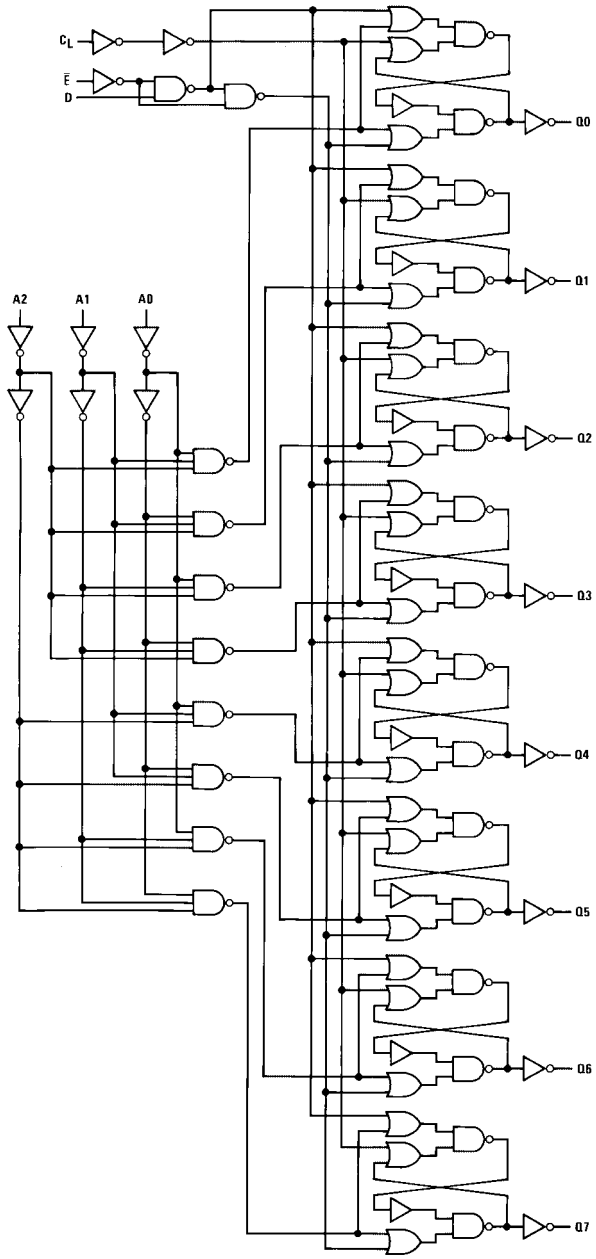
Logic Diagram



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	V_{DD} = 5V		5		0.02	5		150	
	Current	V_{DD} = 10V		10		0.02	10		300	µA
		V_{DD} = 15V		20		0.02	20		600	
V_{OL}	LOW Level	$\|I_O\| \leq 1$ µA								
	Output Voltage	V_{DD} = 5V		0.05		0	0.05		0.05	
		V_{DD} = 10V		0.05		0	0.05		0.05	V
		V_{DD} = 15V		0.05		0	0.05		0.05	
V_{OH}	HIGH Level	$\|I_O\| \leq 1$ µA								
	Output Voltage	V_{DD} = 5V	4.95		4.95	5.0		4.95		
		V_{DD} = 10V	9.95		9.95	10		9.95		V
		V_{DD} = 15V	14.95		14.95	15		14.95		
V_{IL}	LOW Level	V_{DD} = 5V, V_O = 0.5V or 4.5V		1.5		2.25	1.5		1.5	
	Input Voltage	V_{DD} = 10V, V_O = 1V or 9V		3.0		4.5	3.0		3.0	V
		V_{DD} = 15V, V_O = 1.5V or 13.5V		4.0		6.75	4.0		4.0	
V_{IH}	HIGH Level	V_{DD} = 5V, V_O = 0.5V or 4.5V	3.5		3.5	2.75		3.5		
	Input Voltage	V_{DD} = 10V, V_O = 1V or 9V	7.0		7.0	5.5		7.0		V
		V_{DD} = 15V, V_O = 1.5V or 13.5V	11.0		11.0	8.25		11.0		
I_{OL}	LOW Level Output	V_{DD} = 5V, V_O = 0.4V	0.64		0.51	0.88		0.36		
	Current	V_{DD} = 10V, V_O = 0.5V	1.6		1.3	2.25		0.9		mA
	(Note 3)	V_{DD} = 15V, V_O = 1.5V	4.2		3.4	8.8		2.4		
I_{OH}	HIGH Level Output	V_{DD} = 5V, V_O = 4.6V	−0.64		−0.51	−0.88		−0.36		
	Current	V_{DD} = 10V, V_O = 9.5V	−1.6		−1.3	−2.25		−0.9		mA
	(Note 3)	V_{DD} = 15V, V_O = 13.5V	−4.2		−3.4	−8.8		−2.4		
I_{IN}	Input Current	V_{DD} = 15V, V_{IN} = 0V		−0.1		-10^{-5}	−0.1		−1.0	µA
		V_{DD} = 15V, V_{IN} = 15V		0.1		10^{-5}	0.1		1.0	

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

AC Electrical Characteristics (Note 4)

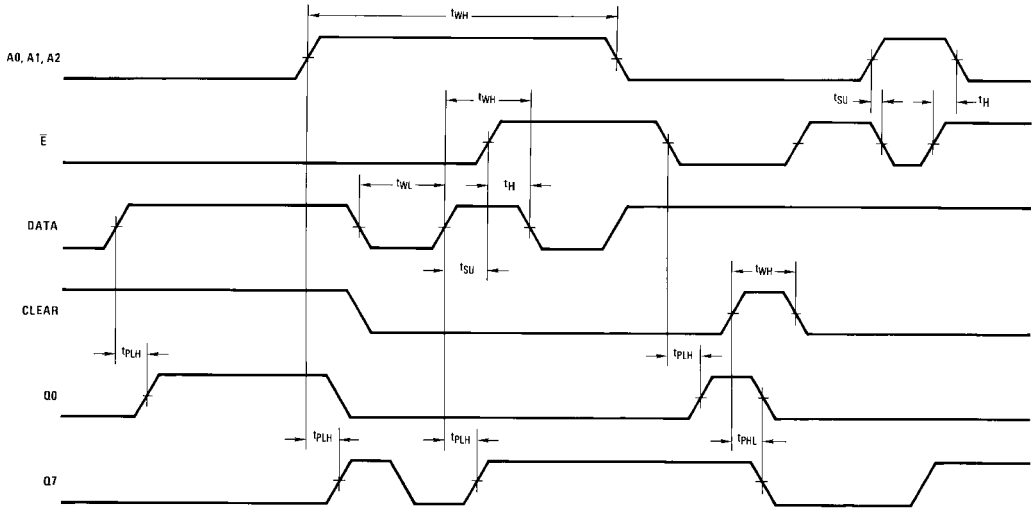
$T_A = 25°C$, $C_L = 50$ pF, $R_L = 200k$, Input $t_r = t_f = 20$ ns, unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$t_{PHL, tPLH}$	Propagation Delay	$V_{DD} = 5V$		200	400	
	Data to Output	$V_{DD} = 10V$		75	150	ns
		$V_{DD} = 15V$		50	100	
t_{PLH}, t_{PHL}	Propagation Delay	$V_{DD} = 5V$		200	400	
	Enable to Output	$V_{DD} = 10V$		80	160	ns
		$V_{DD} = 15V$		60	120	
t_{PHL}	Propagation Delay	$V_{DD} = 5V$		175	350	
	Clear to Output	$V_{DD} = 10V$		80	160	ns
		$V_{DD} = 15V$		65	130	
t_{PLH}, t_{PHL}	Propagation Delay	$V_{DD} = 5V$		225	450	
	Address to Output	$V_{DD} = 10V$		100	200	ns
		$V_{DD} = 15V$		75	150	
t_{THL}, t_{TLH}	Transition Time	$V_{DD} = 5V$		100	200	
	(Any Output)	$V_{DD} = 10V$		50	100	ns
		$V_{DD} = 15V$		40	80	
T_{WH}, T_{WL}	Minimum Data	$V_{DD} = 5V$		100	200	
	Pulse Width	$V_{DD} = 10V$		50	100	ns
		$V_{DD} = 15V$		40	80	
t_{WH}, t_{WL}	Minimum Address	$V_{DD} = 5V$		200	400	
	Pulse Width	$V_{DD} = 10V$		100	200	ns
		$V_{DD} = 15V$		65	125	
t_{WH}	Minimum Clear	$V_{DD} = 5V$		75	150	
	Pulse Width	$V_{DD} = 10V$		40	75	ns
		$V_{DD} = 15V$		25	50	
t_{SU}	Minimum Setup Time	$V_{DD} = 5V$		40	80	
	Data to E	$V_{DD} = 10V$		20	40	ns
		$V_{DD} = 15V$		15	30	
t_H	Minimum Hold Time	$V_{DD} = 5V$		60	120	
	Data to E	$V_{DD} = 10V$		30	60	ns
		$V_{DD} = 15V$		25	50	
t_{SU}	Minimum Setup Time	$V_{DD} = 5V$		−15	50	
	Address to E	$V_{DD} = 10V$		0	30	ns
		$V_{DD} = 15V$		0	20	
t_H	Minimum Hold Time	$V_{DD} = 5V$		−50	15	
	Address to E	$V_{DD} = 10V$		−20	10	ns
		$V_{DD} = 15V$		−15	5	
C_{PD}	Power Dissipation	Per Package		100		pF
	Capacitance	(Note 5)				
C_{IN}	Input Capacitance	Any Input		5.0	7.5	pF

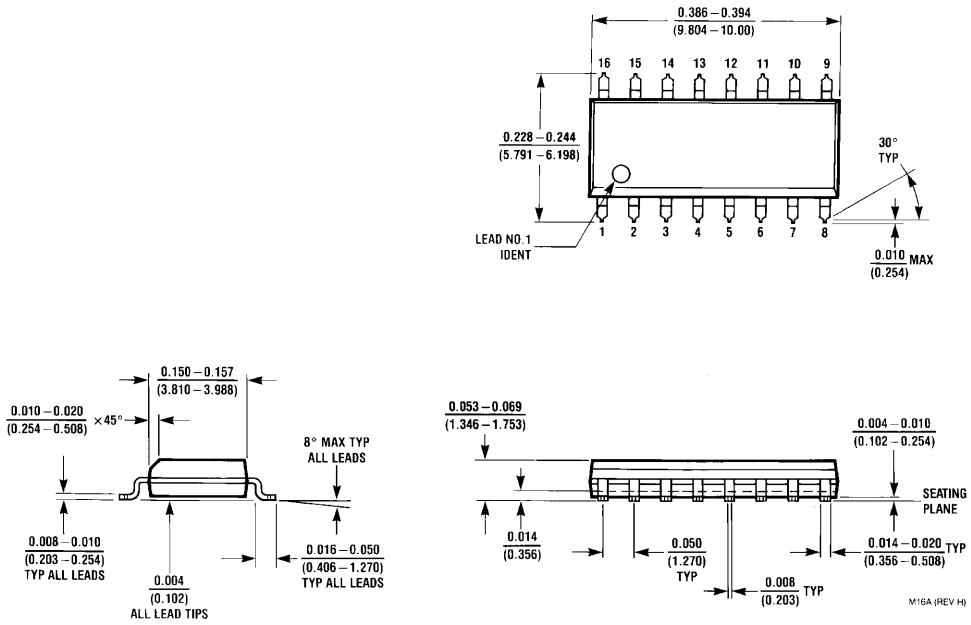
Note 4: AC Parameters are guaranteed by DC correlated testing.

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

Switching Time Waveforms

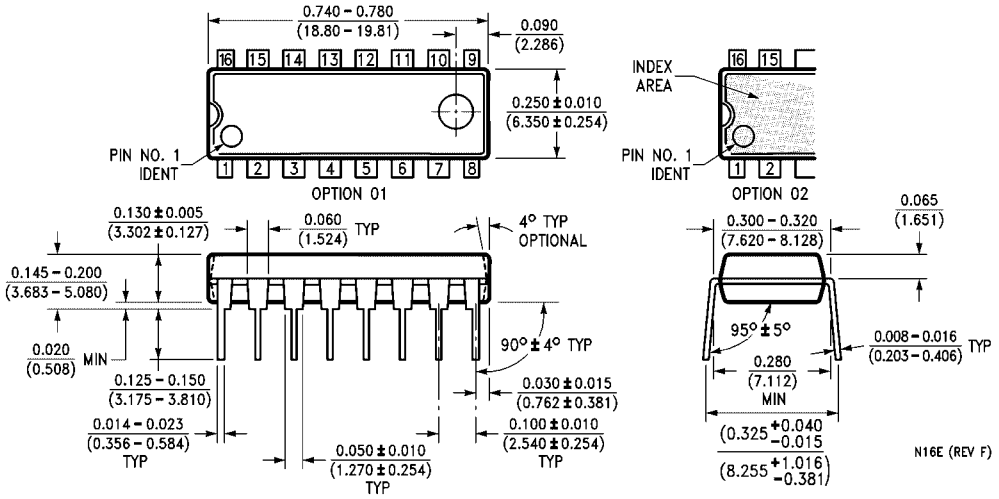


Physical Dimensions inches (millimeters) unless otherwise noted



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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