

ense



# 74AC139, 74ACT139

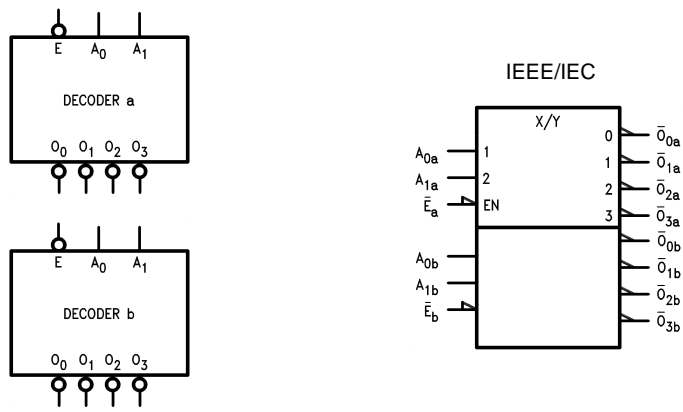
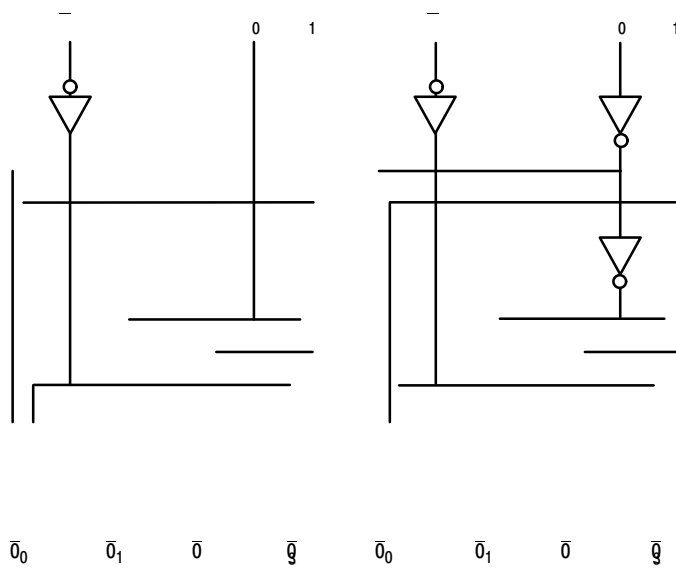


Figure 1. Logic Symbols



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
$V_I$			

# 74AC139, 74ACT139

## 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	

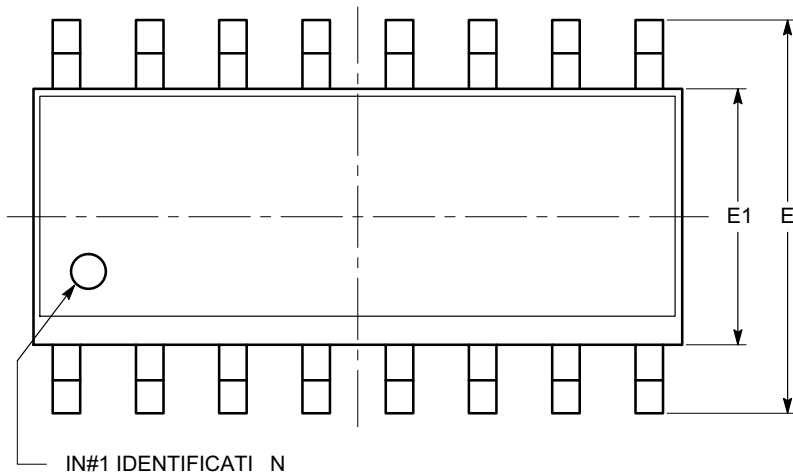
# 74AC139, 74ACT139

## AC ELECTRICAL CHARACTERISTICS FOR AC

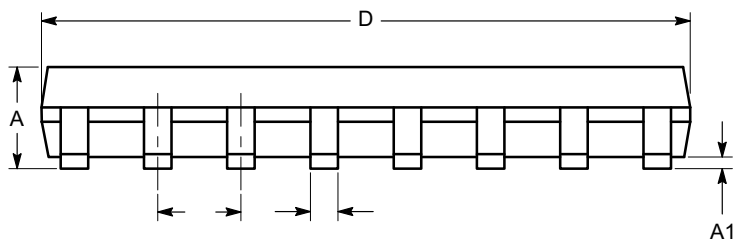
Symbol	Parameter	V <sub>CC</sub> (V) (Note 6)	T <sub>A</sub> = +25°C, C <sub>L</sub> = 50 pF			T <sub>A</sub> = -40°C to +85°C, C <sub>L</sub> = 50 pF		Unit
			Min	Typ	Max	Min	Max	
t <sub>PLH</sub>	Propagation Delay, A <sub>n</sub> to O							

**SOIC-16, 150 mils**  
**CASE 751BG-01**  
**ISSUE O**

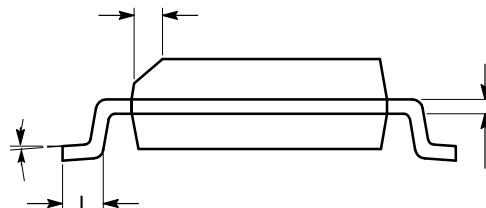
DATE 19 DEC 2008



**TOP VIEW**



**SIDE VIEW**



**END VIEW**

**Notes:**

- (1) All dimensions are in millimeters. All dimensions are in millimeters.
- (2) Compliance with JEDEC MS-012.

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TSSOP 16

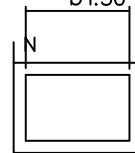
SEE DETAIL "A"

0.19

0.09

4.30

b1.50



COMMON DIMENSIONS

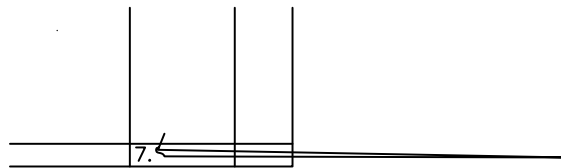
NOM.	MAX.
—	1.10
—	0.15

A<sub>2</sub>  
b  
b1  
c  
c1  
D  
E1  
C  
E  
L

SEE VA

0.65 BSC	
6.40 BSC	
0.60	0.70

SEE VARIATIONS  
| — | 8°



UNITS IN MILLIMETERS

MOLD FLASH OR PROTR



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