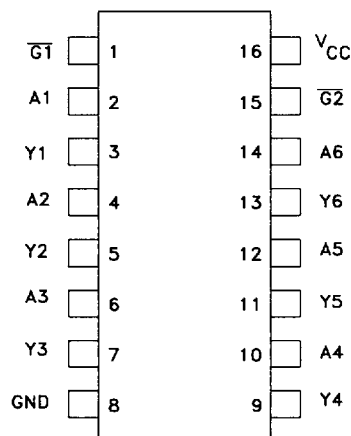
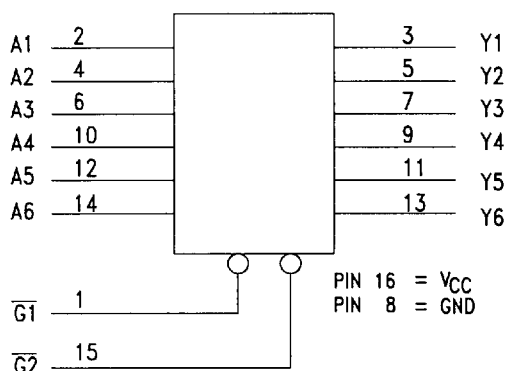
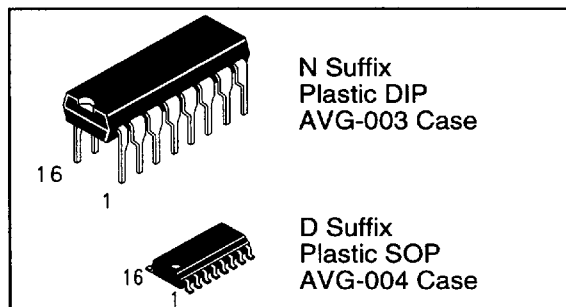


Hex Tri-State Buffer

DV74HC365, DV74HCT365 DV74HC367, DV74HCT367

These devices are High Speed Non-Inverting Buffers. Both devices have active-low enables. All six gates are controlled in the HC365, 2-Bits and 4-Bits are separately controlled in the HC367.

- **Output Drive Capability:** 15 LSTTL Loads
- **Outputs Directly Interface to CMOS, NMOS, and TTL**
- **Operating Voltage Range:** 2 to 6 V
- **Low Input Current:** 1 μ A
- **DC, AC parameters guaranteed from -55°C to 125°C**



**DV74HC365
TRUTH TABLE**

Inputs			Outputs
$\overline{G1}$	$\overline{G2}$	A_n	Y_n
H	X	X	Z
L	H	X	Z
H	L	X	Z
L	L	D_n	D_n

H = High Logic Level
L = Low Logic Level
X = Don't Care
Z = High Impedance

**DV74HC367
TRUTH TABLE**

Inputs				Outputs	
$\overline{G1}$	$\overline{G2}$	A_{1-4}	$A_{5,6}$	Y_{1-4}	$Y_{5,6}$
H	H	X	X	Z	Z
L	H	D_{1-4}	X	D_{1-4}	Z
H	L	X	$D_{5,6}$	Z	$D_{5,6}$
L	L	D_{1-4}	$D_{5,6}$	D_{1-4}	$D_{5,6}$

H = High Logic Level
L = Low Logic Level
X = Don't Care
Z = High Impedance
HC 367: $\overline{G1}$ Controls the outputs Y1-Y4
 $\overline{G2}$ Controls the outputs Y5, Y6

ABSOLUTE MAXIMUM RATINGS

Maximum ratings are those values beyond which damage to the device may occur.

Symbol	Parameter	Value	Unit
V _{CC}	DC Supply Voltage (Referenced to GND)	−0.5 to +7.0	V
V _{IN}	DC Input Voltage (Referenced to GND)	−1.5 to V _{CC} +1.5	V
V _{OUT}	DC Output Voltage (Referenced to GND)	−0.5 to V _{CC} +0.5	V
I _{IN}	DC Input Current, per Pin	± 20	mA
I _{OUT}	DC Output Current, per Pin	± 25	mA
I _{CC}	DC Supply Current, V _{CC} and GND Pins	± 75	mA
P _D	Power Dissipation in Still Air, Plastic DIP SOP Package	750 500	mW
T _{STG}	Storage Temperature Range	−65 to +150	°C
TL	Lead Temperature, 1mm from Case for 10 Seconds	260	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V _{CC}	DC Supply Voltage (Referenced to GND)	2.0	6.0	V
V _{IN} , V _{OUT}	DC Input Voltage, Output Voltage (Referenced to GND)	0	V _{CC}	V
T _A	Ambient Temperature	−55	+125	°C
t _r , t _f	Input Rise and Fall Time: HC: V _{CC} =2.0V HCT: V _{CC} =5.5V / HC: V _{CC} =4.5V HC: V _{CC} =6.0V	0 0 0	1000 500 400	ns

HC-365, 367**DC ELECTRICAL CHARACTERISTICS**

Symbol	Parameter	Conditions	V _{CC} V	Guaranteed Limits			Unit
				25°C to −55°C	≤85°C	≤125°C	
V _{IH}	Minimum High-Level Input Voltage	V _{OUT} = 0.1 V, I _{OUT} ≤ 20 μA	2.0 4.5 6.0	1.5 3.15 4.2	1.5 3.15 4.2	1.5 3.15 4.2	V
V _{IL}	Maximum Low-Level Input Voltage	V _{OUT} = V _{CC} − 0.1 V I _{OUT} ≤ 20 μA	2.0 4.5 6.0	0.5 1.35 1.8	0.5 1.35 1.8	0.5 1.35 1.8	V
V _{OH}	Minimum High-Level Output Voltage	V _{IN} = V _{IH} or V _{IL} I _{OUT} ≤ 20 μA	2.0 4.5 6.0	1.9 4.4 5.9	1.9 4.4 5.9	1.9 4.4 5.9	V
		V _{IN} = V _{IH} or V _{IL} , I _{OUT} ≤ 6.0 mA I _{OUT} ≤ 7.8 mA	4.5 6.0	3.98 5.48	3.84 5.34	3.7 5.2	
V _{OL}	Maximum Low Level Output Voltage	V _{IN} = V _{IH} or V _{IL} I _{OUT} ≤ 20 μA	2.0 4.5 6.0	0.1 0.1 0.1	0.1 0.1 0.1	0.1 0.1 0.1	V
		V _{IN} = V _{IH} or V _{IL} , I _{OUT} ≤ 6.0 mA I _{OUT} ≤ 7.8 mA	4.5 6.0	0.26 0.26	0.33 0.33	0.40 0.40	V
I _{IN}	Maximum Input Leakage Current	V _{IN} = V _{CC} or GND	6.0	± 0.1	± 1.0	± 1.0	μA
I _{OZ}	Maximum Three-State Leakage Current	Output in High-Impedance State V _{IN} = V _{IL} or V _{IH} V _{OUT} = V _{CC} or GND	6.0	± 0.5	± 5.0	± 10.0	μA
I _{CC}	Maximum Quiescent Supply Current	V _{IN} = V _{CC} or GND, I _{OUT} = 0 μA	6.0	8.0	80	160	μA

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AC ELECTRICAL CHARACTERISTICS over full operating conditions($C_L=50\text{pF}$, Input $t_r=t_f=6\text{ns}$)

Symbol	Parameter	V _{CC} V	Guaranteed Limit			Unit
			25°C to -55°C	≤85°C	≤125°C	
t _{PLH} , t _{PHL}	Maximum Propagation Delay Time, Input to Output	2.0 4.5 6.0	120 24 20	150 30 26	180 36 31	ns
t _{PLZ} , t _{PHZ}	HC367 Maximum Propagation Delay Time, Output Disable to Output	2.0 4.5 6.0	175 45 36	220 55 45	260 65 55	ns
t _{PLZ} ,t _{PHZ} t _{PZL} ,t _{PZH}	HC365 Maximum Propagation Delay Time, Output Disable to Output	2.0 4.5 6.0	220 44 37	275 55 47	330 66 56	ns
t _{PZL} , t _{PZH}	HC367 Maximum Propagation Delay Time, Output Enable to Output	2.0 4.5 6.0	190 38 32	240 48 41	285 57 48	ns
t _{TLH} , t _{THL}	Maximum Output Transition Time Any Output	2.0 4.5 6.0	60 12 10	75 15 13	90 18 15	ns
C _{IN}	Maximum Input Capacitance	—	10	10	10	pF
C _{OUT}	Maximum Three-State Output Capacitance (Output in High-Impedance)	—	15	15	15	pF

CPD	Power Dissipation Capacitance (Per Gate) Used to determine the no-load dynamic power consumption, $P_D = C_{PD} V_{CC}^2 f + I_{CC} V_{CC}$	Typical @ 25°C, V _{CC} = 5 V	pF
		40	

HCT- 365, 367**DC ELECTRICAL CHARACTERISTICS**

Symbol	Parameter	Conditions	V _{CC} V	Guaranteed Limits			Unit
				25°C to -55°C	≤85°C	≤125°C	
V _{IH}	Minimum High-Level Input Voltage	V _{OUT} = 0.1 V, I _{OUT} = 0 μA or V _{OUT} = V _{CC} - 0.1 V	4.5 5.5	2.0 2.0	2.0 2.0	2.0 2.0	V
V _{IL}	Maximum Low-Level Input Voltage	V _{OUT} = 0.1 V, I _{OUT} = 0 μA or V _{OUT} = V _{CC} - 0.1 V	4.5 5.5	0.8 0.8	0.8 0.8	0.8 0.8	V
V _{OH}	Minimum High-Level Output Voltage	V _{IN} = V _{IH} or V _{IL} I _{OUT} ≤ 20 μA	4.5 5.5	4.4 5.4	4.4 5.4	4.4 5.4	V
		V _{IN} = V _{IH} or V _{IL} I _{OUT} < 6.0 mA	5.5	3.98	3.84	3.7	
V _{OL}	Maximum Low Level Output Voltage	V _{IN} = V _{IH} or V _{IL} I _{OUT} ≤ 20 μA	4.5 5.5	0.1 0.1	0.1 0.1	0.1 0.1	V
		V _{IN} = V _{IH} or V _{IL} , I _{OUT} ≤ 4.0 mA I _{OUT} ≤ 6.0 mA	4.5	0.26	0.33	0.4	
I _{IN}	Maximum Input Leakage Current	V _{IN} = V _{CC} or GND	5.5	± 0.1	± 1	± 1	μA
I _{oz}	Maximum Three-State Leakage Current	Output in High-Impedance State V _{IN} = V _{IL} or V _{IH} V _{OUT} = V _{CC} or GND	6.0	± 0.5	± 5.0	± 10.0	μA
I _{CC}	Maximum Quiescent Supply Current (Per Package)	V _{IN} = V _{CC} or GND I _{OUT} = 0 μA	5.5	8	80	160	μA

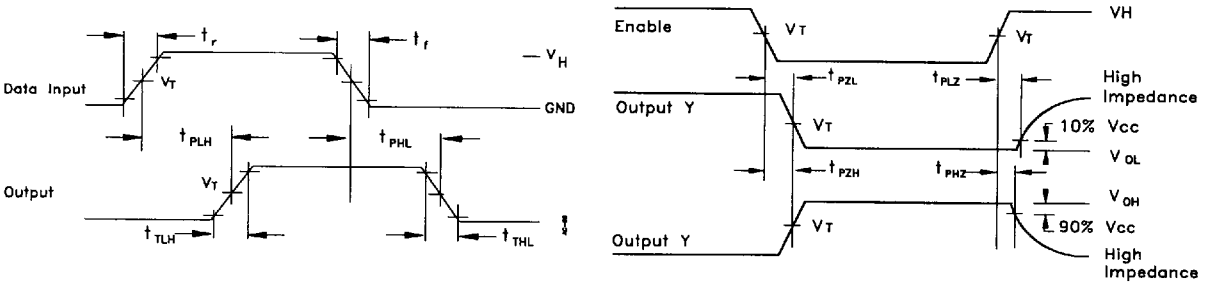
Symbol	Parameter	Conditions	V _{CC} V	Guaranteed Limits			Unit
				25°C to -55°C	≤85°C	≤125°C	
ΔI _{CC}	Additional Quiescent Supply Current	V _{IN} =2.4V, Any One Input V _{IN} =V _{CC} or GND, Other Inputs I _{OUT} =0μA	5.5	≥-55°C	25°C to 125°C		mA
				2.9	2.4		

AC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter (C _L =50pF, Input tf=tr=6ns) (V _{CC} = 5V ± 10%)	Guaranteed Limit			Unit
		25°C to -55°C	≤85°C	≤125°C	
t _{PLH} , t _{PHL}	Maximum Propagation Delay Time, Input to Output	24	30	36	ns
t _{PLZ} , t _{PHZ}	Maximum Propagation Delay Time, Output Disable to Output	45	55	65	ns
t _{PZL} , t _{PZH}	Maximum Propagation Delay Time, Output Enable to Output	45	55	65	ns
t _{TLH} , t _{THL}	Maximum Output Transition Time Any Output	12	15	18	ns
C _{IN}	Maximum Input Capacitance	10	10	10	pF
C _{OUT}	Maximum Three-State Output Capacitance (Output in High Impedance State)	15	15	15	pF

CPD	Power Dissipation Capacitance (Per Gate) Used to determine the no-load dynamic power consumption $P_D = C_{PD} V_{CC}^2 f + I_{CC} V_{CC}$	Typical @ 25°C, VCC = 5 V	pF
		60	

SWITCHING WAVEFORMS



Input threshold Voltage, V_T = 50% V_{CC} for HC, 1.3V for HCT
V_H = V_{CC} for HC, 3V for HCT

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