Hex buffer/line driver; 3-state Rev. 6 — 28 July 2021

1. General description

The 74HC365; 74HCT365 is a hex buffer/line driver with 3-state outputs controlled by the output enable inputs (\overline{OEn}). A HIGH on \overline{OEn} causes the outputs to assume a high impedance OFF-state. Inputs include clamp diodes. This enables the use of current limiting resistors to interface inputs to voltages in excess of V_{CC}.

2. Features and benefits

- Wide supply voltage range from 2.0 V to 6.0 V
- CMOS low power dissipation
- High noise immunity
- Latch-up performance exceeds 100 mA per JESD 78 Class II Level B
- Complies with JEDEC standards:
 - JESD8C (2.7 V to 3.6 V)
 - JESD7A (2.0 V to 6.0 V)
- · Non-inverting outputs
- Input levels:
 - For 74HC365: CMOS level
 - For 74HCT365: TTL level
- ESD protection:
- HBM JESD22-A114F exceeds 2000 V
- MM JESD22-A115-A exceeds 200 V
- Multiple package options
- Specified from -40 °C to +85 °C and from -40 °C to +125 °C

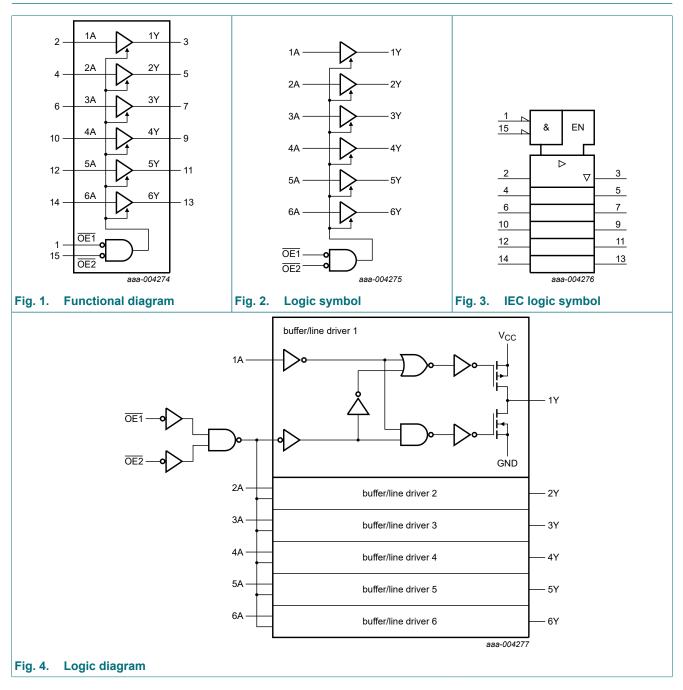
3. Ordering information

Table 1. Ordering information

Type number	Package			
	Temperature range	Name	Description	Version
74HC365D	-40 °C to +125 °C) °C to +125 °C SO16 g	plastic small outline package; 16 leads; body width 3.9 mm	SOT109-1
74HCT365D				
74HC365PW	-40 °C to +125 °C	TSSOP16		SOT403-1
74HCT365PW			body width 4.4 mm	

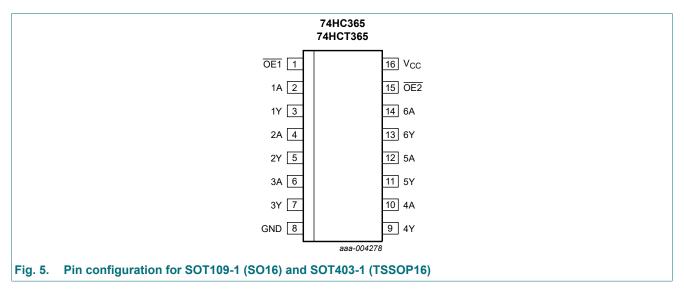


4. Functional diagram



5. Pinning information

5.1. Pinning



5.2. Pin description

Symbol	Pin	Description
OE1	1	output enable input 1 (active LOW)
1A	2	data input 1
1Y	3	data output 1
2A	4	data input 2
2Y	5	data output 2
3A	6	data input 3
3Y	7	data output 3
GND	8	ground (0 V)
4Y	9	data output 4
4A	10	data input 4
5Y	11	data output 5
5A	12	data input 5
6Y	13	data output 6
6A	14	data input 6
OE2	15	output enable input 2 (active LOW)
V _{CC}	16	supply voltage

6. Functional description

Table 3. Function table

H = HIGH voltage level; L = LOW voltage level; X = don't care; Z = high-impedance OFF-state.

		Input	Output
OE1	OE2	nA	nY
L	L	L	L
L	L	Н	Н
X	Н	Х	Z
Н	Х	Х	Z

7. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	Min	Max	Unit
V _{CC}	supply voltage		-0.5	+7	V
I _{IK}	input clamping current	$V_{\rm I} < -0.5 \text{ V or } V_{\rm I} > V_{\rm CC} + 0.5 \text{ V}$ [1]	-	±20	mA
I _{OK}	output clamping current	$V_{\rm O} < -0.5 \text{ V or } V_{\rm O} > V_{\rm CC} + 0.5 \text{ V}$ [1]	-	±20	mA
lo	output current	$V_{\rm O}$ = -0.5 V to (V _{CC} + 0.5 V)	-	±35	mA
I _{CC}	supply current		-	70	mA
I _{GND}	ground current		-70	-	mA
T _{stg}	storage temperature		-65	+150	°C
P _{tot}	total power dissipation	[2]	-	500	mW

[1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

[2] For SOT109-1 (SO16) package: P_{tot} derates linearly with 12.4 mW/K above 110 °C.

For SOT403-1 (TSSOP16) package: P_{tot} derates linearly with 8.5 mW/K above 91 °C.

8. Recommended operating conditions

Table 5. Recommended operating conditions

Voltages are referenced to GND (ground = 0 V)

Symbol	Parameter	Conditions	74HC365			74HCT365			Unit
			Min	Тур	Max	Min	Тур	Max	
V _{CC}	supply voltage		2.0	5.0	6.0	4.5	5.0	5.5	V
VI	input voltage		0	-	V _{CC}	0	-	V _{CC}	V
Vo	output voltage		0	-	V _{CC}	0	-	V _{CC}	V
T _{amb}	ambient temperature		-40	+25	+125	-40	+25	+125	°C
Δt/ΔV	input transition rise and fall rate	V _{CC} = 2.0 V	-	-	625	-	-	-	ns/V
		V _{CC} = 4.5 V	-	1.67	139	-	1.67	139	ns/V
		V _{CC} = 6.0 V	-	-	83	-	-	-	ns/V

9. Static characteristics

Table 6. Static characteristics 74HC365

At recommended operating conditions; voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
T _{amb} = 2	5 °C		I	1		
VIH	HIGH-level input voltage	V _{CC} = 2.0 V	1.5	1.2	-	V
		V _{CC} = 4.5 V	3.15	2.4	-	V
		V _{CC} = 6.0 V	4.2	3.2	-	V
V _{IL}	LOW-level input voltage	V _{CC} = 2.0 V	-	0.8	0.5	V
		V _{CC} = 4.5 V	-	2.1	1.35	V
		V _{CC} = 6.0 V	-	2.8	1.8	V
V _{OH}	HIGH-level output voltage	V _I = V _{IH} or V _{IL}	-	-	-	
		I _O = -20 μA; V _{CC} = 2.0 V	1.9	2.0	-	V
		I _O = -20 μA; V _{CC} = 4.5 V	4.4	4.5	-	V
		I _O = -20 μA; V _{CC} = 6.0 V	5.9	6.0	-	V
		I _O = -6.0 mA; V _{CC} = 4.5 V	3.98	4.32	-	V
		I _O = -7.8 mA; V _{CC} = 6.0 V	5.48	5.81 -	V	
V _{OL}	LOW-level output voltage	V _I = V _{IH} or V _{IL}				
		I _O = 20 μA; V _{CC} = 2.0 V	-	0	0.1	V
		I _O = 20 μA; V _{CC} = 4.5 V	-	0	0.1	V
		I _O = 20 μA; V _{CC} = 6.0 V	-	0	0.1	V
		I _O = 6.0 mA; V _{CC} = 4.5 V	-	0.15	0.26	V
		I _O = 7.8 mA; V _{CC} = 6.0 V	-	0.16	0.26	V
l _l	input leakage current	$V_I = V_{CC}$ or GND; $V_{CC} = 6.0 V$	-	-	±0.1	μA
I _{OZ}	OFF-state output current	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{O} = V_{CC} \text{ or } GND; V_{CC} = 6.0 \text{ V}$	-	-	±0.5	μA
I _{CC}	supply current	$V_{I} = V_{CC} \text{ or GND}; I_{O} = 0 \text{ A}; V_{CC} = 6.0 \text{ V}$	-	-	8.0	μA
CI	input capacitance		-	3.5	-	pF
T _{amb} = -4	40 °C to +85 °C					
V _{IH}	HIGH-level input voltage	V _{CC} = 2.0 V	1.5	-	-	V
		V _{CC} = 4.5 V	3.15	-	-	V
		V _{CC} = 6.0 V	4.2	-	-	V
V _{IL}	LOW-level input voltage	V _{CC} = 2.0 V	-	-	0.5	V
		V _{CC} = 4.5 V	-	-	1.35	V
		V _{CC} = 6.0 V	-	-	1.8	V
V _{OH}	HIGH-level output voltage	V _I = V _{IH} or V _{IL}				
		I _O = -20 μA; V _{CC} = 2.0 V	1.9	-	-	V
		I _O = -20 μA; V _{CC} = 4.5 V	4.4	-	-	V
		I _O = -20 μA; V _{CC} = 6.0 V	5.9	-	-	V
		I _O = -6.0 mA; V _{CC} = 4.5 V	3.84	-	-	V
		I _O = -7.8 mA; V _{CC} = 6.0 V	5.34	-	-	V

Hex buffer/line driver; 3-state

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
V _{OL}	LOW-level output voltage	V _I = V _{IH} or V _{IL}				
		I _O = 20 μA; V _{CC} = 2.0 V	-	-	0.1	V
		I _O = 20 μA; V _{CC} = 4.5 V	-	-	0.1	V
		I _O = 20 μA; V _{CC} = 6.0 V	-	-	0.1	V
		I _O = 6.0 mA; V _{CC} = 4.5 V	-	-	0.33	V
		I _O = 7.8 mA; V _{CC} = 6.0 V	-	-	0.33	V
l _l	input leakage current	$V_{I} = V_{CC}$ or GND; $V_{CC} = 6.0 V$	-	-	±1.0	μA
I _{OZ}	OFF-state output current	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{O} = V_{CC} \text{ or } \text{GND}; V_{CC} = 6.0 \text{ V}$	-	-	±5.0	μA
I _{CC}	supply current	$V_{I} = V_{CC}$ or GND; $I_{O} = 0$ A; $V_{CC} = 6.0$ V	-	-	80	μA
$T_{amb} = -4$	10 °C to +125 °C		I			
VIH	HIGH-level input voltage	V _{CC} = 2.0 V	1.5	-	-	V
		V _{CC} = 4.5 V	3.15	-	-	V
		V _{CC} = 6.0 V	4.2	-	-	V
V _{IL}	LOW-level input voltage	V _{CC} = 2.0 V	-	-	0.5	V
12		V _{CC} = 4.5 V	-	-	1.35	V
		V _{CC} = 6.0 V	-	-	1.8	V
V _{OH}	HIGH-level output voltage	V _I = V _{IH} or V _{IL}				
		I _O = -20 μA; V _{CC} = 2.0 V	1.9	-	-	V
		I _O = -20 μA; V _{CC} = 4.5 V	4.4	-	-	V
		I _O = -20 μA; V _{CC} = 6.0 V	5.9	-	-	V
		I _O = -6.0 mA; V _{CC} = 4.5 V	3.7	-	-	V
		I _O = -7.8 mA; V _{CC} = 6.0 V	5.2	-	-	V
V _{OL}	LOW-level output voltage	V _I = V _{IH} or V _{IL}				
		I _O = 20 μA; V _{CC} = 2.0 V	-	-	0.1	V
		I _O = 20 μA; V _{CC} = 4.5 V	-	-	0.1	V
		I _O = 20 μA; V _{CC} = 6.0 V	-	-	0.1	V
		I _O = 6.0 mA; V _{CC} = 4.5 V	-	-	0.4	V
		I _O = 7.8 mA; V _{CC} = 6.0 V	-	-	0.4	V
l _l	input leakage current	$V_I = V_{CC}$ or GND; $V_{CC} = 6.0 V$	-	-	±1.0	μA
I _{OZ}	OFF-state output current	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{O} = V_{CC} \text{ or GND}; V_{CC} = 6.0 \text{ V}$	-	-	±10.0	μA
I _{CC}	supply current	V _I = V _{CC} or GND; I _O = 0 A; V _{CC} = 6.0 V	_	-	160	μA

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Table 7. Static characteristics 74HCT365

At recommended operating conditions; voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
T _{amb} = 2	5 °C	·				
VIH	HIGH-level input voltage	V _{CC} = 4.5 V to 5.5 V	2.0	1.6	-	V
V _{IL}	LOW-level input voltage	V _{CC} = 4.5 V to 5.5 V	-	1.2	0.8	V
V _{OH}	HIGH-level output	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{CC} = 4.5 \text{ V}$				
	voltage	I _O = -20 μA	4.4	4.5	-	V
		I _O = -6.0 mA	3.98	4.32	-	V
V _{OL}	LOW-level output	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{CC} = 4.5 \text{ V}$				
	voltage	I _O = 20 μA	-	0	0.1	V
		I _O = 6.0 mA	-	0.16	0.26	V
l _l	input leakage current	$V_{I} = V_{CC}$ or GND; $V_{CC} = 5.5 V$	-	-	±0.1	μA
l _{oz}	OFF-state output current	$V_{I} = V_{IH}$ or V_{IL} ; $V_{O} = V_{CC}$ or GND; $V_{CC} = 5.5 V$	-	-	±0.5	μA
I _{CC}	supply current	$V_{I} = V_{CC}$ or GND; $I_{O} = 0$ A; $V_{CC} = 5.5$ V	-	-	8.0	μA
ΔI _{CC}	additional supply current	$V_I = V_{CC} - 2.1 V$; other inputs at V_{CC} or GND; $I_O = 0 A$				
		pins nA	-	100	360	μA
		pin OE1	-	100	360	μA
		pin OE2	-	90	324	μA
CI	input capacitance		-	3.5	-	pF
T _{amb} = -4	10 °C to +85 °C					
V _{IH}	HIGH-level input voltage	V _{CC} = 4.5 V to 5.5 V	2.0	-	-	V
V _{IL}	LOW-level input voltage	V _{CC} = 4.5 V to 5.5 V	-	-	0.8	V
V _{OH}	HIGH-level output	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{CC} = 4.5 \text{ V}$				
	voltage	I _O = -20 μA	4.4	-	; 	V
		I _O = -6.0 mA	3.84	-	-	V
V _{OL}	LOW-level output	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{CC} = 4.5 \text{ V}$				
	voltage	I _O = 20 μA	-	-	0.1	V
		I _O = 6.0 mA	-	-	0.33	V
l _l	input leakage current	$V_{I} = V_{CC}$ or GND; $V_{CC} = 5.5 V$	-	-	±1.0	μA
I _{OZ}	OFF-state output current	$V_{I} = V_{IH}$ or V_{IL} ; $V_{O} = V_{CC}$ or GND; $V_{CC} = 5.5 V$			±5.0	μA
I _{CC}	supply current	$V_I = V_{CC}$ or GND; $I_O = 0$ A; $V_{CC} = 5.5$ V	-	-	80	μA
ΔI _{CC}	additional supply current	$V_I = V_{CC} - 2.1 \text{ V}$; other inputs at V_{CC} or GND; $I_0 = 0 \text{ A}$				
		pins nA	-	-	450	μA
		pin OE1	-	-	450	μA
		pin OE2	-	-	405	μA

Hex buffer/line driver; 3-state

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $						
VIH	HIGH-level input voltage	V _{CC} = 4.5 V to 5.5 V	2.0	-	-	V
V _{IL}	LOW-level input voltage	V _{CC} = 4.5 V to 5.5 V	-	-	0.8	V
V _{OH}		$V_{I} = V_{IH} \text{ or } V_{IL}; V_{CC} = 4.5 \text{ V}$				
	voltage	I _O = -20 μA	4.4	-	-	V
		I _O = -6.0 mA	3.7	-	-	V
V _{OL}		$V_{I} = V_{IH} \text{ or } V_{IL}; V_{CC} = 4.5 \text{ V}$				
		I _O = 20 μA	-	-	0.1	V
		I _O = 6.0 mA	-	-	0.4	V
l _l	input leakage current	$V_{I} = V_{CC}$ or GND; $V_{CC} = 5.5 V$	-	-	±1.0	μA
I _{OZ}	OFF-state output current	$V_{I} = V_{IH} \text{ or } V_{IL}; V_{O} = V_{CC} \text{ or GND}; V_{CC} = 5.5 \text{ V}$	-	-	±10.0	μA
I _{CC}	supply current	V _I = V _{CC} or GND; I _O = 0 A; V _{CC} = 5.5 V	-	-	160	μA
ΔI _{CC}	additional supply current	$V_I = V_{CC} - 2.1 V$; other inputs at V_{CC} or GND; $I_0 = 0 A$				
		pins nA	-	-	490	μA
		pin OE1	-	-	490	μA
		pin OE2	-	-	441	μA

10. Dynamic characteristics

Table 8. Dynamic characteristics 74HC365

Voltages are referenced to GND (ground = 0 V); C_L = 50 pF unless otherwise specified; see test circuit Fig. 8.

Symbol	Parameter	Conditions		Min	Тур	Max	Unit
T _{amb} = 2	5 °C	I			1	I	
t _{pd}	propagation delay	nA to nY; see <u>Fig. 6</u>	[1]				
		V _{CC} = 2.0 V		-	30	Max 95 19 - 16 30 26 150 30 26 1150 30 26 110 10 10 26	ns
		V _{CC} = 4.5 V		-	11		ns
		V _{CC} = 5 V; C _L = 15 pF		-	9	-	ns
		V _{CC} = 6.0 V		-	9	16	ns
t _{en}	enable time	OEn to nY; see Fig. 7	[2]				
		V _{CC} = 2.0 V		-	47	150	ns
		V _{CC} = 4.5 V		-	17	30	ns
		V _{CC} = 6.0 V		- 14 20	26	ns	
t _{dis}	disable time	OEn to nY; see <u>Fig. 7</u>	[3]				
		V _{CC} = 2.0 V		-	61	150	ns
		V _{CC} = 4.5 V		-	22	30	ns
		V _{CC} = 6.0 V		-	18	26	ns
t _t	transition time	see <u>Fig. 6</u>	[4]				
		V _{CC} = 2.0 V		-	14	60	ns
		V _{CC} = 4.5 V		-	5	12	ns
		V _{CC} = 6.0 V		-	4	10	ns
C _{PD}	power dissipation capacitance	per buffer; V_I = GND to V_{CC}	[5]	-	40	-	pF

Hex buffer/line driver; 3-state

Symbol	Parameter	Conditions		Min	Тур	Max	Unit
T _{amb} = -4	40 °C to +85 °C						
t _{pd}	propagation delay	nA to nY; see <u>Fig. 6</u>	[1]				
		V _{CC} = 2.0 V		-	-	120	ns
		V _{CC} = 4.5 V		-	-	24	ns
		V _{CC} = 6.0 V		-	-	20	ns
en	enable time	OEn to nY; see Fig. 7	[2]				
		V _{CC} = 2.0 V		-	-	120 24 20 190 38 33 190 38 33 190 38 33 190 38 33 190 38 33 190 38 33 190 38 33 190 29 25 45 38 38 38 38 39 225 45 38 38 38 38 38 38 39 225 45 38 38 38 38 38 38 38 38 38 38 38 <td>ns</td>	ns
		V _{CC} = 4.5 V		-	-	38	ns
		V _{CC} = 6.0 V		-	-	33	ns
dis	disable time	OEn to nY; see <u>Fig. 7</u>	[3]				
		V _{CC} = 2.0 V		-	-	190	ns
		V _{CC} = 4.5 V		-	-	38	ns
		V _{CC} = 6.0 V		-	-	33	ns
t	transition time	see <u>Fig. 6</u>	[4]				
		V _{CC} = 2.0 V		-	-	75	ns
		V _{CC} = 4.5 V		-	-	15	ns
		V _{CC} = 6.0 V		-	- 13	13	ns
T _{amb} = -4	40 °C to +125 °C						
pd	propagation delay	nA to nY; see <u>Fig. 6</u>	[1]				
		V _{CC} = 2.0 V		-	-	145	ns
		V _{CC} = 4.5 V		-	-	24 20 190 38 33 190 38 33 75 15 15 15 15 15 15 15 15 29 25 225 45 38 225 45 38 225 45 38	ns
		V _{CC} = 6.0 V		-	-	25	ns
en	enable time	OEn to nY; see Fig. 7	[2]				
		V _{CC} = 2.0 V		-	-	38 33 190 38 33 75 15 15 12 225 45 38 225 45 38 225 45 38 90 18	ns
		V _{CC} = 4.5 V		-	-	45	ns
		V _{CC} = 6.0 V		-	-	38	ns
dis	disable time	OEn to nY; see Fig. 7	[3]				
		V _{CC} = 2.0 V		-	-	225	ns
		V _{CC} = 4.5 V		-	-	45	ns
		V _{CC} = 6.0 V		-	-	38	ns
t	transition time	see <u>Fig. 6</u>	[4]			1	
		V _{CC} = 2.0 V		-	-	90	ns
		$V_{CC} = 4.5 V$		-	-	18	ns
		V _{CC} = 6.0 V		-	-	15	ns

[1] t_{pd} is the same as t_{PHL} and t_{PLH} .

[2] \dot{t}_{en} is the same as t_{PZH} and t_{PZL} .

[2] t_{dis} is the same as t_{PLZ} and t_{PLZ}.
[3] t_{dis} is the same as t_{PHZ} and t_{PLZ}.
[4] t_t is the same as t_{THL} and t_{TLH}.
[5] C_{PD} is used to determine the dynamic power dissipation (P_D in μW). P_D = C_{PD} x V_{CC}² x f_i x N + Σ(C_L x V_{CC}² x f_o) where: f_i = input frequency in MHz;

f_o = output frequency in MHz;

 C_L = output load capacitance in pF;

V_{CC} = supply voltage in V;

N = number of inputs switching;

 $\Sigma(C_L \times V_{CC}^2 \times f_o) = \text{sum of outputs.}$

74HC_HCT365

Table 9. Dynamic characteristics 74HCT365

Voltages are referenced to GND (ground = 0 V); C_L = 50 pF unless otherwise specified; see test circuit Fig. 8.

Symbol	Parameter	Conditions		Min	Тур	Max	Unit
T _{amb} = 2	5 °C				1	1	1
t _{pd}	propagation delay	nA to nY; see <u>Fig. 6</u>	[1]				
		V _{CC} = 4.5 V		-	14	25	ns
		V _{CC} = 5 V; C _L = 15 pF		-	11	-	ns
t _{en}	enable time	$\overline{\text{OEn}}$ to nY; V _{CC} = 4.5 V; see <u>Fig. 7</u>	[2]	-	18	35	ns
t _{dis}	disable time	$\overline{\text{OEn}}$ to nY; V _{CC} = 4.5 V; see <u>Fig. 7</u>	[3]	-	23	35	ns
t _t	transition time	V _{CC} = 4.5 V; see <u>Fig. 6</u>	[4]	-	5	12	ns
C _{PD}	power dissipation capacitance	per buffer; V_I = GND to (V_{CC} - 1.5 V)	[5]	-	40	-	pF
T _{amb} = -4	40 °C to +85 °C						
t _{pd}	propagation delay	nA to nY; V _{CC} = 4.5 V; see <u>Fig. 6</u>	[1]	-	-	31	ns
t _{en}	enable time	$\overline{\text{OEn}}$ to nY; V _{CC} = 4.5 V; see <u>Fig. 7</u>	[2]	-	-	44	ns
t _{dis}	disable time	$\overline{\text{OEn}}$ to nY; V _{CC} = 4.5 V; see <u>Fig. 7</u>	[3]	-	-	44	ns
tt	transition time	V _{CC} = 4.5 V; see <u>Fig. 6</u>	[4]	-	-	15	ns
T _{amb} = -4	40 °C to +125 °C						
t _{pd}	propagation delay	nA to nY; V _{CC} = 4.5 V; see <u>Fig. 6</u>	[1]	-	-	38	ns
t _{en}	enable time	$\overline{\text{OEn}}$ to nY; V _{CC} = 4.5 V; see <u>Fig. 7</u>	[2]	-	-	53	ns
t _{dis}	disable time	$\overline{\text{OEn}}$ to nY; V _{CC} = 4.5 V; see <u>Fig. 7</u>	[3]	-	-	53	ns
t _t	transition time	V _{CC} = 4.5 V; see <u>Fig. 6</u>	[4]	-	-	18	ns

[1] t_{pd} is the same as t_{PHL} and t_{PLH} .

[2] t_{en} is the same as t_{PZH} and t_{PZL} .

[3] t_{dis} is the same as t_{PHZ} and $t_{\text{PLZ}}.$

[3] t_{dis} is the same as t_{PHZ} and t_{PLZ}.
[4] t_t is the same as t_{THL} and t_{TLH}.
[5] C_{PD} is used to determine the dynamic power dissipation (P_D in μW). P_D = C_{PD} x V_{CC}² x f_i x N + Σ(C_L x V_{CC}² x f_o) where: f_i = input frequency in MHz;

 f_o = output frequency in MHz;

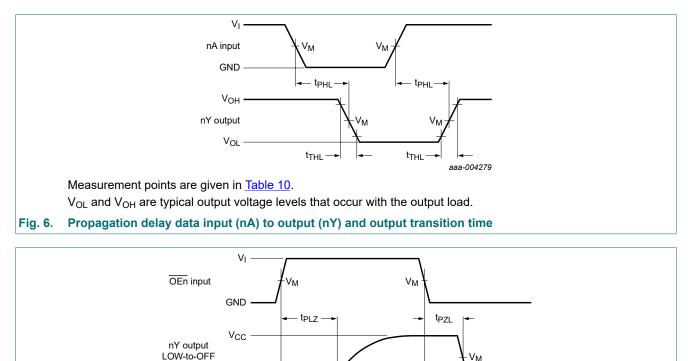
 C_L = output load capacitance in pF;

V_{CC} = supply voltage in V;

N = number of inputs switching;

 $\Sigma(C_L \times V_{CC}^2 \times f_o)$ = sum of outputs.

Product data sheet



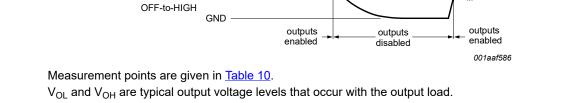
٧x

V٨

⊷ t_{PZH} –

VM

10.1. Waveforms and test circuit



tPHZ

Fig. 7. 3-state enable and disable times

OFF-to-LOW

nY output HIGH-to-OFF VOL

VOH

Table 10. Measurement points

Туре	Input	Output		
	V _M	V _M	V _X	V _Y
74HC365	0.5V _{CC}	0.5V _{CC}	0.1 × V _{CC}	$0.9 \times V_{CC}$
74HCT365	1.3 V	1.3 V	0.1 × V _{CC}	$0.9 \times V_{CC}$

Hex buffer/line driver; 3-state

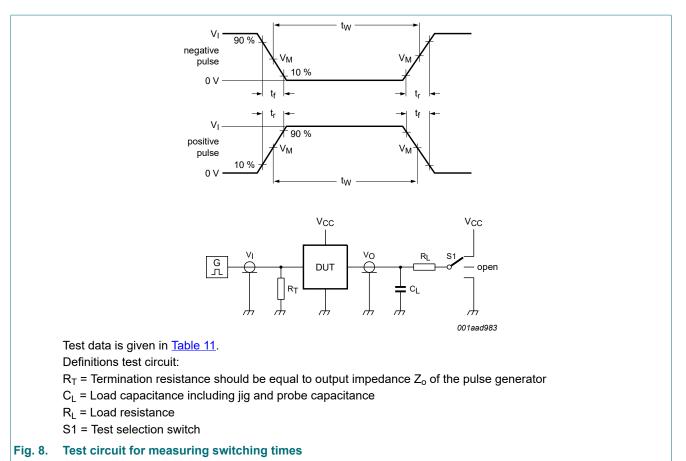


Table 11. Test data

Туре	Input		Load		S1 position		
	VI	t _r , t _f	CL	RL	t _{PHL} , t _{PLH}	t _{PZH} , t _{PHZ}	t _{PZL} , t _{PLZ}
74HC365	V _{CC}	6 ns	15 pF, 50 pF	1 kΩ	open	GND	V _{CC}
74HCT365	3 V	6 ns	15 pF, 50 pF	1 kΩ	open	GND	V _{CC}

11. Package outline

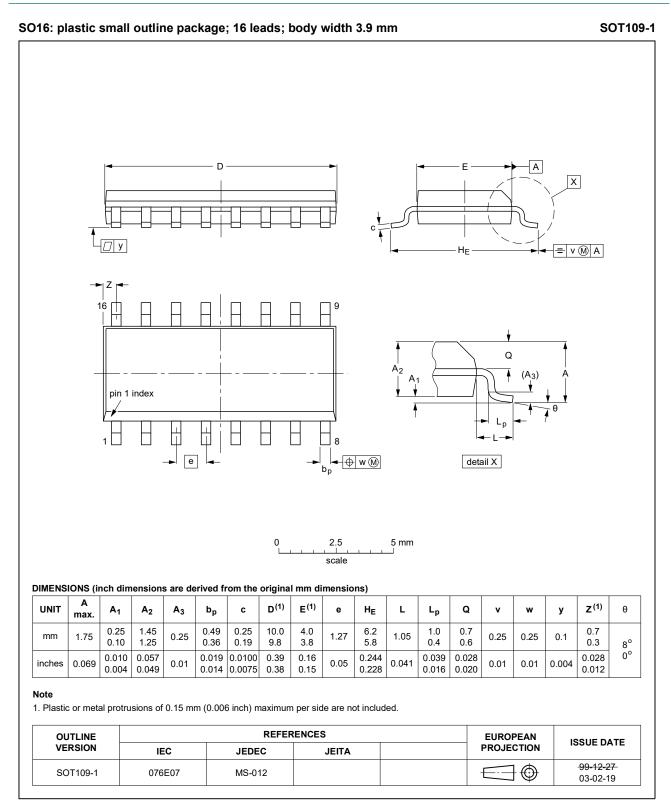


Fig. 9. Package outline SOT109-1 (SO16)

74HC_HCT365

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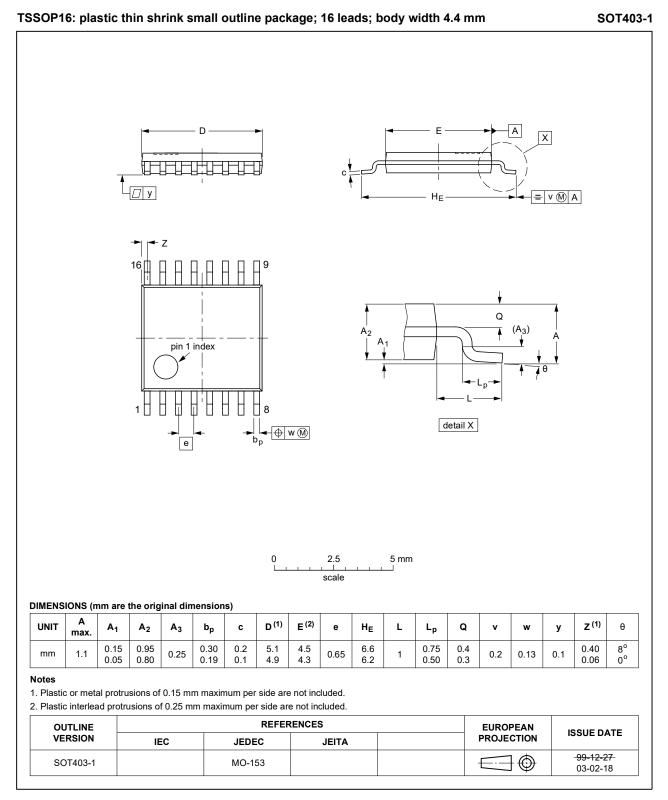


Fig. 10. Package outline SOT403-1 (TSSOP16)

12. Abbreviations

Acronym	Description
CMOS	Complementary Metal Oxide Semiconductor
DUT	Device Under Test
ESD	ElectroStatic Discharge
HBM	Human Body Model
MM	Machine Model

13. Revision history

/				
Release date	Data sheet status	Change notice	Supersedes	
20210728	Product data sheet	-	74HC_HCT365 v.5	
Type number 74HCT365DB (SOT338-1/SSOP16) removed.				
20210212	Product data sheet	-	74HC_HCT365 v.4	
 The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia. Legal texts have been adapted to the new company name where appropriate. <u>Section 1</u> and <u>Section 2</u> updated. Type number 74HC365DB (SOT338-1/SSOP16) removed. <u>Section 7</u>: Derating values for P_{tot} total power dissipation updated. 				
20160127	Product data sheet	-	74HC_HCT365 v.3	
Type numbers 74HC365N and 74HCT365N (SOT38-4) removed.				
20120905	Product data sheet	-	74HC_HCT365_CNV v.2	
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19970829	Product specification	-	-	
	Release date 20210728 • Type number 7 20210212 • The format of the Nexperial • Legal texts have • Section 1 and • Type number 7 • Section 7: Der 20160127 • Type numbers 20120905 • The format of the numbers of Neurophysical texts have	Release date Data sheet status 20210728 Product data sheet • Type number 74HCT365DB (SOT338-1/SSC 20210212 Product data sheet • The format of this data sheet has been redes • The format of this data sheet has been redes Nexperia. • Legal texts have been adapted to the new core • Section 1 and Section 2 updated. • Type number 74HC365DB (SOT338-1/SSOF • Section 7: Derating values for Ptot total powe 20160127 Product data sheet • Type numbers 74HC365N and 74HCT365N an	Release date Data sheet status Change notice 20210728 Product data sheet - * Type number 74HCT365DB (SOT338-1/SSOP16) removed. - 20210212 Product data sheet - * The format of this data sheet has been redesigned to comply with Nexperia. - * Legal texts have been adapted to the new company name where Section 1 and Section 2 updated. * Type number 74HC365DB (SOT338-1/SSOP16) removed. - * Section 1 and Section 2 updated. - * Type number 74HC365DB (SOT338-1/SSOP16) removed. - * Type numbers 74HC365DB (SOT338-1/SSOP16) removed. - * Type numbers 74HC365N and 74HCT365N (SOT38-4) removed - * Type numbers 74HC365N and 74HCT365N (SOT38-4) removed - * The format of this data sheet has been redesigned to comply with guidelines of NXP Semiconductors. - * Legal texts have been adapted to the new company name where -	

14. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
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Product [short] data sheet	Production	This document contains the product specification.

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Hex buffer/line driver; 3-state

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