

ense



# 74AC139, 74ACT139

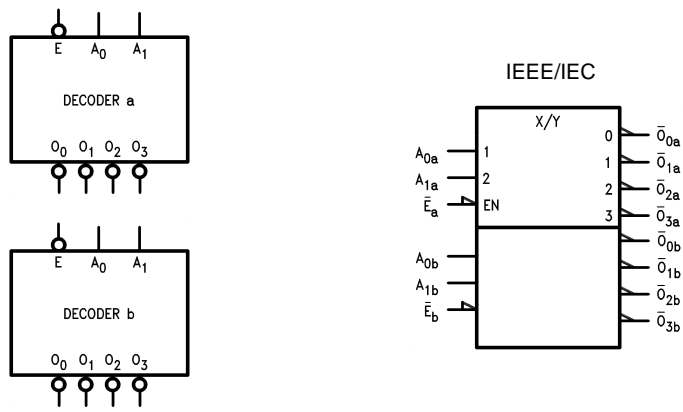
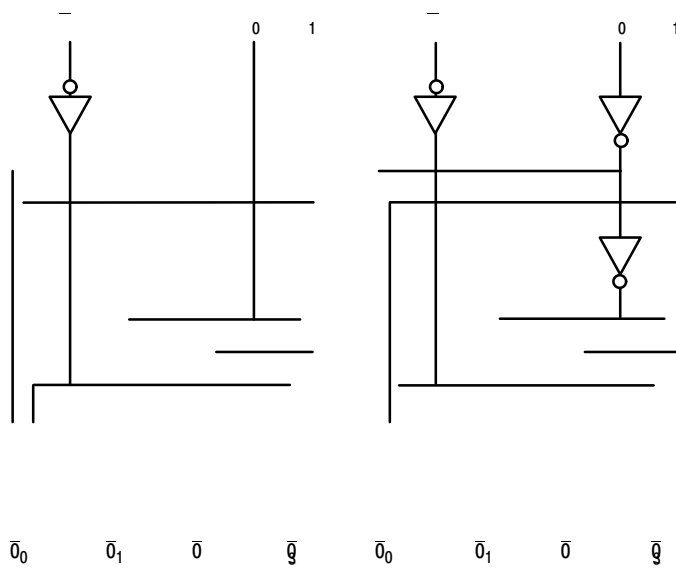


Figure 1. Logic Symbols



NOTE: This diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

Figure 2. Logic Diagram

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## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Rating	Unit
$V_{CC}$	Supply Voltage	-0.5 to +6.5	V
$I_{IK}$	DC Input Diode Current $V_I = -0.5\text{ V}$ $V_I = V_{CC} + 0.5\text{ V}$	-20 +20	mA
$V_I$			

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## DC ELECTRICAL CHARACTERISTICS FOR AC

Symbol	Parameter	V <sub>CC</sub> (V)	Conditions	T <sub>A</sub> = +25°C		T <sub>A</sub> = -40°C to +85°C		Unit	
				Typ	Guaranteed Limits				
V <sub>IH</sub>	Minimum HIGH Level Input Voltage	3.0	V <sub>OUT</sub> = 0.1 V or V <sub>CC</sub> - 0.1 V	1.5	2.1	2.1		V	
		4.5		2.25	3.15	3.15			
		5.5		2.75	3.85	3.85			
V <sub>IL</sub>	Maximum LOW Level Input Voltage	3.0	V <sub>OUT</sub> = 0.1 V or V <sub>CC</sub> - 0.1 V	1.5	0.9	0.9		V	
		4.5		2.25	1.35	1.35			
		5.5		2.75	1.65	1.65			
V <sub>OH</sub>	Minimum HIGH Level Output Voltage	3.0	I <sub>OUT</sub> = -50 μA	2.99	2.9	2.9		V	
		4.5		4.49	4.4	4.4			
		5.5		5.49	5.4	5.4			
		3.0	V <sub>IN</sub> V <sub>IL</sub> or V <sub>IH</sub> . I <sub>OH</sub> = -12 mA		2.56	2.46			
		4.5		V <sub>IN</sub> V <sub>IL</sub> or V <sub>IH</sub> . I <sub>OH</sub> = -24 mA		3.86	3.76		
		5.5		V <sub>IN</sub> V <sub>IL</sub> or V <sub>IH</sub> . I <sub>OH</sub> = -24 mA (Note 1)		4.86	4.76		
V <sub>OL</sub>	Maximum LOW Level Output Voltage	3.0	I <sub>OUT</sub> = 50 μA	0.002	0.1	0.1		V	
		4.5		0.001	0.1	0.1			
		5.5		0.001	0.1	0.1			
		3.0	V <sub>IN</sub> V <sub>IL</sub> or V <sub>IH</sub> . I <sub>OL</sub> = 12 mA		0.36	0.44			
		4.5		V <sub>IN</sub> V <sub>IL</sub>					

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## DC ELECTRICAL CHARACTERISTICS FOR ACT

Symbol	Parameter	V <sub>CC</sub> (V)	Conditions	T <sub>A</sub> = +25°C		T <sub>A</sub> = -40°C to +85°C		Unit
				Typ	Guaranteed Limits			
V <sub>IH</sub>	Minimum HIGH Level Input Voltage	4.5	V <sub>OUT</sub> 0.1 V or V <sub>CC</sub> 0.1 V	1.5	2.0	2.0		V
		5.5		1.5	2.0	2.0		
V <sub>IL</sub>	Maximum LOW Level Input Voltage	4.5	V <sub>OUT</sub> 0.1 V or V <sub>CC</sub> 0.1 V	1.5	0.8	0.8		V
		5.5		1.5	0.8	0.8		
V <sub>OH</sub>	Minimum HIGH Level Output Voltage	4.5	I <sub>OUT</sub> 50 μA	4.49	4.4	4.4		V
		5.5		5.49	5.4	5.4		
		4.5	V <sub>IN</sub> V <sub>IL</sub> or V <sub>IH</sub> . I <sub>OH</sub> 24 mA		3.86	3.76		
		5.5		V <sub>IN</sub> V <sub>IL</sub> or V <sub>IH</sub> . I <sub>OH</sub> 24 mA (Note 4)		4.86	4.76	

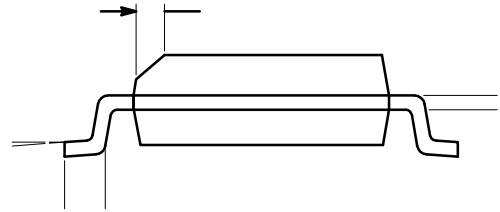
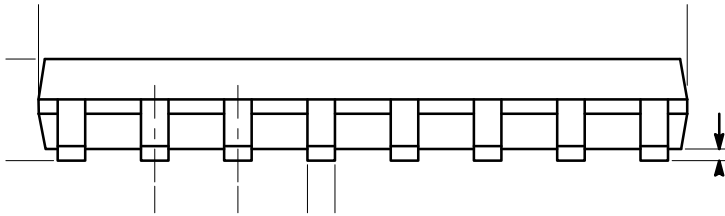
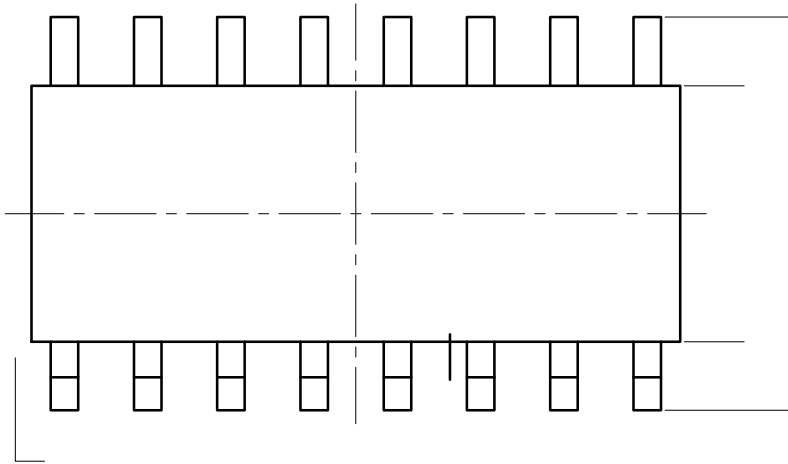
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## AC ELECTRICAL CHARACTERISTICS FOR AC

Symbol	Parameter	V <sub>CC</sub> (V) (Note 6)	T <sub>A</sub> = +25°C, C <sub>L</sub> = 50 pF			T <sub>A</sub> = -40°C to +85°C, C <sub>L</sub> = 50 pF		Unit
			Min	Typ	Max	Min	Max	
t <sub>PLH</sub>	Propagation Delay, A <sub>n</sub> to O							

SOIC-16, 150 mils  
CASE 751BG  
ISSUE 0

DATE 19 DEC 2008



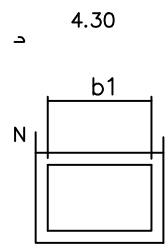
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TSSOP 16  
CASE 948AH  
ISSUE O

DATE 19 SEP 2008

SEE DETAIL "A" 0.19  
0.09



THIS TABLE FOR

S Y M B O L	MIN.		
A			
A <sub>1</sub>	0.05		
A <sub>2</sub>		J	0.95
b			0.30
b <sub>1</sub>			0.25
c			0.20
c <sub>1</sub>			0.16
D			
E <sub>1</sub>			4.50
C		0.65 BSC	
E		6.40 BSC	
L		0.60	0.70

SEE VARIATIONS  
| ——— | 8°



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