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74AC05

Absolute Maximum Ratings(Note 1)

Supply Voltage (V _{CC}) DC Input Diode Current (I _{IK})	-0.5V to +7.0V
$V_{I} = -0.5V$	–20 mA
$V_I = V_{CC} + 0.5V$	+20 mA
DC Input Voltage (VI)	–0.5V to V _{CC} + 0.5V
DC Output Diode Current (I _{OK})	
$V_{O} = -0.5V$	–20 mA
$V_{O} = V_{CC} + 0.5V$	+20 mA
DC Output Voltage (V _O)	$-0.5 V$ to $V_{CC} + 0.5 V$
DC Output Source	
or Sink Current (I _O)	\pm 50 mA
DC V _{CC} or Ground Current	
per Output Pin (I _{CC} or I _{GND})	\pm 50 mA
Storage Temperature (T _{STG})	$-65^{\circ}C$ to $+150^{\circ}C$

Recommended Operating Conditions

Supply Voltage (V _{CC})	2.0V to 6.0V
Input Voltage (V _I)	0V to V_{CC}
Output Voltage (V _O)	0V to V _{CC}
Operating Temperature (T _A)	$-40^{\circ}C$ to $+85^{\circ}C$
Minimum Input Edge Rate ($\Delta V/\Delta t$)	
V_{IN} from 30% to 70% of V_{CC}	
V _{CC} @ 3.3V, 4.5V, 5.5V	125 mV/ns

Note 1: Absolute maximum ratings are those values beyond which damage to the device may occur. The databook specifications should be met, without exception, to ensure that the system design is reliable over its power supply, temperature, and output/input loading variables. Fairchild does not recommend operation of FACT™ circuits outside databook specifications.

DC Electrical Characteristics

Symbol	Parameter	V _{cc}	T _A = +25°C		$T_A = -40^{\circ}C \text{ to } +85^{\circ}C$	Units	Conditions
Symbol		(V)	Тур	Gu	Guaranteed Limits		Conditions
VIH	Minimum HIGH Level	3.0	1.5	2.1	2.1		$V_{OUT} = 0.1V$
	Input Voltage	4.5	2.25	3.15	3.15	V	or $V_{CC} - 0.1V$
		5.5	2.75	3.85	3.85		
V _{IL}	Maximum LOW Level	3.0	1.5	0.9	0.9		$V_{OUT} = 0.1V$
	Input Voltage	4.5	2.25	1.35	1.35	V	or $V_{CC} - 0.1V$
		5.5	2.75	1.65	1.65		
V _{OL}	Maximum LOW Level	3.0	0.002	0.1	0.1		
	Output Voltage	4.5	0.001	0.1	0.1	V	$I_{OUT} = 50 \ \mu A$
		5.5	0.001	0.1	0.1		
							$V_{IN} = V_{IL} \text{ or } V_{IH}$
		3.0		0.32	0.44		I _{OL} = 12 mA
		4.5		0.36	0.44	V	I _{OL} = 24 mA
		5.5		0.36	0.44		I _{OL} = 24 mA (Note 2)
I _{IN} (Note 4)	Maximum Input Leakage Current	5.5		±0.1	±1.0	μA	$V_I = V_{CC}, GND$
I _{OHD}	Off-State Current	5.5		+0.5	+10.0	μA	$V_{IN} = V_{CC}$
I _{OLD}	Minimum Dynamic		50	75	mA		
	Output Current (Note 3)	5.5		- 50	15	mA	$V_{OLD} = 1.65V Max$
I _{CC} (Note 4)	Maximum Quiescent Supply Current	5.5		4.0	20.0	μA	$V_{IN} = V_{CC}$ or GND

Note 2: All outputs loaded; thresholds on input associated with output under test.

Note 3: Maximum test duration 2.0 ms, one output loaded at a time.

Note 4: I_{IN} and I_{CC} @ 3.0V are guaranteed to be less than or equal to the respective limit @ 5.5V V_{CC}.

AC Electrical Characteristics

Symbol	Parameter	V _{cc} (V)	T _A = +25°C C _L = 50 pF		T _A = -40°	C to +85°C	Units
		(Note 5)	Min	Max	Min	Min	
t _{PLZ}	Propagation Delay	3.3	2.0	14.5	2.0	14.5	20
	(Note 6)	5.0	2.0	14.0	2.0	14.0	ns
t _{PZL}	Propagation Delay	3.3	2.0	6.5	2.0	6.5	ns
		5.0	2.0	5.0	2.0	5.0	115

Note 5: Voltage Range 3.3 is $3.3V\pm0.3V$

Voltage Range 5.0 is 5.0V $\pm\,0.5V$ Note 6: AC Load is $V_{CC} \ge 2$, $R_L = 1 \ k\Omega$

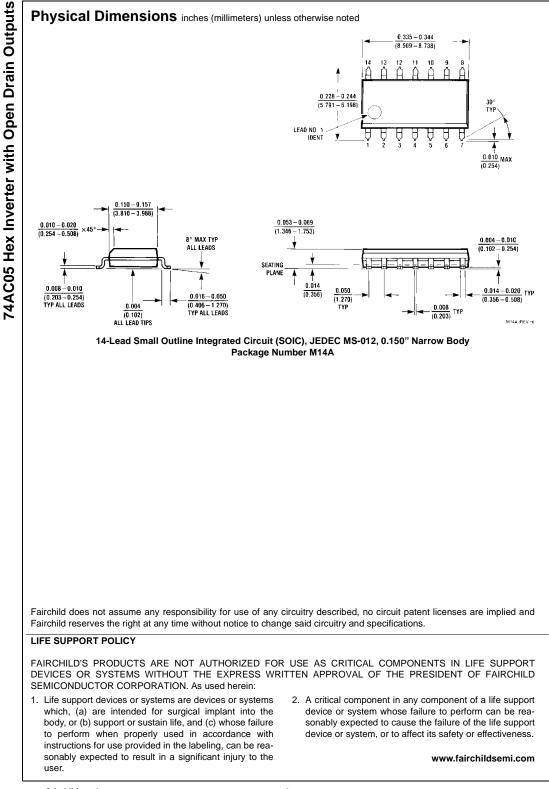
C_L = 50 pF

Capacitance

Symbol	Parameter	Тур	Units	Conditions
C _{IN}	Input Capacitance	4.5	pF	$V_{CC} = 5.0V$
C _{PD}	Power Dissipation Capacitance	30.0	pF	$V_{CC} = 5.0V$

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