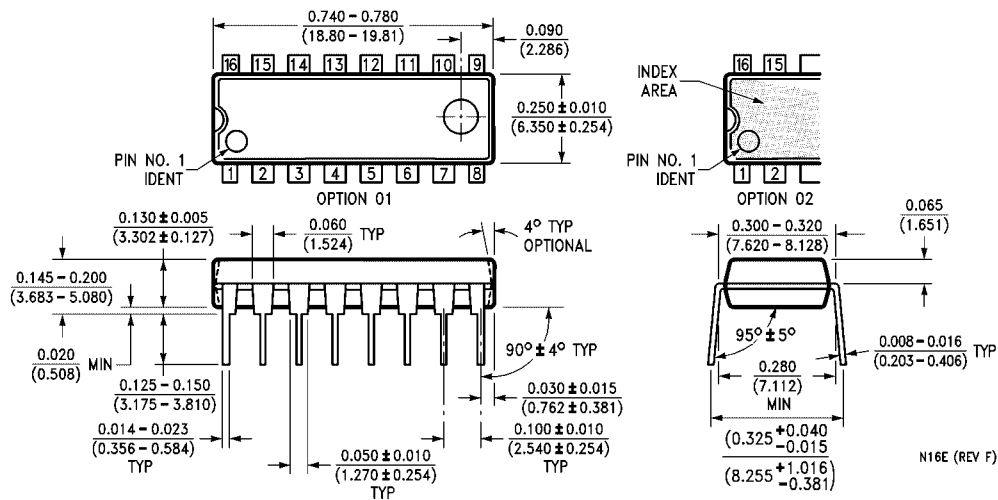
Physical Dimensions inches (millimeters) unless otherwise noted



M16A (REV H)

16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow Package Number M16A

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



**16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300" Wide
Package Number N16E**

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