

Absolute Maximum Ratings (Note 1)

(Note 2)

Supply Voltage (V_{DD})	-0.5V to +18V
Input Voltage (V_{IN})	-0.5V to +0.5V
Storage Temperature Range (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)

Supply Voltage (V_{DD})	+3V to +15V
Operating Temperature Range (T_A)	-40°C to +85°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.

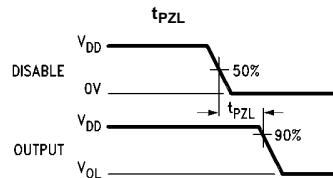
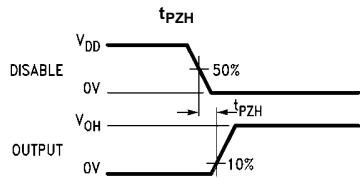
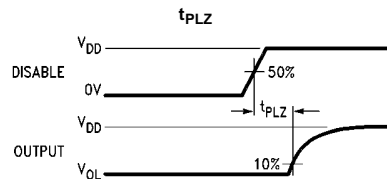
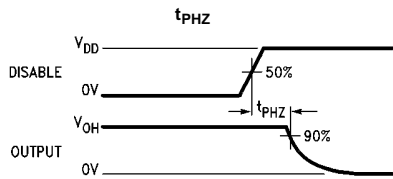
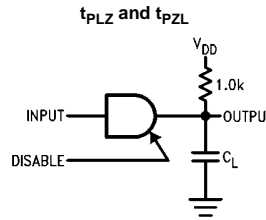
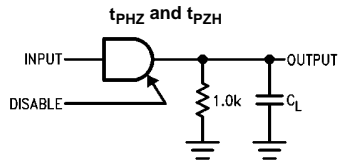
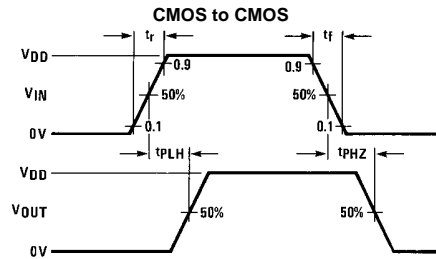
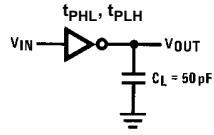
DC Electrical Characteristics (Note 2)

Symbol	Parameter	Conditions	-40°C		+25°C			+85°C		Units
			Min	Max	Min	Typ	Max	Min	Max	
I_{DD}	Quiescent Device Current	$V_{DD} = 5V,$ $V_{IN} = V_{DD}$ or V_{SS}		4			4		30	μA
		$V_{DD} = 10V,$ $V_{IN} = V_{DD}$ or V_{SS}		8			8		60	μA
		$V_{DD} = 15V,$ $V_{IN} = V_{DD}$ or V_{SS}		16			16		120	μA
V_{OL}	LOW Level Output Voltage	$V_{IN} = V_{DD}$ or 0								
		$V_{DD} = 5V$		0.05		0	0.05		0.05	V
		$V_{DD} = 10V$		0.05		0	0.05		0.05	V
V_{OH}	HIGH Level Output Voltage	$V_{IN} = V_{DD}$ or 0								
		$V_{DD} = 5V$	4.95		4.95			4.95		V
		$V_{DD} = 10V$	9.95		9.95			9.95		V
V_{IL}	LOW Level Input Voltage	$V_{DD} = 5V,$ $V_O = 4.5V$ or $0.5V$		1.5		2.25	1.5		1.5	V
		$V_{DD} = 10V,$ $V_O = 9.0V$ or $1.0V$		3.0		4.50	3.0		3.0	V
		$V_{DD} = 15V,$ $V_O = 13.5V$ or $1.5V$		4.0		6.75	4.0		4.0	V
V_{IH}	HIGH Level Input Voltage	$V_{DD} = 5V,$ $V_O = 0.5V$ or $4.5V$	3.5		3.5	2.75		3.5		V
		$V_{DD} = 10V,$ $V_O = 1.0V$ or $9.0V$	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		V
I_{OL}	LOW Level Output Current	$V_{DD} = 4.5V, V_{OL} = 0.4V$	2.30		1.95	2.65		1.60		mA
		$V_{DD} = 5.0V, V_{OL} = 0.4V$	2.5		2.10	2.75		1.75		mA
		$V_{DD} = 10V, V_{OL} = 0.5V$	6.5		5.45	7.0		4.45		mA
		$V_{DD} = 15V, V_{OL} = 1.5V$	16.50		13.80	25.00		11.30		mA
I_{OH}	HIGH Level Output Current	$V_{DD} = 5V, V_{OH} = 4.6V$	-1.04		-0.88	-1.76		-0.7		mA
		$V_{DD} = 10V, V_{OH} = 9.5V$	-2.60		-2.2	-4.50		-1.8		mA
		$V_{DD} = 15V, V_{OH} = 13.5V$	-7.2		-6.0	-17.6		-4.8		mA
I_{TL}	3-STATE Leakage Current	$V_{DD} = 15V$		± 0.3		$\pm 10^{-4}$		± 0.3		μA
I_{IN}	Input Current	$V_{DD} = 15V$		± 0.3		$\pm 10^{-5}$		± 0.3		μA

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

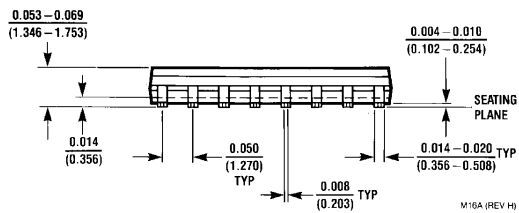
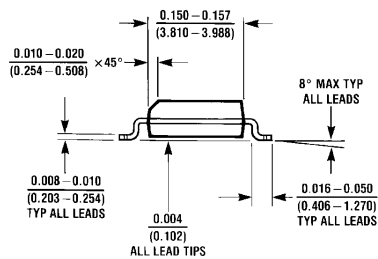
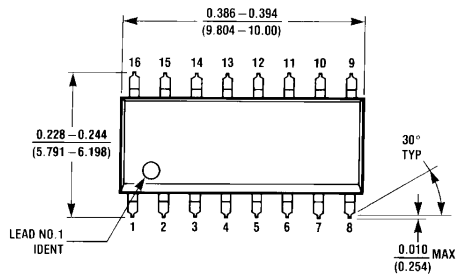
AC Electrical Characteristics (Note 4)						
T _A = 25°C, C _L = 50 pF, R _L = 200 kΩ, Input t _r = t _f = 20 ns, unless otherwise specified						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
t _{PHL} , t _{PLH}	Propagation Delay Time	V _{DD} = 5V		75	100	ns
		V _{DD} = 10V		35	40	ns
		V _{DD} = 15V		25	30	ns
t _{PLZ} , t _{PHZ}	Propagation Delay Time, Logical Level to HIGH Impedance State	V _{DD} = 5V		80	125	ns
		V _{DD} = 10V		40	90	ns
		V _{DD} = 15V		35	70	ns
t _{PZL} , t _{PZH}	Propagation Delay Time, High Impedance State to Logical Level	V _{DD} = 5V		95	175	ns
		V _{DD} = 10V		40	80	ns
		V _{DD} = 15V		35	70	ns
t _{TLH}	Output Rise Time	V _{DD} = 5V		45	80	ns
		V _{DD} = 10V		23	40	ns
		V _{DD} = 15V		18	35	ns
t _{THL}	Output Fall Time	V _{DD} = 5V		45	80	ns
		V _{DD} = 10V		23	40	ns
		V _{DD} = 15V		18	35	ns
Note 4: AC Parameters are guaranteed by DC correlated testing.						

AC Test Circuits and Switching Time Waveforms

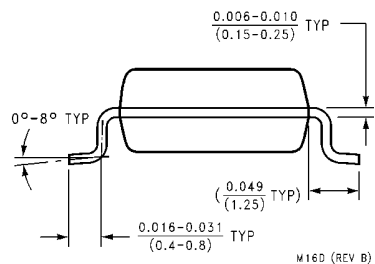
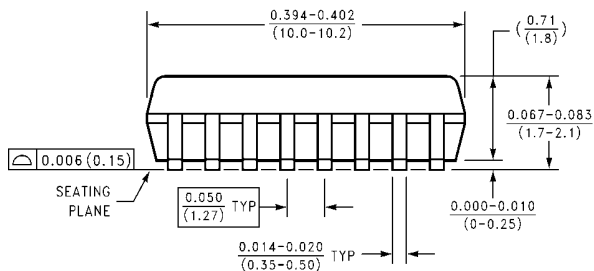
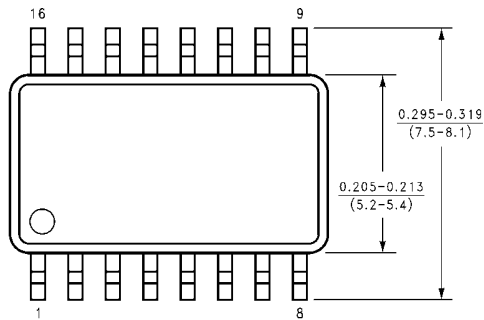


Note: Delays measured with input $t_r, t_f \leq 20$ ns.

Physical Dimensions inches (millimeters) unless otherwise noted

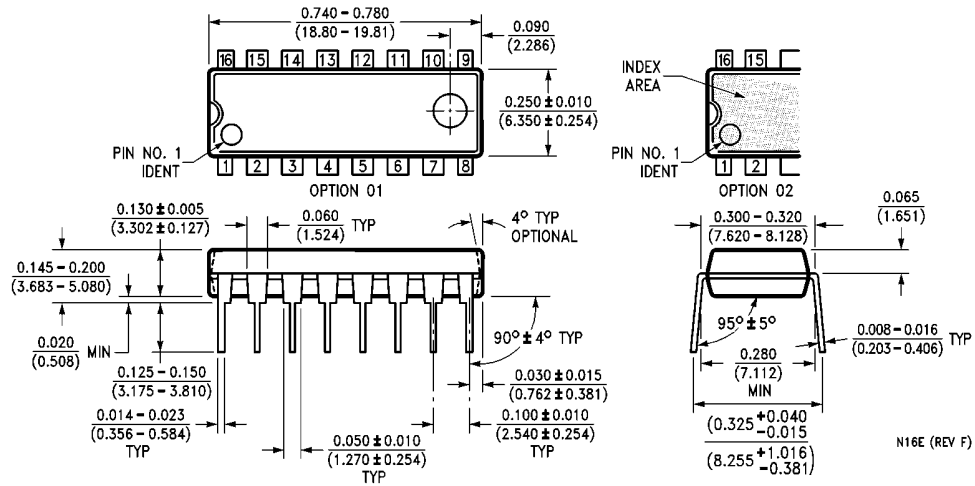


**16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow
Package Number M16A**



**16-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
Package Number M16D**

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**

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

www.fairchildsemi.com