Low-power single buffer; single buffer with open-drainRev. 1 — 18 October 2013Product de

Product data sheet

General description 1.

The 74AUP2G3407 is a single buffer and a single buffer with open-drain output. It features two input pins (nA), an output pin (1Y) and an open-drain output pin (2Y).

Schmitt trigger action at all inputs makes the circuit tolerant of slower input rise and fall times across the entire V_{CC} range from 0.8 V to 3.6 V.

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 the damaging backflow current through the device when it is powered down.

Features and benefits 2.

- 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 μA (maximum)
- Latch-up performance exceeds 100 mA per JESD 78 Class II
- Inputs accept voltages up to 3.6 V
- Low noise overshoot and undershoot < 10 % of V_{CC}
- I_{OFF} circuitry provides partial power-down mode operation
- Multiple package options
- Specified from -40 °C to +85 °C and -40 °C to +125 °C



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Ordering information 3.

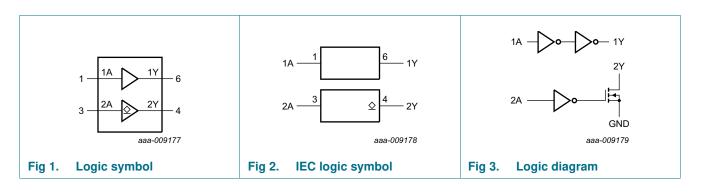
Table 1. Ordering info	rmation							
Type number	Package	Package						
	Temperature range Name Description		Description	Version				
74AUP2G3407GW	–40 °C to +125 °C	SC-88	plastic surface-mounted package; 6 leads	SOT363				
74AUP2G3407GM	–40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 \times 1.45 \times 0.5 mm	SOT886				
74AUP2G3407GF	–40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body $1 \times 1 \times 0.5$ mm	SOT891				
74AUP2G3407GN	–40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 0.9 \times 1.0 \times 0.35 mm	SOT1115				
74AUP2G3407GS	–40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body $1.0\times1.0\times0.35$ mm	SOT1202				

Marking 4.

Table 2. Marking	
Type number	Marking code ^[1]
74AUP2G3407GW	aJ
74AUP2G3407GM	aJ
74AUP2G3407GF	aJ
74AUP2G3407GN	aJ
74AUP2G3407GS	aJ

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

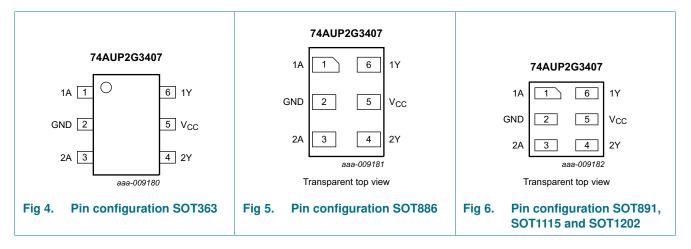
Functional diagram 5.



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6. Pinning information

6.1 Pinning



6.2 Pin description

Table 3.	Pin description	
Symbol	Pin	Description
1A	1	data input
GND	2	ground (0 V)
2A	3	data input
2Y	4	data output (open-drain)
V _{CC}	5	supply voltage
1Y	6	data output

7. Functional description

Table 4.	Function table ^[1]	
Input		Output
1 A		1Y
L		L
Н		Н

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

Table 5.Function table

Input	Output
2A	2Y
L	L
Н	Z

[1] H = HIGH voltage level; L = LOW voltage level; Z = high-impedance OFF state.

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8. Limiting values

Table 6. 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	+4.6	V
I _{IK}	input clamping current	V _I < 0 V	-50	-	mA
VI	input voltage		<u>1</u> –0.5	+4.6	V
I _{OK}	output clamping current	V _O < 0 V	-50	-	mA
Vo	output voltage	Active mode and Power-down mode	<u>1</u> –0.5	+4.6	V
lo	output current	$V_{\rm O} = 0$ V to $V_{\rm CC}$			
		1Y	-	±20	mA
		2Y	-	+20	mA
I _{CC}	supply current		-	50	mA
I _{GND}	ground current		-50	-	mA
T _{stg}	storage temperature		-65	+150	°C
P _{tot}	total power dissipation	$T_{amb} = -40 \ ^{\circ}C \ to \ +125 \ ^{\circ}C$	[2] _	250	mW

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

[2] For SC-88 packages: above 87.5 °C the value of P_{tot} derates linearly with 4.0 mW/K. For XSON6 packages: above 118 °C the value of P_{tot} derates linearly with 7.8 mW/K.

9. Recommended operating conditions

Table 7. Recommended operating conditions

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

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10. Static characteristics

Table 8. Static characteristics

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

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
T _{amb} = 2	5 °C					
V _{IH}	HIGH-level input voltage	$V_{CC} = 0.8 V$	$0.70 \times V_{CC}$	-	-	V
		$V_{CC} = 0.9 V$ to 1.95 V	$0.65 \times V_{CC}$	-	-	V
		V_{CC} = 2.3 V to 2.7 V	1.6	-	-	V
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	2.0	-	-	V
V _{IL}	LOW-level input voltage	$V_{CC} = 0.8 V$	-	-	$0.30 \times V_{CC}$	V
		$V_{CC} = 0.9 V$ to 1.95 V	-	-	$0.35 \times V_{CC}$	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 _{OH}	HIGH-level output voltage	1Y; $V_I = V_{IH}$ or V_{IL}				
		I_{O} = –20 $\mu A;$ V_{CC} = 0.8 V to 3.6 V	$V_{CC}-0.1$	-	-	V
		$I_{O} = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	$0.75\times V_{CC}$	-	-	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 _{OL}	LOW-level output voltage	1Y, 2Y; $V_I = V_{IH}$ or V_{IL}				
		I_O = 20 μ A; V_{CC} = 0.8 V to 3.6 V	-	-	0.1	V
		I _O = 1.1 mA; V _{CC} = 1.1 V	-	-	$0.3\times V_{CC}$	V
		$I_{O} = 1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	-	-	0.31	V
		I _O = 1.9 mA; V _{CC} = 1.65 V	-	-	0.31	V
		$I_{O} = 2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$	-	-	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
		$I_{O} = 4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.44	V
I _I	input leakage current	$V_I = GND$ to 3.6 V; $V_{CC} = 0$ V to 3.6 V	-	-	±0.1	μA
I _{OFF}	power-off leakage current	V_1 or $V_0 = 0$ V to 3.6 V; $V_{CC} = 0$ V	-	-	±0.2	μA
ΔI_{OFF}	additional power-off leakage current	V_1 or $V_O = 0$ V to 3.6 V; $V_{CC} = 0$ V to 0.2 V	-	-	±0.2	μA
I _{CC}	supply current	$\label{eq:VI} \begin{array}{l} V_{I} = GND \text{ or } V_{CC}; \ I_{O} = 0 \ A; \\ V_{CC} = 0.8 \ V \text{ to } 3.6 \ V \end{array}$	-	-	0.5	μA
Δl _{CC}	additional supply current		-	-	40	μA
Cı	input capacitance	$V_{CC} = 0$ V to 3.6 V; $V_I = GND$ or V_{CC}	-	0.8	-	pF

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Symbol	Parameter	Conditions	Min	Тур	Max	Unit
Co	output capacitance	$V_O = GND; V_{CC} = 0 V$				
		2Y output; enabled	-	1.7	-	pF
		2Y output; disabled	-	1.1	-	pF
		1Y output	-	1.7	-	pF
T _{amb} = –	40 °C to +85 °C					
V _{IH}	HIGH-level input voltage	$V_{CC} = 0.8 V$	$0.70 \times V_{\text{CC}}$	-	-	V
		$V_{CC} = 0.9 V$ to 1.95 V	$0.65 \times V_{CC}$	-	-	V
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	1.6	-	-	V
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	2.0	-	-	V
/ _{IL}	LOW-level input voltage	$V_{CC} = 0.8 V$	-	-	$0.30\times V_{CC}$	V
		V _{CC} = 0.9 V to 1.95 V	-	-	$0.35 \times V_{CC}$	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
/ _{он}	HIGH-level output voltage	1Y; $V_I = V_{IH}$ or V_{IL}				
		I_{O} = -20 μ A; V_{CC} = 0.8 V to 3.6 V	$V_{CC} - 0.1$	-	-	٧
		$I_{O} = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	$0.7 \times V_{CC}$	-	-	٧
		$I_{O} = -1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	1.03	-	-	٧
		I _O = −1.9 mA; V _{CC} = 1.65 V	1.30	-	-	٧
		$I_{O} = -2.3 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.97	-	-	٧
		$I_{O} = -3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$	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
/ _{OL}	LOW-level output voltage	1Y, 2Y; $V_{I} = V_{IH}$ or V_{IL}				
-		$I_{O} = 20 \ \mu A$; $V_{CC} = 0.8 \ V$ to 3.6 V	-	-	0.1	V
		I _O = 1.1 mA; V _{CC} = 1.1 V	-	-	$0.3 \times V_{CC}$	V
		I _O = 1.7 mA; V _{CC} = 1.4 V	-	-	0.37	V
		l _O = 1.9 mA; V _{CC} = 1.65 V	-	-	0.35	V
		I _O = 2.3 mA; V _{CC} = 2.3 V	-	-	0.33	V
		I _O = 3.1 mA; V _{CC} = 2.3 V	-	-	0.45	V
		$I_0 = 2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	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	$V_{\rm I}$ or $V_{\rm O} = 0$ V to 3.6 V; $V_{\rm CC} = 0$ V	-	-	±0.5	μA
	additional power-off leakage current	$V_{I} \text{ or } V_{O} = 0 \text{ V to } 3.6 \text{ V};$ $V_{CC} = 0 \text{ V to } 0.2 \text{ V}$	-	-	±0.6	μ Α
СС	supply current	$\label{eq:VI} \begin{array}{l} V_{I} = GND \text{ or } V_{CC}; \ I_{O} = O \ A; \\ V_{CC} = 0.8 \ V \ to \ 3.6 \ V \end{array}$	-	-	0.9	μA
7I ^{CC}	additional supply current		-	-	50	μA

Table 8. Static characteristics ... continued

Low-power single buffer; single buffer with open-drain

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
T _{amb} = –	40 °C to +125 °C					
/ _{IH}	HIGH-level input voltage	$V_{CC} = 0.8 V$	$0.75 \times V_{CC}$	-	-	V
		$V_{CC} = 0.9 V$ to 1.95 V	$0.70 \times V_{CC}$	-	-	V
		V_{CC} = 2.3 V to 2.7 V	1.6	-	-	V
		$V_{CC} = 3.0 V \text{ to } 3.6 V$	2.0	-	-	V
V _{IL}	LOW-level input voltage	$V_{CC} = 0.8 V$	-	-	$0.25\times V_{CC}$	V
		$V_{CC} = 0.9 V$ to 1.95 V	-	-	$0.30\times V_{CC}$	V
		V_{CC} = 2.3 V to 2.7 V	-	-	0.7	V
		$V_{CC} = 3.0 V \text{ to } 3.6 V$	-	-	0.9	V
/ _{ОН}	HIGH-level output voltage	1Y; $V_I = V_{IH}$ or V_{IL}				
		I_O = –20 $\mu A; V_{CC}$ = 0.8 V to 3.6 V	$V_{CC} - 0.11$	-	-	V
		$I_{O} = -1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	$0.6 \times V_{CC}$	-	-	٧
		$I_{O} = -1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	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
/ _{OL}	LOW-level output voltage	1Y, 2Y; $V_I = V_{IH}$ or V_{IL}				
		I_O = 20 $\mu A;V_{CC}$ = 0.8 V to 3.6 V	-	-	0.11	V
		$I_{O} = 1.1 \text{ mA}; V_{CC} = 1.1 \text{ V}$	-	-	$0.33 \times V_{CC}$	V
		$I_{O} = 1.7 \text{ mA}; V_{CC} = 1.4 \text{ V}$	-	-	0.41	V
		$I_{O} = 1.9 \text{ mA}; V_{CC} = 1.65 \text{ V}$	-	-	0.39	V
		I_{O} = 2.3 mA; V_{CC} = 2.3 V	-	-	0.36	V
		$I_{O} = 3.1 \text{ mA}; V_{CC} = 2.3 \text{ V}$	-	-	0.50	V
		$I_{O} = 2.7 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.36	V
		$I_{O} = 4.0 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.50	V
I	input leakage current	$V_{\rm I}$ = GND to 3.6 V; $V_{\rm CC}$ = 0 V to 3.6 V	-	-	±0.75	μA
OFF	power-off leakage current	$V_{I} \text{ or } V_{O}$ = 0 V to 3.6 V; V_{CC} = 0 V	-	-	±0.75	μA
VI _{OFF}	additional power-off leakage current	V_1 or $V_0 = 0$ V to 3.6 V; $V_{CC} = 0$ V to 0.2 V	-	-	±0.75	μA
сс	supply current	$\label{eq:VI} \begin{array}{l} V_{I} = GND \text{ or } V_{CC}; \ I_{O} = 0 \ \text{A}; \\ V_{CC} = 0.8 \ \text{V to } 3.6 \ \text{V} \end{array}$	-	-	1.4	μA
VI _{CC}	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 8. Static characteristics ... continued

Low-power single buffer; single buffer with open-drain

11. Dynamic characteristics

Table 9. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit, see Figure 8.

Symbol	Parameter	Conditions		25 °C		–40 °C to +125 °C			Unit
			Min	Typ[1]	Max	Min	Max (85 °C)	Max (125 °C)	
C _L = 5 p	F								
t _{pd}	propagation	1A to 1Y or 2A to 2Y; see Figure 7	[2]						
	delay	$V_{CC} = 0.8 V$	-	13.3	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	2.1	4.4	9.2	1.7	10.0	11.0	ns
		V _{CC} = 1.4 V to 1.6 V	1.6	3.2	5.7	1.3	6.5	7.2	ns
		V _{CC} = 1.65 V to 1.95 V	1.6	2.8	4.5	1.2	5.2	5.8	ns
		$V_{CC} = 2.3 \text{ V} \text{ to } 2.7 \text{ V}$	1.1	2.2	3.5	0.9	4.2	4.6	ns
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	1.4	2.1	3.2	1.0	3.8	4.2	ns
C _L = 10	pF								
t _{pd}	propagation	1A to 1Y or 2A to 2Y; see Figure 7	[2]						
	delay	$V_{CC} = 0.8 V$	-	16.6	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	3.0	5.4	10.9	2.3	11.8	13.1	ns
		V _{CC} = 1.4 V to 1.6 V	2.3	3.9	6.7	1.9	7.7	8.5	ns
		V _{CC} = 1.65 V to 1.95 V	2.3	3.5	5.3	1.7	6.2	6.9	ns
		$V_{CC} = 2.3 \text{ V} \text{ to } 2.7 \text{ V}$	1.7	2.8	4.2	1.3	5.0	5.5	ns
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	1.7	2.9	4.2	1.4	4.6	5.1	ns
C _L = 15	pF								
t _{pd}	propagation	1A to 1Y or 2A to 2Y; see Figure 7	[2]						
	delay	$V_{CC} = 0.8 V$	-	19.8	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	3.5	6.3	12.6	2.6	13.8	15.2	ns
		V _{CC} = 1.4 V to 1.6 V	3.0	4.6	7.6	2.2	8.9	9.8	ns
		V _{CC} = 1.65 V to 1.95 V	2.6	4.1	6.7	2.0	7.8	8.6	ns
		$V_{CC} = 2.3 \text{ V} \text{ to } 2.7 \text{ V}$	2.3	3.4	4.8	1.8	5.7	6.3	ns
		$V_{CC} = 3.0 \text{ V} \text{ to } 3.6 \text{ V}$	2.1	3.5	5.7	1.6	6.1	6.7	ns
C _L = 30	pF								
t _{pd}	propagation	1A to 1Y or 2A to 2Y; see Figure 7	[2]						
	delay	$V_{CC} = 0.8 V$	-	28.4	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	4.8	8.9	16.3	3.6	18.9	20.8	ns
		$V_{CC} = 1.4 \text{ V} \text{ to } 1.6 \text{ V}$	4.0	6.4	10.3	3.4	12.2	13.4	ns
		V _{CC} = 1.65 V to 1.95 V	3.6	6.0	9.7	3.2	11.0	12.1	ns
		$V_{CC} = 2.3 \text{ V} \text{ to } 2.7 \text{ V}$	3.0	4.8	6.7	2.7	7.7	8.5	ns
		$V_{CC} = 3.0 V \text{ to } 3.6 V$	2.9	5.3	9.7	2.5	10.4	11.4	ns

Low-power single buffer; single buffer with open-drain

Table 9. Dynamic characteristics ...continued

Voltages are referenced to GND (ground = 0 V); for test circuit, see Figure 8.

Symbol	Parameter	Conditions		25 °C) °C to +1	25 °C	Unit
			Min	Typ[1]	Мах	Min	Max (85 °C)	Max (125 °C)	
C _L = 5 p	F, 10 pF, 15 p	F and 30 pF							
C _{PD}	power	1A to 1Y; $f_i=1$ MHz; $V_1 = GND$ to V_{CC} [3][4]							
	dissipation	V _{CC} = 0.8 V	-	2.5	-	-	-	-	pF
	capacitance	V _{CC} = 1.1 V to 1.3 V	-	2.6	-	-	-	-	pF
		V _{CC} = 1.4 V to 1.6 V	-	2.7	-	-	-	-	pF
		V _{CC} = 1.65 V to 1.95 V	-	2.9	-	-	-	-	pF
		V _{CC} = 2.3 V to 2.7 V	-	3.4	-	-	-	-	pF
		V _{CC} = 3.0 V to 3.6 V	-	4.0	-	-	-	-	pF
		2A to 2Y; $f_i=1$ MHz; $V_1 = GND$ to V_{CC} [3][5]							
		V _{CC} = 0.8 V	-	0.5	-	-	-	-	pF
		V _{CC} = 1.1 V to 1.3 V	-	0.6	-	-	-	-	pF
		V _{CC} = 1.4 V to 1.6 V	-	0.6	-	-	-	-	pF
		V _{CC} = 1.65 V to 1.95 V	-	0.7	-	-	-	-	pF
		V _{CC} = 2.3 V to 2.7 V	-	0.9	-	-	-	-	pF
		V _{CC} = 3.0 V to 3.6 V	-	1.2	-	-	-	-	pF

- [1] All typical values are measured at nominal V_{CC} .
- [2] t_{pd} is the same as t_{PLH} and t_{PHL} (1A to 1Y) and t_{PLZ} and t_{PZL} (2A to 2Y).
- [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 μ W).

 $P_{D} = C_{PD} \times V_{CC}{}^2 \times f_i \times N$ where:

 f_i = input frequency in MHz;

 C_L = load capacitance in pF;

N = number of inputs switching;

[5] C_{PD} is used to determine the dynamic power dissipation (P_D in μ 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;

 $\Sigma(C_L \times V_{CC}^2 \times f_0)$ = sum of the outputs.

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12. Waveforms

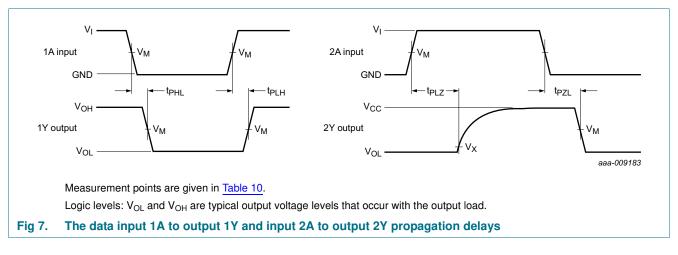


Table 10. Measurement points

Supply voltage	Output	Output		Input		
V _{CC}	V _M	V _X	V _M	Vi	$t_r = t_f$	
0.8 V to 1.6 V	$0.5\times V_{CC}$	VOL + 0.1 V	$0.5\times V_{CC}$	V _{CC}	\leq 3.0 ns	
1.65 V to 2.7 V	$0.5\times V_{CC}$	VOL + 0.15 V	$0.5\times V_{CC}$	V _{CC}	\leq 3.0 ns	
3.0 V to 3.6 V	$0.5\times V_{CC}$	VOL + 0.3 V	$0.5\times V_{CC}$	V _{CC}	\leq 3.0 ns	

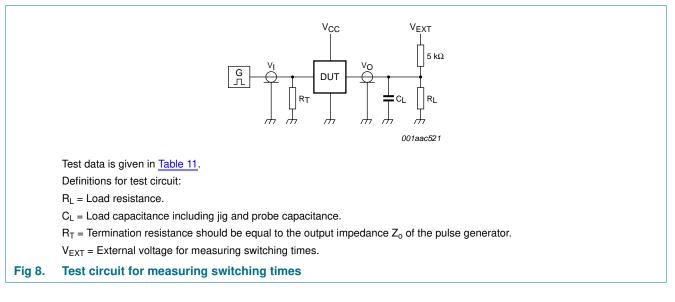


Table 11. Test data

Supply voltage	Load	V _{EXT}			
V _{cc}	CL	R _L [1]	t _{PLH} , t _{PHL}	t _{PZH} , t _{PHZ}	t _{PZL} , t _{PLZ}
0.8 V to 3.6 V	5 pF, 10 pF, 15 pF and 30 pF	5 k Ω or 1 M Ω	open	GND	$2 \times V_{CC}$

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

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13. Package outline

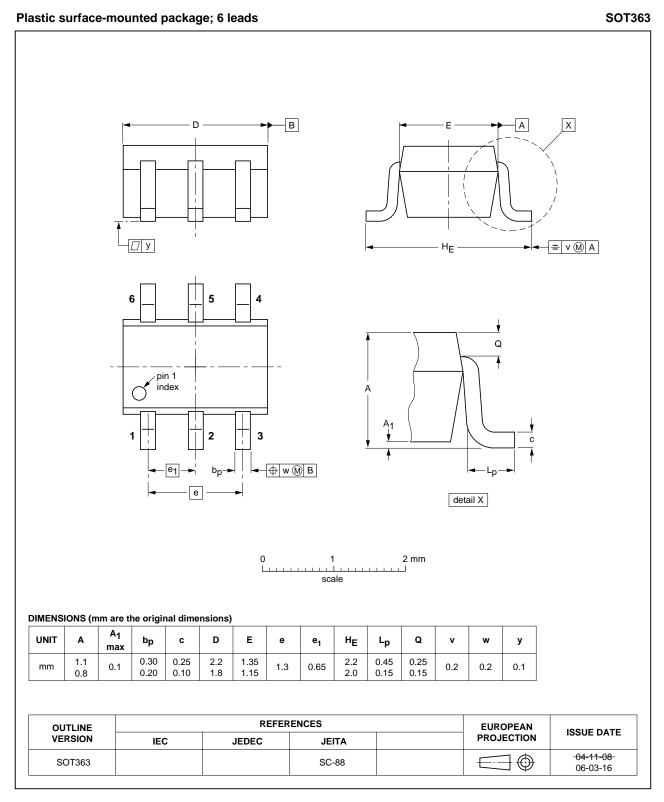


Fig 9. Package outline SOT363 (SC-88)

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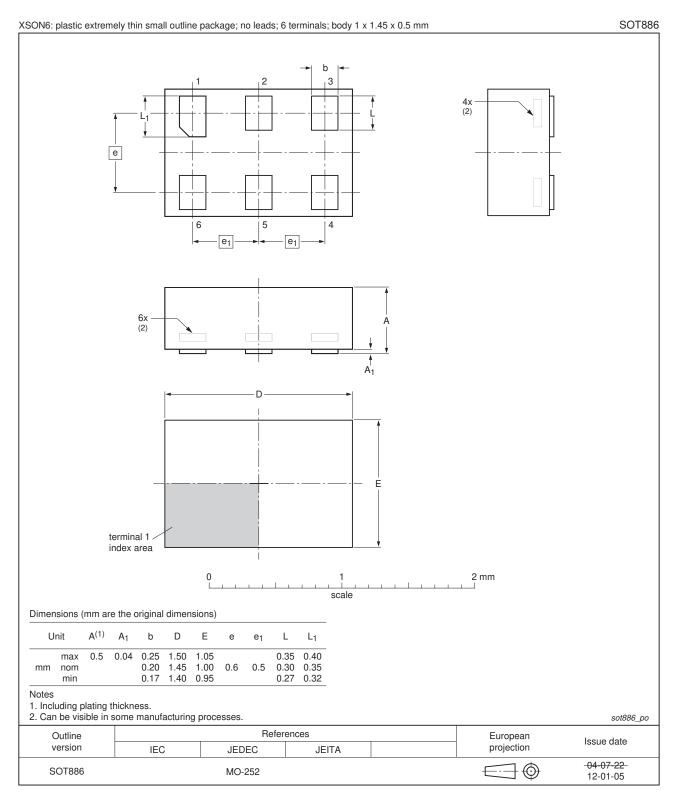


Fig 10. Package outline SOT886 (XSON6)

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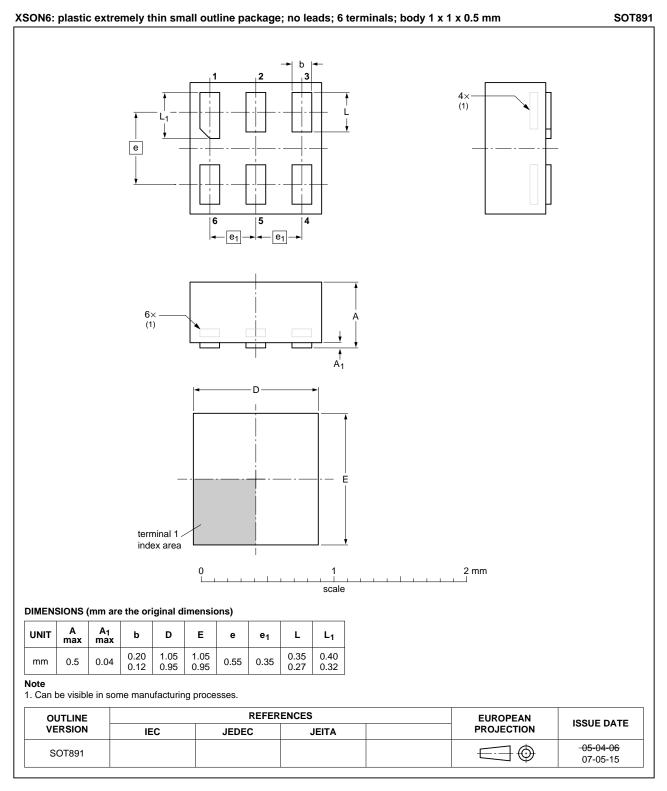
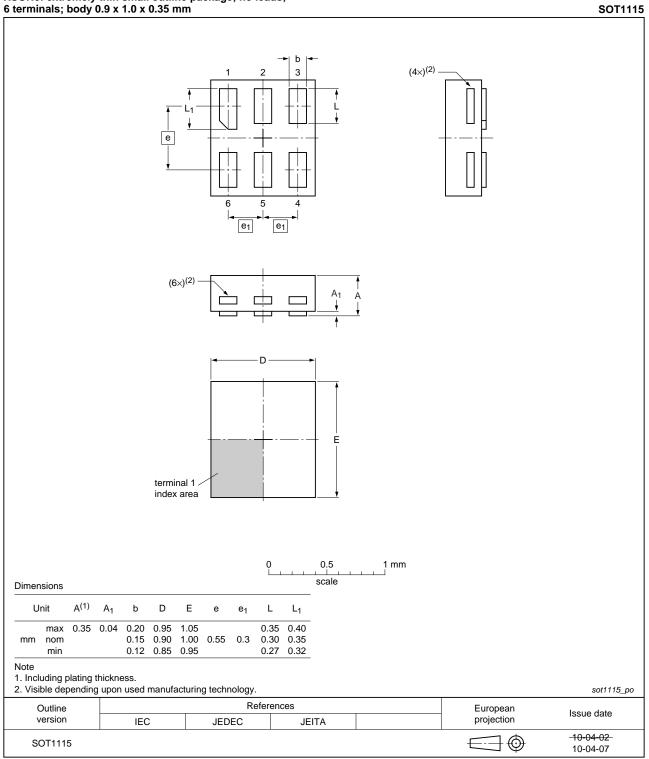


Fig 11. Package outline SOT891 (XSON6)

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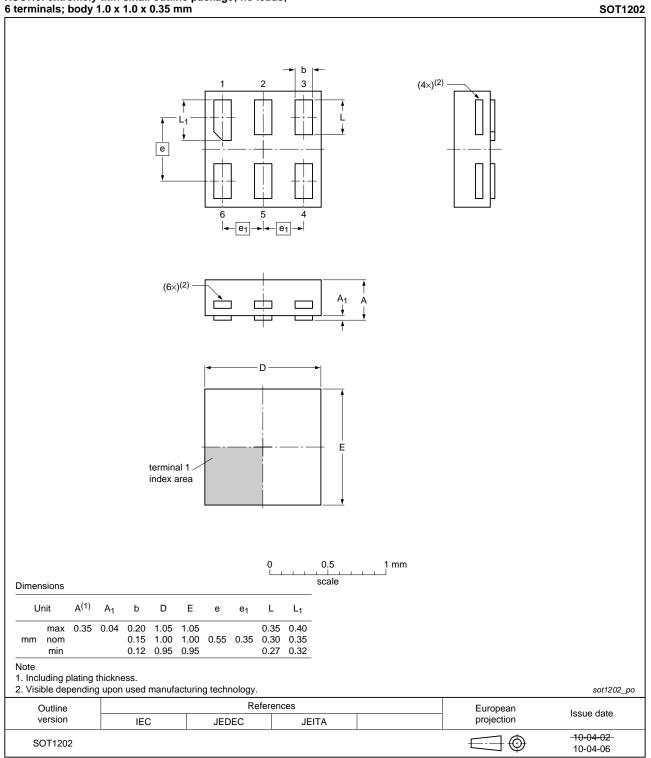


XSON6: extremely thin small outline package; no leads; 6 terminals; body 0.9 x 1.0 x 0.35 mm

Fig 12. Package outline SOT1115 (XSON6)

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XSON6: extremely thin small outline package; no leads; 6 terminals; body 1.0 x 1.0 x 0.35 mm

Fig 13. Package outline SOT1202 (XSON6)

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14. Abbreviations

AcronymDescriptionCDMCharged Device ModeDUTDevice Under TestESDElectroStatic DischargHBMHuman Body Model	Table 12. Abbreviations		
DUTDevice Under TestESDElectroStatic Discharg			
ESD ElectroStatic Discharg			
HBM Human Body Model			
MM Machine Model			

15. Revision history

Table 13. Revision histo	ory			
Document ID	Release date	Data sheet status	Change notice	Supersedes
74AUP2G3407 v.1	20131018	Product data sheet	-	-

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16. Legal information

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

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