

DC Characteristics for 'AC Family Devices (Continued)

Symbol	Parameter	V _{CC} (V)	74AC		54AC		74AC		Units	Conditions
			T _A = +25°C		T _A = -55°C to +125°C		T _A = -40°C to +85°C			
			Typ	Guaranteed Limits						
I _{OZ}	Maximum TRI-STATE Leakage Current	5.5		±0.5	±10.0	±5.0			μA	V _I (OE) = V _{IL} , V _{IH} V _I = V _{CC} , GND V _O = V _{CC} , GND
I _{OLD}	†Minimum Dynamic Output Current	5.5			50	75			mA	V _{OLD} = 1.65V Max
I _{OHD}		5.5			-50	-75			mA	V _{OHD} = 3.85V Min
I _{CC}	Maximum Quiescent Supply Current	5.5		8.0	160.0	80.0			μA	V _{IN} = V _{CC} or GND

*All outputs loaded; thresholds on input associated with output under test.

†Maximum test duration 2.0 ms, one output loaded at a time.

Note: I_{IN} and I_{CC} @ 3.0V are guaranteed to be less than or equal to the respective limit @ 5.5V V_{CC}.
I_{CC} for 54AC @ 25°C is identical to 74AC @ 25°C.

DC Characteristics for 'ACT Family Devices

Symbol	Parameter	V _{CC} (V)	74ACT		54ACT		74ACT		Units	Conditions
			T _A = +25°C		T _A = -55°C to +125°C		T _A = -40°C to +85°C			
			Typ	Guaranteed Limits						
V _{IH}	Minimum High Level Input Voltage	4.5	1.5	2.0	2.0	2.0			V	V _{OUT} = 0.1V or V _{CC} - 0.1V
		5.5	1.5	2.0	2.0	2.0				
V _{IL}	Maximum Low Level Input Voltage	4.5	1.5	0.8	0.8	0.8			V	V _{OUT} = 0.1V or V _{CC} - 0.1V
		5.5	1.5	0.8	0.8	0.8				
V _{OH}	Minimum High Level Output Voltage	4.5	4.49	4.4	4.4	4.4			V	I _{OHT} = -50 μA
		5.5	5.49	5.4	5.4	5.4				
		4.5		3.86	3.70	3.76			V	*V _{IN} = V _{IL} or V _{IH} -24 mA I _{OHT} -24 mA
		5.5		4.86	4.70	4.76				
V _{OL}	Maximum Low Level Output Voltage	4.5	0.001	0.1	0.1	0.1			V	I _{OHT} = 50 μA
		5.5	0.001	0.1	0.1	0.1				
		4.5		0.36	0.50	0.44			V	*V _{IN} = V _{IL} or V _{IH} 24 mA I _{OL} 24 mA
		5.5		0.36	0.50	0.44				
I _{IN}	Maximum Input Leakage Current	5.5		±0.1	±1.0	±1.0			μA	V _I = V _{CC} , GND
I _{OZ}	Maximum TRI-STATE Leakage Current	5.5		±0.5	±10.0	±5.0			μA	V _I = V _{IL} , V _{IH} V _O = V _{CC} , GND
I _{CC} T	Maximum I _{CC} /Input	5.5	0.6		1.6	1.5			mA	V _I = V _{CC} - 2.1V
I _{OLD}	†Minimum Dynamic Output Current	5.5			50	75			mA	V _{OLD} = 1.65V Max
I _{OHD}		5.5			-50	-75			mA	V _{OHD} = 3.85V Min
I _{CC}	Maximum Quiescent Supply Current	5.5		8.0	160.0	80.0			μA	V _{IN} = V _{CC} or GND

*All outputs loaded; thresholds on input associated with output under test.

†Maximum test duration 2.0 ms, one output loaded at a time.

Note: I_{CC} for 54ACT @ 25°C is identical to 74ACT @ 25°C.

AC Electrical Characteristics: See Section 2 for waveforms

Symbol	Parameter	V _{CC} * (V)	74AC			54AC		74AC		Units	Fig. No.
			T _A = +25°C C _L = 50 pF			T _A = -55°C to +125°C C _L = 50 pF		T _A = -40°C to +85°C C _L = 50 pF			
			Min	Typ	Max	Min	Max	Min	Max		
t _{PLH}	Propagation Delay Data to Output	3.3 5.0	1.5 1.5	6.0 5.0	9.0 7.0	1.0 1.0	12.0 9.5	1.5 1.0	10.0 7.5	ns	2-3, 4
t _{PHL}	Propagation Delay Data to Output	3.3 5.0	1.5 1.5	6.0 4.5	9.0 7.0	1.0 1.0	11.5 9.0	1.0 1.0	10.5 7.5	ns	2-3, 4
t _{PZH}	Output Enable Time	3.3 5.0	1.5 1.5	6.5 5.5	12.5 9.0	1.0 1.0	13.0 10.0	1.0 1.0	13.0 9.5	ns	2-5
t _{PZL}	Output Enable Time	3.3 5.0	1.5 1.5	7.0 5.5	12.0 9.0	1.0 1.0	13.0 10.0	1.5 1.0	13.0 9.5	ns	2-6
t _{PHZ}	Output Disable Time	3.3 5.0	2.0 1.5	8.0 6.5	12.0 10.0	1.0 1.0	13.0 11.5	2.0 1.0	12.5 10.5	ns	2-5
t _{PLZ}	Output Disable Time	3.3 5.0	1.5 1.5	7.0 6.0	12.5 10.0	1.0 1.0	13.0 11.5	1.0 1.0	13.5 10.5	ns	2-6

*Voltage Range 3.3 is 3.3V ± 3.3V
Voltage Range 5.0 is 5.0V ± 0.5V

AC Electrical Characteristics: See Section 2 for waveforms

Symbol	Parameter	V _{CC} * (V)	74ACT			54ACT		74ACT		Units	Fig. No.
			T _A = +25°C C _L = 50 pF			T _A = -55°C to +125°C C _L = 50 pF		T _A = -40°C to +85°C C _L = 50 pF			
			Min	Typ	Max	Min	Max	Min	Max		
t _{PLH}	Propagation Delay Data to Output	5.0	1.5	6.5	9.0	1.0	10.0	1.5	10.0	ns	2-3, 4
t _{PHL}	Propagation Delay Data to Output	5.0	1.5	7.0	9.0	1.0	10.0	1.5	10.0	ns	2-3, 4
t _{PZH}	Output Enable Time	5.0	1.5	6.0	9.0	1.0	11.5	1.0	10.0	ns	2-5
t _{PZL}	Output Enable Time	5.0	1.5	7.0	10.0	1.0	12.5	1.5	11.0	ns	2-6
t _{PHZ}	Output Disable Time	5.0	1.5	8.0	10.5	1.0	12.5	1.5	11.5	ns	2-5
t _{PLZ}	Output Disable Time	5.0	2.0	7.0	10.5	1.0	12.5	1.5	11.5	ns	2-6

*Voltage Range 5.0 is 5.0V ± 0.5V

Capacitance

Symbol	Parameter	Typ	Units	Conditions
C _{IN}	Input Capacitance	4.5	pF	V _{CC} = 5.0V
C _{PD}	Power Dissipation Capacitance	45.0	pF	V _{CC} = 5.0V