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## 1. General description

The 74AUP3G34 is a triple buffer.

Schmitt trigger action at all inputs makes the circuit tolerant of slower input rise and fall times.

This device ensures a very low static and dynamic power consumption across the entire  $V_{CC}$  range from 0.8 V to 3.6 V.

This device is fully specified for partial Power-down applications using  $I_{OFF}$ . The  $I_{OFF}$  circuitry disables the output, preventing a damaging backflow current through the device when it is powered down.

## 2. Features and benefits

- Wide supply voltage range from 0.8 V to 3.6 V
- High noise immunity
- Complies with JEDEC standards:
  - JESD8-12 (0.8 V to 1.3 V)
  - JESD8-11 (0.9 V to 1.65 V)
  - JESD8-7 (1.2 V to 1.95 V)
  - JESD8-5 (1.8 V to 2.7 V)
  - JESD8-B (2.7 V to 3.6 V)
- ESD protection:
  - HBM JESD22-A114F Class 3A exceeds 5000 V
  - MM JESD22-A115-A exceeds 200 V
  - CDM JESD22-C101E exceeds 1000 V
- Low static power consumption;  $I_{CC} = 0.9 \ \mu A \ (maximum)$
- Latch-up performance exceeds 100 mA per JESD 78B Class II
- Inputs accept voltages up to 3.6 V
- Low noise overshoot and undershoot < 10 % of V<sub>CC</sub>
- I<sub>OFF</sub> circuitry provides partial Power-down mode operation
- Multiple package options
- Specified from -40 °C to +85 °C and -40 °C to +125 °C

# nexperia

## 3. Ordering information

Table 1.	Ordering information	1
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Type number	Package	Package							
	Temperature range	Name	Description	Version					
74AUP3G34DC	–40 °C to +125 °C	VSSOP8	plastic very thin shrink small outline package; 8 leads; body width 2.3 mm	SOT765-1					
74AUP3G34GT	–40 °C to +125 °C	XSON8	plastic extremely thin small outline package; no leads; 8 terminals; body 1 $\times$ 1.95 $\times$ 0.5 mm	SOT833-1					
74AUP3G34GF	–40 °C to +125 °C	XSON8	extremely thin small outline package; no leads; 8 terminals; body $1.35 \times 1 \times 0.5$ mm	SOT1089					
74AUP3G34GD	–40 °C to +125 °C	XSON8	plastic extremely thin small outline package; no leads; 8 terminals; body $3 \times 2 \times 0.5$ mm	SOT996-2					
74AUP3G34GM	–40 °C to +125 °C	XQFN8	plastic, extremely thin quad flat package; no leads; 8 terminals; body $1.6 \times 1.6 \times 0.5$ mm	SOT902-2					
74AUP3G34GN	–40 °C to +125 °C	XSON8	extremely thin small outline package; no leads; 8 terminals; body $1.2 \times 1.0 \times 0.35$ mm	SOT1116					
74AUP3G34GS	–40 °C to +125 °C	XSON8	extremely thin small outline package; no leads; 8 terminals; body $1.35 \times 1.0 \times 0.35$ mm	SOT1203					

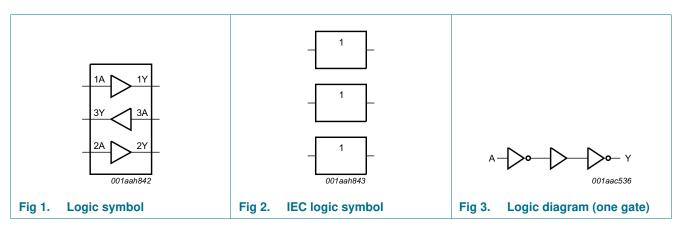
## 4. Marking

#### Table 2.Marking codes

Type number	Marking code <sup>[1]</sup>
74AUP3G34DC	a34
74AUP3G34GT	a34
74AUP3G34GF	aA
74AUP3G34GD	a34
74AUP3G34GM	a34
74AUP3G34GN	aA
74AUP3G34GS	aA

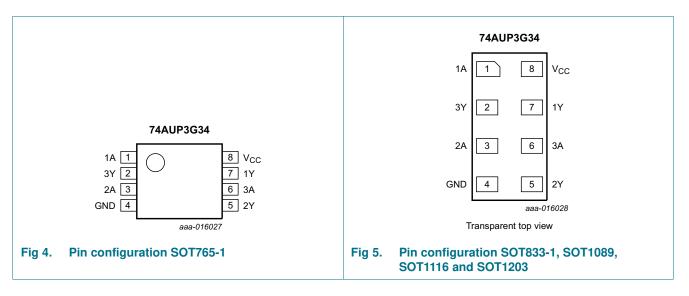
[1] The pin 1 indicator is located on the lower left corner of the device, below the marking code.

## 5. Functional diagram



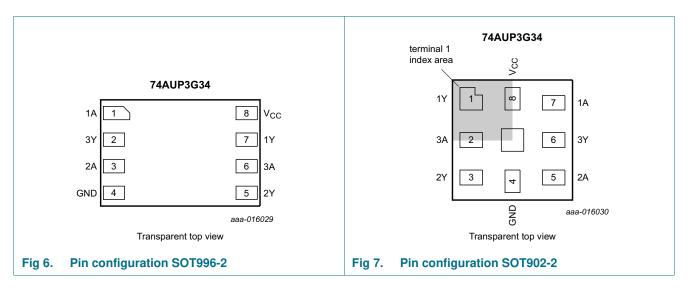
## 6. Pinning information

## 6.1 Pinning



74AUP3G34

Low-power triple buffer



## 6.2 Pin description

#### Table 3.Pin description

Symbol	Pin	Description	
	SOT765-1, SOT833-1, SOT1089, SOT996-2, SOT1116 and SOT1203	SOT902-2	_
1A, 2A, 3A	1, 3, 6	7, 5, 2	data input
1Y, 2Y, 3Y	7, 5, 2	1, 3, 6	data output
GND	4	4	ground (0 V)
V <sub>CC</sub>	8	8	supply voltage

## 7. Functional description

#### Table 4.Function table<sup>[1]</sup>

Input	Output
nA	nY
L	L
Н	Н

[1] H = HIGH voltage level; L = LOW voltage level.

## 8. Limiting values

#### Table 5. 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 <sub>CC</sub>	supply voltage			-0.5	+4.6	V
I <sub>IK</sub>	input clamping current	V <sub>1</sub> < 0 V		-50	-	mA
VI	input voltage		[1]	-0.5	+4.6	V
I <sub>OK</sub>	output clamping current	V <sub>O</sub> < 0 V		-50	-	mA
Vo	output voltage	Active mode and Power-down mode	[1]	-0.5	+4.6	V
lo	output current	$V_{O} = 0 V$ to $V_{CC}$		-	±20	mA
I <sub>CC</sub>	supply current			-	+50	mA
I <sub>GND</sub>	ground current			-50	-	mA
T <sub>stg</sub>	storage temperature			-65	+150	°C
P <sub>tot</sub>	total power dissipation	$T_{amb} = -40 \ ^{\circ}C \ to \ +125 \ ^{\circ}C$	[2]	-	250	mW

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

[2] For VSSOP8 packages: above 110 °C the value of Ptot derates linearly with 8.0 mW/K.

For XSON8 and XQFN8 packages: above 118 °C the value of Ptot derates linearly with 7.8 mW/K.

## 9. Recommended operating conditions

#### Table 6.Operating conditions

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>CC</sub>	supply voltage		0.8	3.6	V
VI	input voltage		0	3.6	V
Vo	output voltage	Active mode	0	V <sub>CC</sub>	V
		Power-down mode; $V_{CC} = 0 V$	0	3.6	V
T <sub>amb</sub>	ambient temperature		-40	+125	°C
$\Delta t / \Delta V$	input transition rise and fall rate	V <sub>CC</sub> = 0.8 V to 3.6 V	-	200	ns/V

## **10. Static characteristics**

#### Table 7. Static characteristics

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

Symbol	Parameter	Conditions	Min	Тур	Max	Unit			
T <sub>amb</sub> = 2	5 °C								
V <sub>IH</sub>	HIGH-level input voltage	$V_{CC} = 0.8 V$	0.70V <sub>CC</sub>	-	-	V			
		V <sub>CC</sub> = 0.9 V to 1.95 V	0.65V <sub>CC</sub>	-	-	V			
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	1.6	-	-	V			
		V <sub>CC</sub> = 3.0 V to 3.6 V	2.0	-	-	V			
V <sub>IL</sub>	LOW-level input voltage	$V_{CC} = 0.8 V$	-	-	$0.30V_{CC}$	V			
		$V_{CC} = 0.9 V$ to 1.95 V	-	-	$0.35V_{CC}$	V			
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	-	-	0.7	V			
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	-	-	0.9	V			
V <sub>OH</sub>	HIGH-level output voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$							
		$I_O$ = –20 $\mu\text{A};V_{CC}$ = 0.8 V to 3.6 V	$V_{CC}-0.1$	-	-	V			
		$I_{O} = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	0.75V <sub>CC</sub>	-	-	V			
		$I_{O} = -1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	1.11	-	-	V			
		$I_{O} = -1.9 \text{ mA}; V_{CC} = 1.65 \text{ V}$	1.32	-	-	V			
		$I_{O} = -2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$	2.05	-	-	V			
		$I_{O} = -3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.9	-	-	V			
		$I_{O} = -2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.72	-	-	V			
		$I_{O} = -4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.6	-	-	V			
V <sub>OL</sub>	LOW-level output voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$							
		$I_O$ = 20 $\mu A;V_{CC}$ = 0.8 V to 3.6 V	-	-	0.1	V			
		$I_{O} = 1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	-	-	0.3V <sub>CC</sub>	V			
		I <sub>O</sub> = 1.7 mA; V <sub>CC</sub> = 1.4 V	-	-	0.31	V			
		I <sub>O</sub> = 1.9 mA; V <sub>CC</sub> = 1.65 V	-	-	0.31	V			
		$I_{O}$ = 2.3 mA; $V_{CC}$ = 2.3 V	-	-	0.31	V			
		$I_{O} = 3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$	-	-	0.44	V			
		$I_{O} = 2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.31	V			
		I <sub>O</sub> = 4.0 mA; V <sub>CC</sub> = 3.0 V	-	-	0.44	V			
l <sub>l</sub>	input leakage current	$V_I = GND$ to 3.6 V; $V_{CC} = 0$ V to 3.6 V	-	-	±0.1	μA			
I <sub>OFF</sub>	power-off leakage current	$V_{I}$ or $V_{O} = 0$ V to 3.6 V; $V_{CC} = 0$ V	-	-	±0.2	μA			
$\Delta I_{OFF}$	additional power-off leakage current		-	-	±0.2	μA			
I <sub>CC</sub>	supply current	$\label{eq:VI} \begin{array}{l} V_{I}=GND \text{ or } V_{CC}; \ I_{O}=0 \ A; \\ V_{CC}=0.8 \ V \ to \ 3.6 \ V \end{array}$	-	-	0.5	μA			
$\Delta I_{CC}$	additional supply current		-	-	40	μA			
CI	input capacitance	$V_{CC} = 0$ V to 3.6 V; $V_I = GND$ or $V_{CC}$	-	1.0	-	pF			
Co	output capacitance	$V_O = GND; V_{CC} = 0 V$	-	1.8	-	pF			

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
T <sub>amb</sub> = –	40 °C to +85 °C	1				
V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 0.8 V	0.70V <sub>CC</sub>	-	-	V
		V <sub>CC</sub> = 0.9 V to 1.95 V	0.65V <sub>CC</sub>	-	-	V
		V <sub>CC</sub> = 2.3 V to 2.7 V		-	-	V
		V <sub>CC</sub> = 3.0 V to 3.6 V	2.0	-	-	V
/ <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 0.8 V	-	-	0.30V <sub>CC</sub>	V
		V <sub>CC</sub> = 0.9 V to 1.95 V	-	-	$0.35V_{CC}$	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	-	0.7	V
		V <sub>CC</sub> = 3.0 V to 3.6 V	-	-	0.9	V
√ <sub>ОН</sub>	HIGH-level output voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$				
		$I_O$ = –20 $\mu\text{A};V_{CC}$ = 0.8 V to 3.6 V	$V_{CC}-0.1$	-	-	V
		$I_{O} = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	0.7V <sub>CC</sub>	-	-	V
		$I_{O} = -1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	1.03	-	-	V
		$I_{O} = -1.9 \text{ mA}; V_{CC} = 1.65 \text{ V}$	1.30	-	-	V
		$I_{O} = -2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.97	-	-	V
		$I_{O} = -3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.85	-	-	V
		$I_{O} = -2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.67	-	-	V
		$I_{O} = -4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.55	-	-	V
/ <sub>OL</sub>	LOW-level output voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$			_	
		$I_{O} = 20 \ \mu A; V_{CC} = 0.8 \ V \text{ to } 3.6 \ V$	-	-	0.1	V
		I <sub>O</sub> = 1.1 mA; V <sub>CC</sub> = 1.1 V	-	-	0.3V <sub>CC</sub>	V
		I <sub>O</sub> = 1.7 mA; V <sub>CC</sub> = 1.4 V	-	-	0.37	V
		I <sub>O</sub> = 1.9 mA; V <sub>CC</sub> = 1.65 V	-	-	0.35	V
		$I_{O}$ = 2.3 mA; $V_{CC}$ = 2.3 V	-	-	0.33	V
		I <sub>O</sub> = 3.1 mA; V <sub>CC</sub> = 2.3 V	-	-	0.45	V
		$I_{O} = 2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.33	V
		$I_{O} = 4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.45	V
I	input leakage current	$V_I = GND$ to 3.6 V; $V_{CC} = 0$ V to 3.6 V	-	-	±0.5	μA
OFF	power-off leakage current	$V_{I}$ or $V_{O} = 0$ V to 3.6 V; $V_{CC} = 0$ V	-	-	±0.5	μA
Al <sub>OFF</sub>	additional power-off leakage current		-	-	±0.6	μA
сс	supply current	$\label{eq:VI} \begin{array}{l} V_{I}=GND \text{ or } V_{CC}; \ I_{O}=0 \ A; \\ V_{CC}=0.8 \ V \ to \ 3.6 \ V \end{array}$	-	-	0.9	μA
∆I <sub>CC</sub>	additional supply current	$V_{I} = V_{CC} - 0.6 \text{ V}; I_{O} = 0 \text{ A};$ $V_{CC} = 3.3 \text{ V}$	-	-	50	μA

#### Table 7. Static characteristics ...continued

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

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
T <sub>amb</sub> = –	40 °C to +125 °C					
VIH	HIGH-level input voltage	V <sub>CC</sub> = 0.8 V	0.75V <sub>CC</sub>	-	-	V
	V <sub>CC</sub> = 0.9 V to 1.95 V		0.70V <sub>CC</sub>	-	-	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	1.6	-	-	V
		V <sub>CC</sub> = 3.0 V to 3.6 V	2.0	-	-	V
V <sub>IL</sub>	LOW-level input voltage	-	-	0.25V <sub>CC</sub>	V	
		V <sub>CC</sub> = 0.9 V to 1.95 V	-	-	0.30V <sub>CC</sub>	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	-	0.7	V
		V <sub>CC</sub> = 3.0 V to 3.6 V	-	-	0.9	V
√ <sub>ОН</sub>	HIGH-level output voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$				
		$I_{O}$ = –20 $\mu\text{A};V_{CC}$ = 0.8 V to 3.6 V	$V_{CC}-0.11$	-	-	V
		$I_{O} = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	0.6V <sub>CC</sub>	-	-	V
		$I_{O} = -1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	0.93	-	-	V
		$I_{O} = -1.9 \text{ mA}; V_{CC} = 1.65 \text{ V}$	1.17	-	-	V
		$I_{O} = -2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.77	-	-	V
		$I_{O} = -3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.67	-	-	V
		$I_{O} = -2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.40	-	-	V
		$I_{O} = -4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.30	-	-	V
/ <sub>OL</sub>	LOW-level output voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$	I			
		$I_{O} = 20 \ \mu A; V_{CC} = 0.8 \ V \text{ to } 3.6 \ V$	-	-	0.11	V
		I <sub>O</sub> = 1.1 mA; V <sub>CC</sub> = 1.1 V	-	-	0.33V <sub>CC</sub>	V
		I <sub>O</sub> = 1.7 mA; V <sub>CC</sub> = 1.4 V	-	-	0.41	V
		I <sub>O</sub> = 1.9 mA; V <sub>CC</sub> = 1.65 V	-	-	0.39	V
		$I_{O} = 2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$	-	-	0.36	V
		I <sub>O</sub> = 3.1 mA; V <sub>CC</sub> = 2.3 V	-	-	0.50	V
		$I_{O} = 2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.36	V
		I <sub>O</sub> = 4.0 mA; V <sub>CC</sub> = 3.0 V	-	-	0.50	V
I	input leakage current	$V_I = GND$ to 3.6 V; $V_{CC} = 0$ V to 3.6 V	-	-	±0.75	μA
OFF	power-off leakage current	$V_{I}$ or $V_{O}$ = 0 V to 3.6 V; $V_{CC}$ = 0 V	-	-	±0.75	μA
Al <sub>OFF</sub>	additional power-off leakage current		-	-	±0.75	μA
сс	supply current	$\label{eq:VI} \begin{array}{l} V_{I} = GND \text{ or } V_{CC}; \ I_{O} = 0 \ A; \\ V_{CC} = 0.8 \ V \ to \ 3.6 \ V \end{array}$	-	-	1.4	μA
∆I <sub>CC</sub>	additional supply current	$V_{I} = V_{CC} - 0.6 \text{ V}; I_{O} = 0 \text{ A};$ $V_{CC} = 3.3 \text{ V}$	-	-	75	μA

#### Table 7. Static characteristics ...continued

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

## **11. Dynamic characteristics**

#### Table 8. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit, see Figure 9.

Symbol	Parameter	Conditions		25 °C		–40 °C to +125 °C			
			Min	Typ[1]	Max	Min	Max (85 °C)	Max (125 °C)	
C <sub>L</sub> = 5 p	F								
t <sub>pd</sub>	propagation delay	nA to nY; see Figure 8 [2]							
		V <sub>CC</sub> = 0.8 V	-	14.9	-	-	-	-	ns
		V <sub>CC</sub> = 1.1 V to 1.3 V	2.6	4.7	9.2	2.0	10.0	11.0	ns
		V <sub>CC</sub> = 1.4 V to 1.6 V	2.1	3.4	5.7	1.6	6.5	7.2	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	1.8	2.9	4.5	1.4	5.2	5.8	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	1.5	2.3	3.5	1.2	4.2	4.6	ns
		V <sub>CC</sub> = 3.0 V to 3.6 V	1.4	2.1	3.2	1.0	3.8	4.2	ns
C <sub>L</sub> = 10	pF								
t <sub>pd</sub>	propagation delay	nA to nY; see Figure 8 [2]							
		V <sub>CC</sub> = 0.8 V	-	18.4	-	-	-	-	ns
		V <sub>CC</sub> = 1.1 V to 1.3 V	3.2	5.6	10.9	2.3	11.8	13.1	ns
		V <sub>CC</sub> = 1.4 V to 1.6 V	2.6	4.1	6.7	1.9	7.7	8.5	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	2.3	3.4	5.3	1.7	6.2	6.9	ns
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	2.0	2.9	4.2	1.5	5.0	5.5	ns
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	1.7	2.6	3.8	1.4	4.6	5.1	ns
C <sub>L</sub> = 15	pF								
t <sub>pd</sub>	propagation delay	nA to nY; see Figure 8 [2]							
		V <sub>CC</sub> = 0.8 V	-	21.9	-	-	-	-	ns
		V <sub>CC</sub> = 1.1 V to 1.3 V	3.6	6.4	12.6	2.6	13.8	15.2	ns
		V <sub>CC</sub> = 1.4 V to 1.6 V	3.0	4.6	7.6	2.2	8.9	9.8	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	2.6	3.9	6.0	2.0	7.2	7.9	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	2.3	3.3	4.8	1.8	5.7	6.3	ns
		V <sub>CC</sub> = 3.0 V to 3.6 V	2.1	3.1	4.2	1.6	5.0	5.5	ns
C <sub>L</sub> = 30	pF								
t <sub>pd</sub>	propagation delay	nA to nY; see Figure 8 [2]							
		V <sub>CC</sub> = 0.8 V	-	32.1	-	-	-	-	ns
		V <sub>CC</sub> = 1.1 V to 1.3 V	4.8	8.7	16.3	3.6	18.9	20.8	ns
		V <sub>CC</sub> = 1.4 V to 1.6 V	4.0	6.2	10.3	3.4	12.2	13.4	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	3.6	5.2	8.1	3.2	9.8	10.8	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	3.0	4.4	6.4	2.7	7.7	8.5	ns
		V <sub>CC</sub> = 3.0 V to 3.6 V	2.9	4.2	5.6	2.5	6.5	7.2	ns

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#### Table 8. Dynamic characteristics ... continued

Voltages are referenced to GND (ground = 0 V); for test circuit, see <u>Figure 9</u>.

Symbol	Parameter	Conditions	25 °C			–40 °C to +125 °C			Unit
			Min	Typ[1]	Max	Min	Max (85 °C)	Max (125 °C)	
C <sub>L</sub> = 5 pl	F, 10 pF, 15 pF and	30 pF							_
C <sub>PD</sub> power dissipation	power dissipation	$f_i = 1 \text{ MHz}; V_i = \text{GND to } V_{\text{CC}}$ [3][4]							
	capacitance	$V_{CC} = 0.8 V$	-	2.5	-	-	-	-	pF
		V <sub>CC</sub> = 1.1 V to 1.3 V	-	2.6	-	-	-	-	pF
		V <sub>CC</sub> = 1.4 V to 1.6 V	-	2.7	-	-	-	-	pF
		V <sub>CC</sub> = 1.65 V to 1.95 V	-	2.9	-	-	-	-	pF
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	-	3.4	-	-	-	-	pF
		V <sub>CC</sub> = 3.0 V to 3.6 V	-	4.0	-	-	-	-	pF

[1] All typical values are measured at nominal V<sub>CC</sub>.

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

[3] All specified values are the average typical values over all stated loads.

[4]  $C_{PD}$  is used to determine the dynamic power dissipation ( $P_D$  in  $\mu W$ ).

 $P_{D} = C_{PD} \times V_{CC}^{2} \times f_{i} \times N + \Sigma (C_{L} \times V_{CC}^{2} \times f_{o}) \text{ where:}$ 

 $f_i$  = input frequency in MHz;

 $f_o = output frequency in MHz;$ 

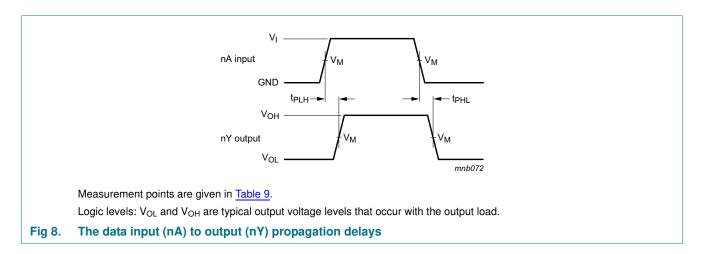
 $C_L$  = load capacitance in pF;

 $V_{CC}$  = supply voltage in V;

N = number of inputs switching;

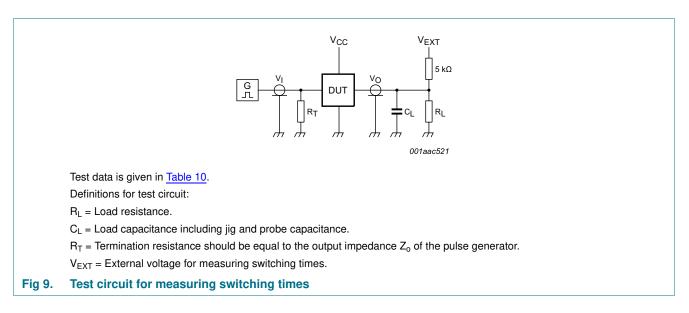
 $\Sigma(C_L \times V_{CC}^2 \times f_o)$  = sum of the outputs.

## 12. Waveforms



#### Table 9. Measurement points

Supply voltage	Output	Input		
V <sub>CC</sub>	V <sub>M</sub>	V <sub>M</sub>	VI	$t_r = t_f$
0.8 V to 3.6 V	0.5V <sub>CC</sub>	0.5V <sub>CC</sub>	V <sub>CC</sub>	≤ 3.0 ns

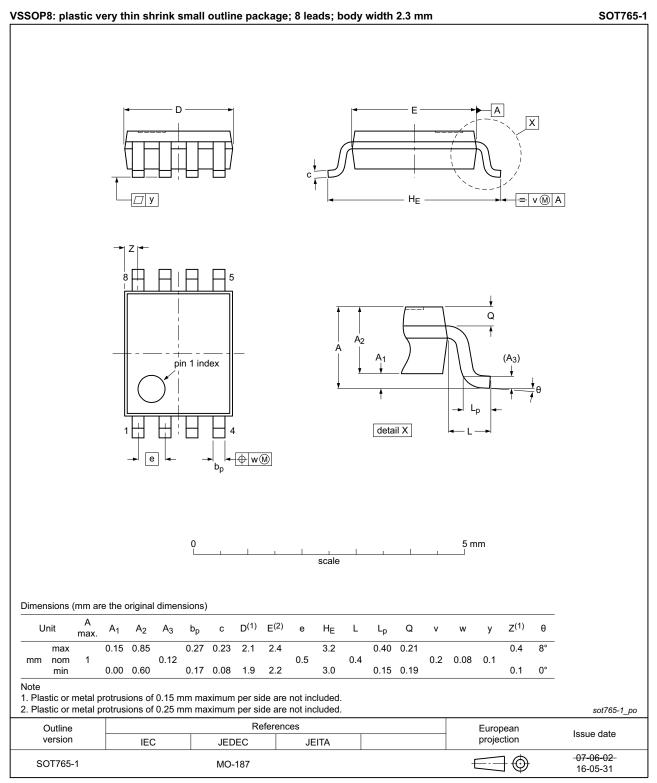


#### Table 10. Test data

Supply voltage	Load		V <sub>EXT</sub>		
V <sub>cc</sub>	CL	RL <sup>[1]</sup>	t <sub>PLH</sub> , t <sub>PHL</sub>	t <sub>PZH</sub> , t <sub>PHZ</sub>	t <sub>PZL</sub> , t <sub>PLZ</sub>
0.8 V to 3.6 V	5 pF, 10 pF, 15 pF, and 30 pF	5 kΩ or 1 MΩ	open	GND	2V <sub>CC</sub>

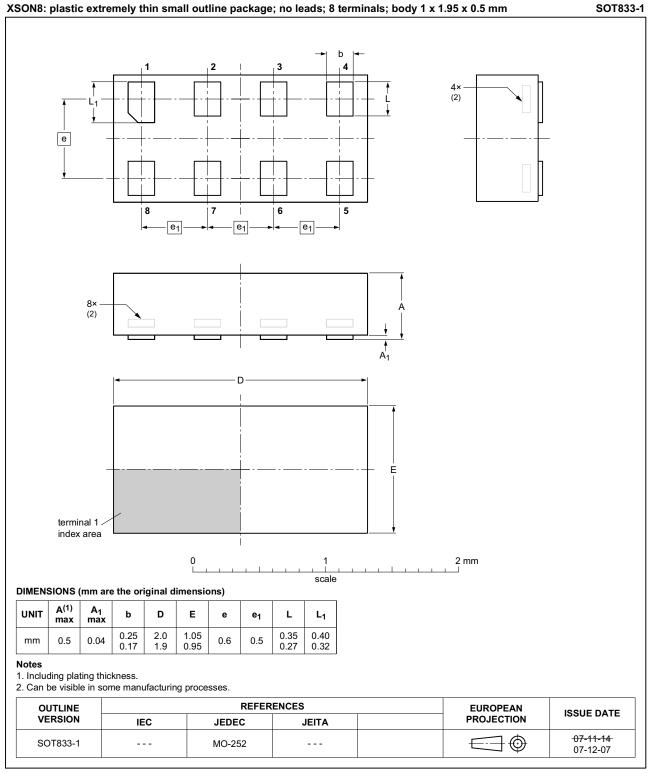
[1] For measuring enable and disable times  $R_L = 5 \text{ k}\Omega$ ., for measuring propagation delays, setup and hold times and pulse width  $R_L = 1 \text{ M}\Omega$ .

## 13. Package outline



#### Fig 10. Package outline SOT765-1 (VSSOP8)

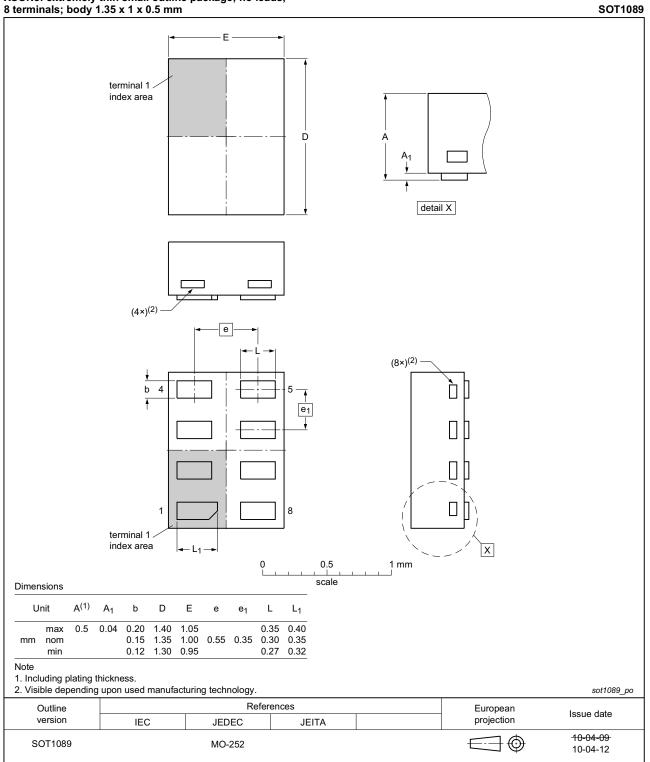
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XSON8: plastic extremely thin small outline package; no leads; 8 terminals; body 1 x 1.95 x 0.5 mm

Fig 11. Package outline SOT833-1 (XSON8)

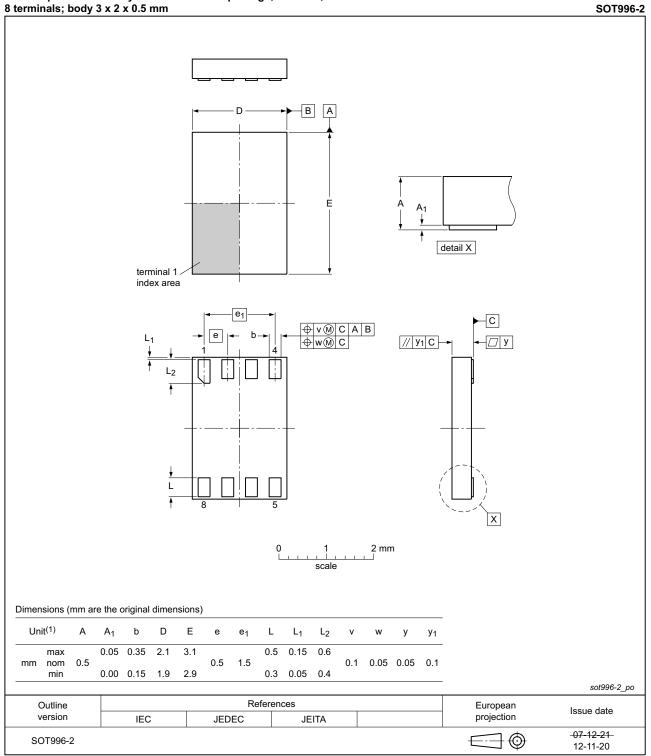
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XSON8: extremely thin small outline package; no leads; 8 terminals; body 1.35 x 1 x 0.5 mm

#### Fig 12. Package outline SOT1089 (XSON8)

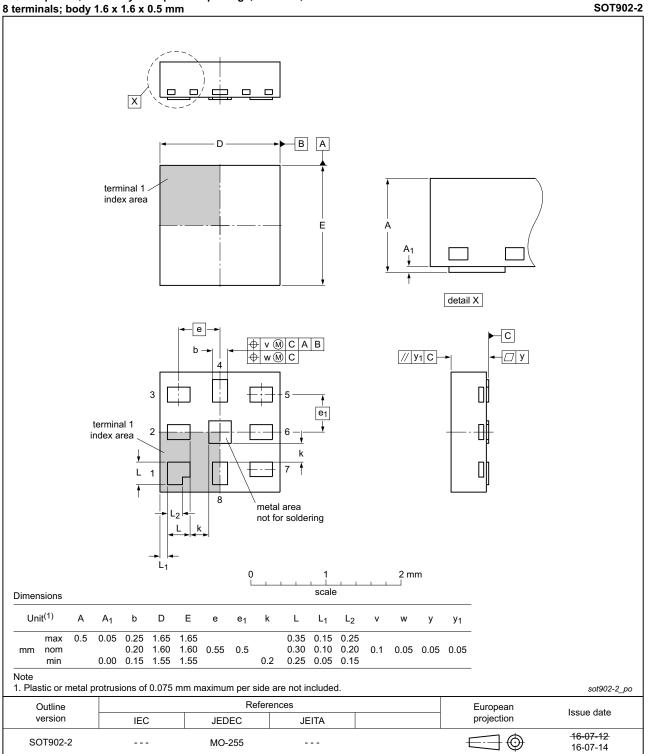
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XSON8: plastic extremely thin small outline package; no leads; 8 terminals: body 3 x 2 x 0.5 mm

Fig 13. Package outline SOT996-2 (XSON8)

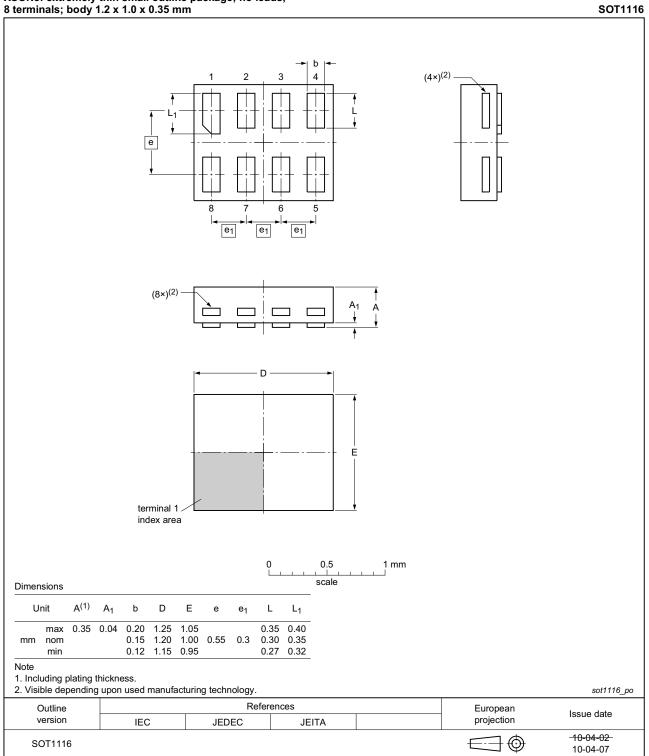
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XQFN8: plastic, extremely thin quad flat package; no leads; 8 terminals; body 1.6 x 1.6 x 0.5 mm

#### Fig 14. Package outline SOT902-2 (XQFN8)

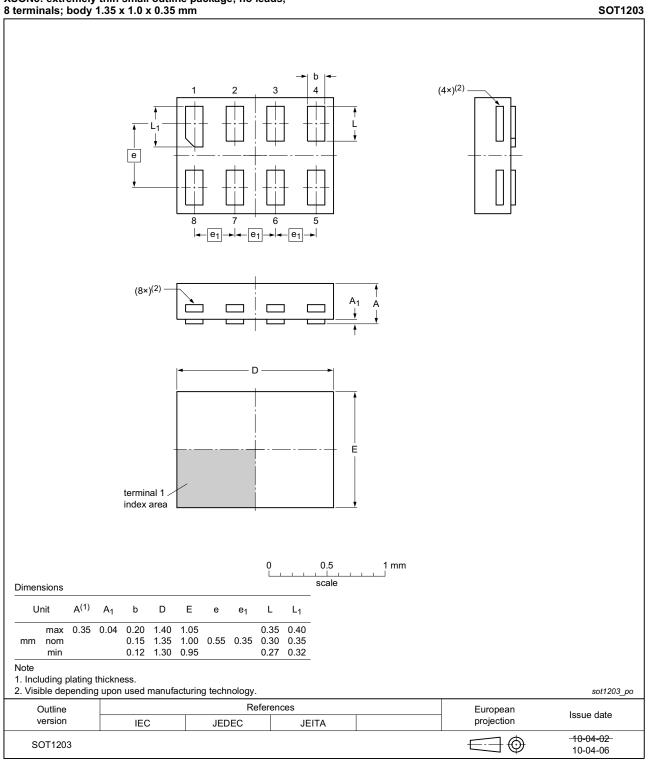
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# XSON8: extremely thin small outline package; no leads; 8 terminals; body 1.2 x 1.0 x 0.35 mm

Fig 15. Package outline SOT1116 (XSON8)

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# XSON8: extremely thin small outline package; no leads; 8 terminals; body 1.35 x 1.0 x 0.35 mm

Fig 16. Package outline SOT1203 (XSON8)

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## 14. Abbreviations

Table 11. Abbreviations			
Acronym	Description		
CDM	Charged Device Model		
DUT	Device Under Test		
ESD	ElectroStatic Discharge		
НВМ	Human Body Model		
MM	Machine Model		

## **15. Revision history**

#### Table 12.Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AUP3G34 v.2	20161011	Product data sheet	-	74AUP3G34 v.1
Modifications:	Type numbers	s 74AUP3G34DP removed.		
74AUP3G34 v.1	20141218	Product data sheet	-	-

## 16. Legal information

### 16.1 Data sheet status

Document status[1][2]	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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Product data sheet

Rev. 2 — 11 October 2016

#### **Nexperia**

# 74AUP3G34

#### Low-power triple buffer

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