74AUP1G58

Low-power configurable multiple function gate

1. General description

The 74AUP1G58 is a high-performance, low-power, low-voltage, Si-gate CMOS device, superior to most advanced CMOS compatible TTL families.

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.

The 74AUP1G58 provides configurable multiple functions. The output state is determined by eight patterns of 3-bit input. The user can choose the logic functions AND, OR, NAND, NOR, XOR, inverter and buffer. All inputs can be connected to V_{CC} or GND.

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

The inputs switch at different points for positive and negative-going signals. The difference between the positive voltage V_{T+} and the negative voltage V_{T-} is defined as the input hysteresis voltage V_H.

2. Features

- Wide supply voltage range from 0.8 V to 3.6 V
- High noise immunity
- ESD protection:
  - HBM JESD22-A114D Class 3A exceeds 5000 V
  - MM JESD22-A115-A exceeds 200 V
  - CDM JESD22-C101C 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

NXP
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3. Ordering information

Table 1. Ordering information

Type number	Package				
	Temperature range	Name	Description		Version
74AUP1G58GW	−40 °C to +125 °C	SC-88	plastic surface-mounted package; 6 leads		SOT363
74AUP1G58GM	−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
74AUP1G58GF	−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

4. Marking

Table 2. Marking

Type number	Marking code
74AUP1G58GW	aK
74AUP1G58GM	aK
74AUP1G58GF	aK

5. Functional diagram
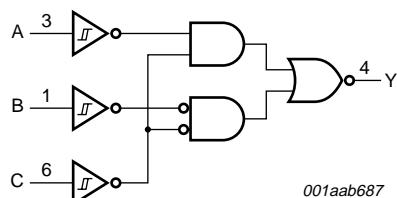
Fig 1. Logic symbol

6. Pinning information

6.1 Pinning

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Fig 2. Pin configuration SOT363 (SC-88)

001aad697

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Transparent top view

001aad698
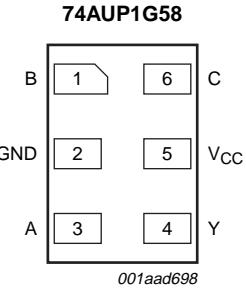
Fig 3. Pin configuration SOT886 (XSON6)

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Transparent top view

001aad690
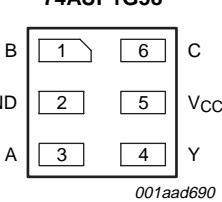
Fig 4. Pin configuration SOT891 (XSON6)

6.2 Pin description

Table 3. Pin description

Symbol	Pin	Description
B	1	data input B
GND	2	ground (0 V)
A	3	data input A
Y	4	data output Y
V_{CC}	5	supply voltage
C	6	data input C

7. Functional description

Table 4. Function table[1]

Input			Output
C	**B**	**A**	**Y**
L	L	L	L
L	L	H	H
L	H	L	L
L	H	H	H
H	L	L	H
H	L	H	H
H	H	L	L
H	H	H	L

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

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7.1 Logic configurations

Table 5.   Function selection table

Logic function	Figure
2-input NAND	see Figure 5
2-input NAND with both inputs inverted	see Figure 8
2-input AND with inverted input	see Figure 6 and Figure 7
2-input NOR with inverted input	see Figure 6 and Figure 7
2-input OR	see Figure 8
2-input OR with both inputs inverted	see Figure 5
2-input XOR	see Figure 9
Buffer	see Figure 10
Inverter	see Figure 11
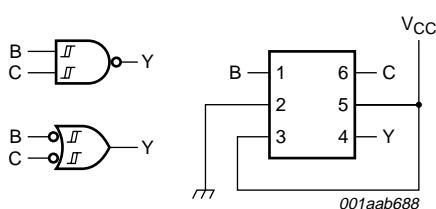
Fig 5.   2-input NAND gate or 2-input OR with both inputs inverted
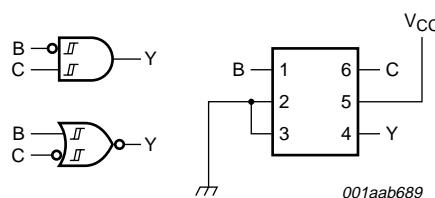
Fig 6.   2-input AND gate with inverted B input or 2-input NOR gate with inverted C input
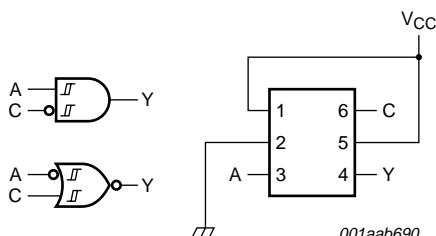
Fig 7.   2-input AND gate with inverted C input or 2-input NOR gate with inverted A input
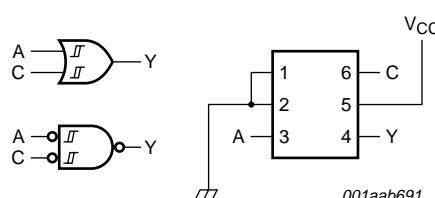
Fig 8.   2-input OR gate or 2-input NAND gate with both inputs inverted
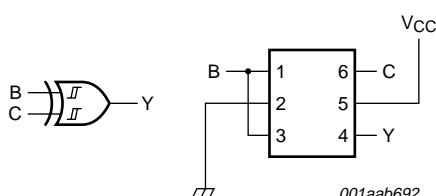
Fig 9.   2-input XOR gate

Fig 10. Buffer

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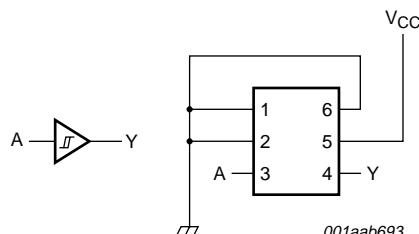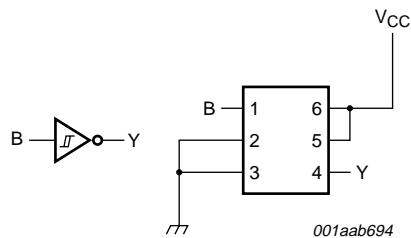
Fig 11. Inverter

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
V_I	input voltage		[1]	−0.5	+4.6	V
I_{OK}	output clamping current	$V_O > V_{CC}$ or $V_O < 0$ V		-	±50	mA
V_O	output voltage	Active mode and Power-down mode	[1]	−0.5	+4.6	V
I_O	output current	$V_O = 0$ V to V_{CC}		-	±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	$T_{amb} = -40$ °C to +125 °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 45 °C the value of P_{tot} derates linearly with 2.4 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
V_I	input voltage		0	3.6	V
V_O	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

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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	Typ	Max	Unit
T_{amb} = 25 °C						
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$ or V_{IL}				
		I_O = −20 μA; V_{CC} = 0.8 V to 3.6 V	V_{CC} − 0.1	-	-	V
		I_O = −1.1 mA; V_{CC} = 1.1 V	$0.75 \times V_{CC}$	-	-	V
		I_O = −1.7 mA; V_{CC} = 1.4 V	1.11	-	-	V
		I_O = −1.9 mA; V_{CC} = 1.65 V	1.32	-	-	V
		I_O = −2.3 mA; V_{CC} = 2.3 V	2.05	-	-	V
		I_O = −3.1 mA; V_{CC} = 2.3 V	1.9	-	-	V
		I_O = −2.7 mA; V_{CC} = 3.0 V	2.72	-	-	V
		I_O = −4.0 mA; V_{CC} = 3.0 V	2.6	-	-	V
V_{OL}	LOW-level output voltage	$V_I = V_{IH}$ or V_{IL}				
		I_O = 20 μA; 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	-	-	0.31	V
		I_O = 1.9 mA; V_{CC} = 1.65 V	-	-	0.31	V
		I_O = 2.3 mA; V_{CC} = 2.3 V	-	-	0.31	V
		I_O = 3.1 mA; V_{CC} = 2.3 V	-	-	0.44	V
		I_O = 2.7 mA; V_{CC} = 3.0 V	-	-	0.31	V
		I_O = 4.0 mA; V_{CC} = 3.0 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_I or V_O = 0 V to 3.6 V; V_{CC} = 0 V	-	-	±0.2	μA
ΔI_{OFF}	additional power-off leakage current	V_I or V_O = 0 V to 3.6 V; V_{CC} = 0 V to 0.2 V	-	-	±0.2	μA
I_{CC}	supply current	V_I = GND or V_{CC}; I_O = 0 A; V_{CC} = 0.8 V to 3.6 V	-	-	0.5	μA
ΔI_{CC}	additional supply current	$V_I = V_{CC}$ − 0.6 V; I_O = 0 A; V_{CC} = 3.3 V	-	-	40	μA
C_I	input capacitance	V_I = GND or V_{CC}; V_{CC} = 0 V to 3.6 V	-	1.1	-	pF
C_O	output capacitance	V_O = GND; V_{CC} = 0 V	-	1.8	-	pF
T_{amb} = −40 °C to +85 °C						
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$ or V_{IL}				
		I_O = −20 μA; V_{CC} = 0.8 V to 3.6 V	V_{CC} − 0.1	-	-	V
		I_O = −1.1 mA; V_{CC} = 1.1 V	$0.7 \times V_{CC}$	-	-	V
		I_O = −1.7 mA; V_{CC} = 1.4 V	1.03	-	-	V
		I_O = −1.9 mA; V_{CC} = 1.65 V	1.30	-	-	V
		I_O = −2.3 mA; V_{CC} = 2.3 V	1.97	-	-	V
		I_O = −3.1 mA; V_{CC} = 2.3 V	1.85	-	-	V
		I_O = −2.7 mA; V_{CC} = 3.0 V	2.67	-	-	V
		I_O = −4.0 mA; V_{CC} = 3.0 V	2.55	-	-	V

Table 8. **Static characteristics** *…continued*
At recommended operating conditions; voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{OL}	LOW-level output voltage	$V_I = V_{IH}$ 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
		$I_O = 1.9$ 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
		$I_O = 2.7$ mA; $V_{CC} = 3.0$ V	-	-	0.33	V
		$I_O = 4.0$ mA; $V_{CC} = 3.0$ V	-	-	0.45	V
I_I	input leakage current	$V_I = GND$ to 3.6 V; $V_{CC} = 0$ V to 3.6 V	-	-	±0.5	μA
I_{OFF}	power-off leakage current	V_I or $V_O = 0$ V to 3.6 V; $V_{CC} = 0$ V	-	-	±0.5	μA
ΔI_{OFF}	additional power-off leakage current	V_I or $V_O = 0$ V to 3.6 V; $V_{CC} = 0$ V to 0.2 V	-	-	±0.6	μA
I_{CC}	supply current	$V_I = GND$ or V_{CC}; $I_O = 0$ A; $V_{CC} = 0.8$ V to 3.6 V	-	-	0.9	μA
ΔI_{CC}	additional supply current	$V_I = V_{CC} - 0.6$ V; $I_O = 0$ A; $V_{CC} = 3.3$ V	-	-	50	μA
$T_{amb} = -40\ °C$ to $+125\ °C$						
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$ or V_{IL}				
		$I_O = -20\ \mu A$; $V_{CC} = 0.8$ V to 3.6 V	$V_{CC} - 0.11$	-	-	V
		$I_O = -1.1$ mA; $V_{CC} = 1.1$ V	$0.6 \times V_{CC}$	-	-	V
		$I_O = -1.7$ mA; $V_{CC} = 1.4$ V	0.93	-	-	V
		$I_O = -1.9$ mA; $V_{CC} = 1.65$ V	1.17	-	-	V
		$I_O = -2.3$ mA; $V_{CC} = 2.3$ V	1.77	-	-	V
		$I_O = -3.1$ mA; $V_{CC} = 2.3$ V	1.67	-	-	V
		$I_O = -2.7$ mA; $V_{CC} = 3.0$ V	2.40	-	-	V
		$I_O = -4.0$ mA; $V_{CC} = 3.0$ V	2.30	-	-	V
V_{OL}	LOW-level output voltage	$V_I = V_{IH}$ or V_{IL}				
		$I_O = 20\ \mu A$; $V_{CC} = 0.8$ V to 3.6 V	-	-	0.11	V
		$I_O = 1.1$ mA; $V_{CC} = 1.1$ V	-	-	$0.33 \times V_{CC}$	V
		$I_O = 1.7$ mA; $V_{CC} = 1.4$ V	-	-	0.41	V
		$I_O = 1.9$ mA; $V_{CC} = 1.65$ V	-	-	0.39	V
		$I_O = 2.3$ mA; $V_{CC} = 2.3$ V	-	-	0.36	V
		$I_O = 3.1$ mA; $V_{CC} = 2.3$ V	-	-	0.50	V
		$I_O = 2.7$ mA; $V_{CC} = 3.0$ V	-	-	0.36	V
		$I_O = 4.0$ mA; $V_{CC} = 3.0$ V	-	-	0.50	V
I_I	input leakage current	$V_I = GND$ to 3.6 V; $V_{CC} = 0$ V to 3.6 V	-	-	±0.75	μA
I_{OFF}	power-off leakage current	V_I or $V_O = 0$ V to 3.6 V; $V_{CC} = 0$ V	-	-	±0.75	μA

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Table 8. **Static characteristics** *…continued*

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
ΔI_{OFF}	additional power-off leakage current	V_I or V_O = 0 V to 3.6 V; V_{CC} = 0 V to 0.2 V	-	-	±0.75	µA
I_{CC}	supply current	V_I = GND or V_{CC}; I_O = 0 A; V_{CC} = 0.8 V to 3.6 V	-	-	1.4	µA
ΔI_{CC}	additional supply current	V_I = V_{CC} − 0.6 V; I_O = 0 A; V_{CC} = 3.3 V	-	-	75	µA

11. Dynamic characteristics

Table 9. **Dynamic characteristics**

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 13.

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 pF									
t_{pd}	propagation delay	A, B and C to Y; see Figure 12 [2]							
		V_{CC} = 0.8 V	-	22.8	-	-	-	-	ns
		V_{CC} = 1.1 V to 1.3 V	2.8	6.6	12.9	2.6	13.1	13.3	ns
		V_{CC} = 1.4 V to 1.6 V	2.4	4.8	7.6	2.4	8.3	8.6	ns
		V_{CC} = 1.65 V to 1.95 V	2.1	4.0	6.3	2.0	6.9	7.3	ns
		V_{CC} = 2.3 V to 2.7 V	2.0	3.2	4.6	1.8	5.1	5.4	ns
		V_{CC} = 3.0 V to 3.6 V	1.9	2.9	3.9	1.6	4.2	4.4	ns
C_L = 10 pF									
t_{pd}	propagation delay	A, B and C to Y; see Figure 12 [2]							
		V_{CC} = 0.8 V	-	26.4	-	-	-	-	ns
		V_{CC} = 1.1 V to 1.3 V	3.2	7.4	14.5	3.0	14.9	15.2	ns
		V_{CC} = 1.4 V to 1.6 V	2.7	5.4	8.7	2.7	9.4	9.8	ns
		V_{CC} = 1.65 V to 1.95 V	2.5	4.5	7.1	2.3	7.9	8.3	ns
		V_{CC} = 2.3 V to 2.7 V	2.4	3.8	5.3	2.2	5.9	6.2	ns
		V_{CC} = 3.0 V to 3.6 V	2.3	3.5	4.6	1.9	4.9	5.1	ns
C_L = 15 pF									
t_{pd}	propagation delay	A, B and C to Y; see Figure 12 [2]							
		V_{CC} = 0.8 V	-	29.9	-	-	-	-	ns
		V_{CC} = 1.1 V to 1.3 V	3.6	8.3	16.1	3.3	16.7	17.0	ns
		V_{CC} = 1.4 V to 1.6 V	3.0	5.9	9.7	3.0	10.5	11.0	ns
		V_{CC} = 1.65 V to 1.95 V	2.8	5.0	7.9	2.5	8.7	9.2	ns
		V_{CC} = 2.3 V to 2.7 V	2.7	4.2	5.9	2.5	6.6	6.9	ns
		V_{CC} = 3.0 V to 3.6 V	2.5	3.9	5.2	2.2	5.5	5.8	ns

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Table 9.   Dynamic characteristics *…continued*
Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 13.

Symbol	Parameter	Conditions	25 °C			−40 °C to +125 °C			Unit
			Min	Typ[1]	Max	Min	Max (85 °C)	Max (125 °C)	
C_L = 30 pF									
t_{pd}	propagation delay	A, B and C to Y; see Figure 12 [2]							
		V_{CC} = 0.8 V	-	38.0	-	-	-	-	ns
		V_{CC} = 1.1 V to 1.3 V	4.5	10.5	20.8	4.1	21.9	24.1	ns
		V_{CC} = 1.4 V to 1.6 V	3.8	7.5	12.2	3.8	13.5	14.1	ns
		V_{CC} = 1.65 V to 1.95 V	3.4	6.3	10.0	3.1	11.2	11.9	ns
		V_{CC} = 2.3 V to 2.7 V	3.4	5.3	7.5	3.1	8.4	8.9	ns
		V_{CC} = 3.0 V to 3.6 V	3.3	5.0	6.6	2.9	7.1	7.4	ns
C_L = 5 pF, 10 pF, 15 pF and 30 pF									
C_{PD}	power dissipation capacitance	f_i = 1 MHz; V_I = GND to V_{CC} [3][4]							
		V_{CC} = 0.8 V	-	3.3	-	-	-	-	pF
		V_{CC} = 1.1 V to 1.3 V	-	3.5	-	-	-	-	pF
		V_{CC} = 1.4 V to 1.6 V	-	3.5	-	-	-	-	pF
		V_{CC} = 1.65 V to 1.95 V	-	3.7	-	-	-	-	pF
		V_{CC} = 2.3 V to 2.7 V	-	4.2	-	-	-	-	pF
		V_{CC} = 3.0 V to 3.6 V	-	4.7	-	-	-	-	pF

[1] All typical values are measured at nominal V_{CC}.

[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 µW).

$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \Sigma(C_L \times V_{CC}^2 \times f_o)$ 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.

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12. Waveforms
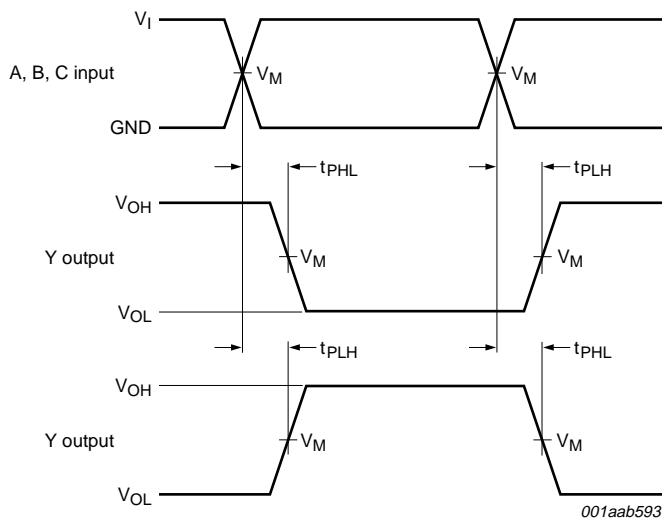
Measurement points are given in Table 10.

V_{OL} and V_{OH} are typical output voltage drops that occur with the output load.

Fig 12. Input A, B and C to output Y propagation delay times

Table 10. Measurement points

Supply voltage	Output	Input
V_{CC}	V_M	V_M
0.8 V to 3.6 V	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$
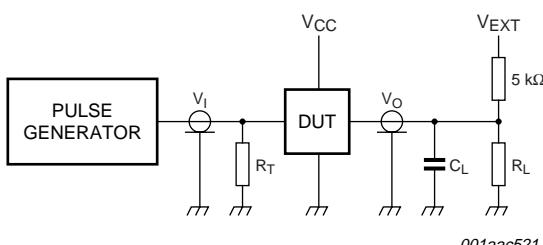
Test data is given in Table 11.

Definitions for test circuit:

R_L = Load resistance.

C_L = Load capacitance including jig and probe capacitance.

R_T = Termination resistance should be equal to the output impedance Z_o of the pulse generator.

V_{EXT} = External voltage for measuring switching times.

Fig 13. Load circuitry for switching times

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Table 11.   Test data

Supply voltage	Input		Load			V_{EXT}		
V_{CC}	V_I	$t_r = t_f$	C_L	R_L[1]	t_{PLH}, t_{PHL}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}
0.8 V to 3.6 V	V_{CC}	$\leq$ 3.0 ns	5 pF, 10 pF, 15 pF and 30 pF	5 kΩ or 1 MΩ	open	GND	$2 \times V_{CC}$

[1]   For measuring enable and disable times R_L = 5 kΩ, for measuring propagation delays, set-up and hold times and pulse width R_L = 1 MΩ.

13. Transfer characteristics

Table 12.   Transfer characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 13.

Symbol	Parameter	Conditions	25 °C			−40 °C to +125 °C			Unit
			Min	Typ	Max	Min	Max (85 °C)	Max (125 °C)	
V_{T+}	positive-going threshold voltage	see Figure 14 and Figure 15							
		V_{CC} = 0.8 V	0.30	-	0.60	0.30	0.60	0.62	V
		V_{CC} = 1.1 V	0.53	-	0.90	0.53	0.90	0.92	V
		V_{CC} = 1.4 V	0.74	-	1.11	0.74	1.11	1.13	V
		V_{CC} = 1.65 V	0.91	-	1.29	0.91	1.29	1.31	V
		V_{CC} = 2.3 V	1.37	-	1.77	1.37	1.77	1.80	V
		V_{CC} = 3.0 V	1.88	-	2.29	1.88	2.29	2.32	V
V_{T-}	negative-going threshold voltage	see Figure 14 and Figure 15							
		V_{CC} = 0.8 V	0.10	-	0.60	0.10	0.60	0.60	V
		V_{CC} = 1.1 V	0.26	-	0.65	0.26	0.65	0.65	V
		V_{CC} = 1.4 V	0.39	-	0.75	0.39	0.75	0.75	V
		V_{CC} = 1.65 V	0.47	-	0.84	0.47	0.84	0.84	V
		V_{CC} = 2.3 V	0.69	-	1.04	0.69	1.04	1.04	V
		V_{CC} = 3.0 V	0.88	-	1.24	0.88	1.24	1.24	V
V_H	hysteresis voltage	$V_H = V_{T+} - V_{T-}$; see Figure 14, Figure 15, Figure 16 and Figure 17							
		V_{CC} = 0.8 V	0.07	-	0.50	0.07	0.50	0.50	V
		V_{CC} = 1.1 V	0.08	-	0.46	0.08	0.46	0.46	V
		V_{CC} = 1.4 V	0.18	-	0.56	0.18	0.56	0.56	V
		V_{CC} = 1.65 V	0.27	-	0.66	0.27	0.66	0.66	V
		V_{CC} = 2.3 V	0.53	-	0.92	0.53	0.92	0.92	V
		V_{CC} = 3.0 V	0.79	-	1.31	0.79	1.31	1.31	V

## 14. Waveforms transfer characteristics

Fig 14. Transfer characteristic

V_{T+} and V_{T-} limits at 70 % and 20 %.
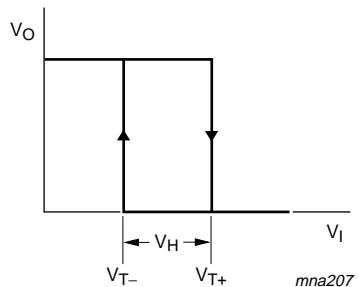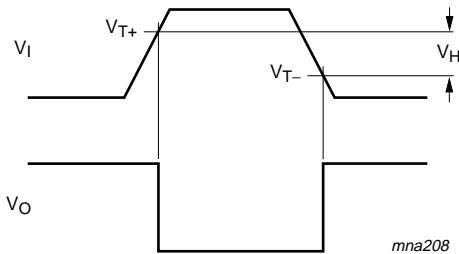
**Fig 15. Definition of V_{T+}, V_{T-} and V_H**
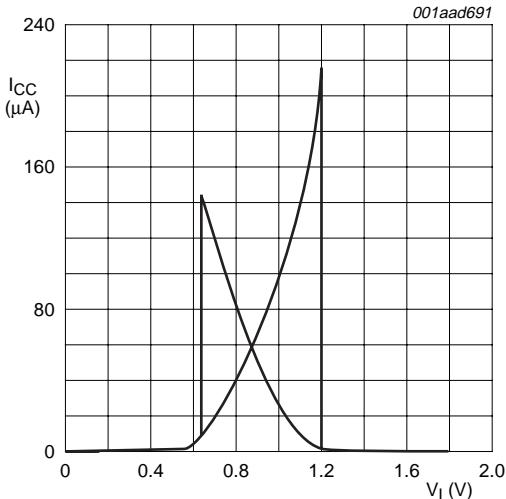

Fig 16. Typical transfer characteristics; V_{CC} = 1.8 V
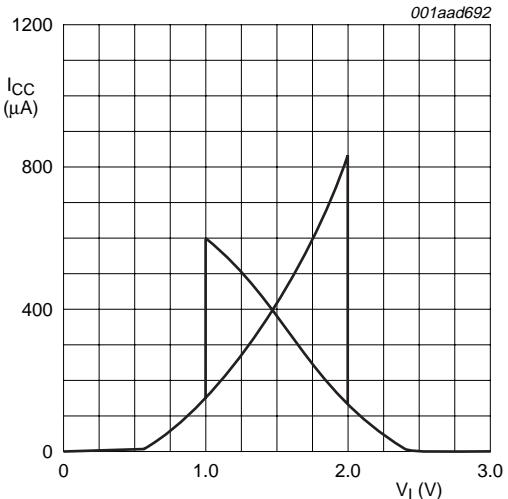
Fig 17. Typical transfer characteristics; V_{CC} = 3.0 V

15. Package outline

**Plastic surface-mounted package; 6 leads**   **SOT363**
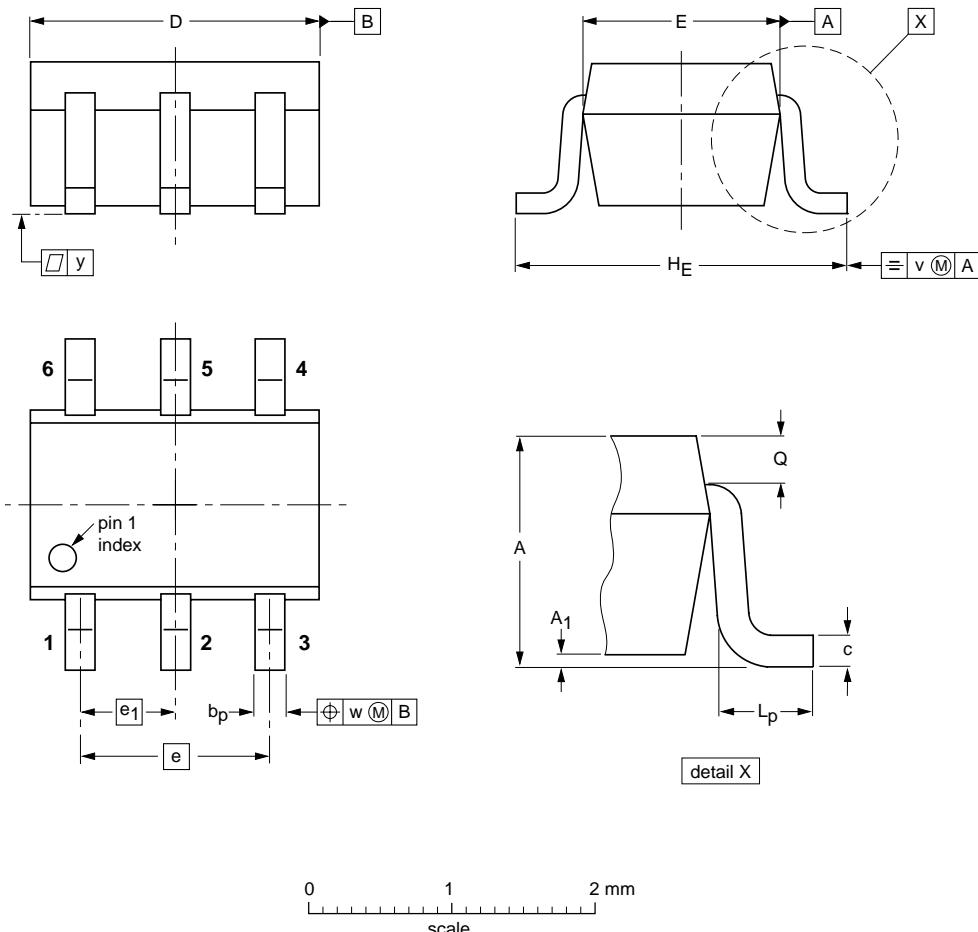
DIMENSIONS (mm are the original dimensions)

UNIT	A	A₁ max	bp	c	D	E	e	e₁	HE	Lp	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT363			SC-88			~~04-11-08~~ 06-03-16

Fig 18. Package outline SOT363 (SC-88)

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm   **SOT886**
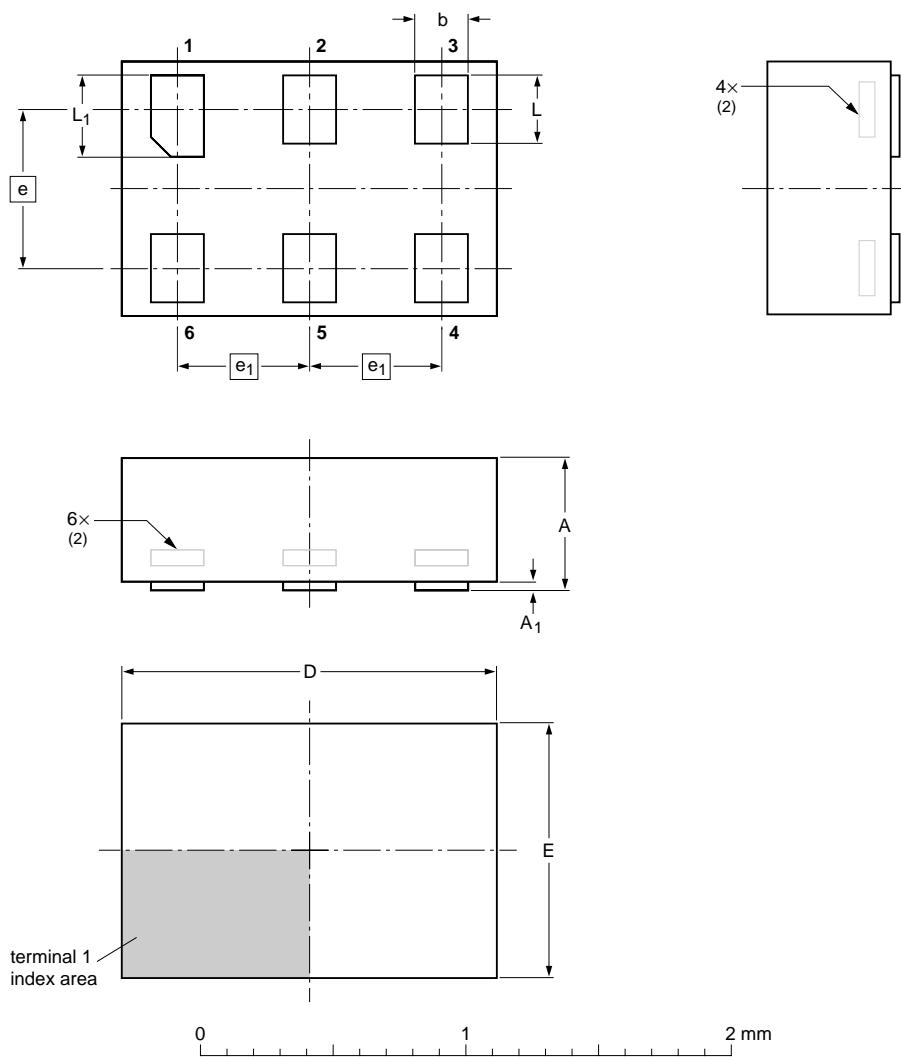
DIMENSIONS (mm are the original dimensions)

UNIT	A(1) max	A₁ max	b	D	E	e	e₁	L	L₁
mm	0.5	0.04	0.25 0.17	1.5 1.4	1.05 0.95	0.6	0.5	0.35 0.27	0.40 0.32

Notes
1. Including plating thickness.
2. Can be visible in some manufacturing processes.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT886		MO-252				04-07-15 04-07-22

Fig 19. Package outline SOT886 (XSON6)

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1 x 0.5 mm　　　　　**SOT891**
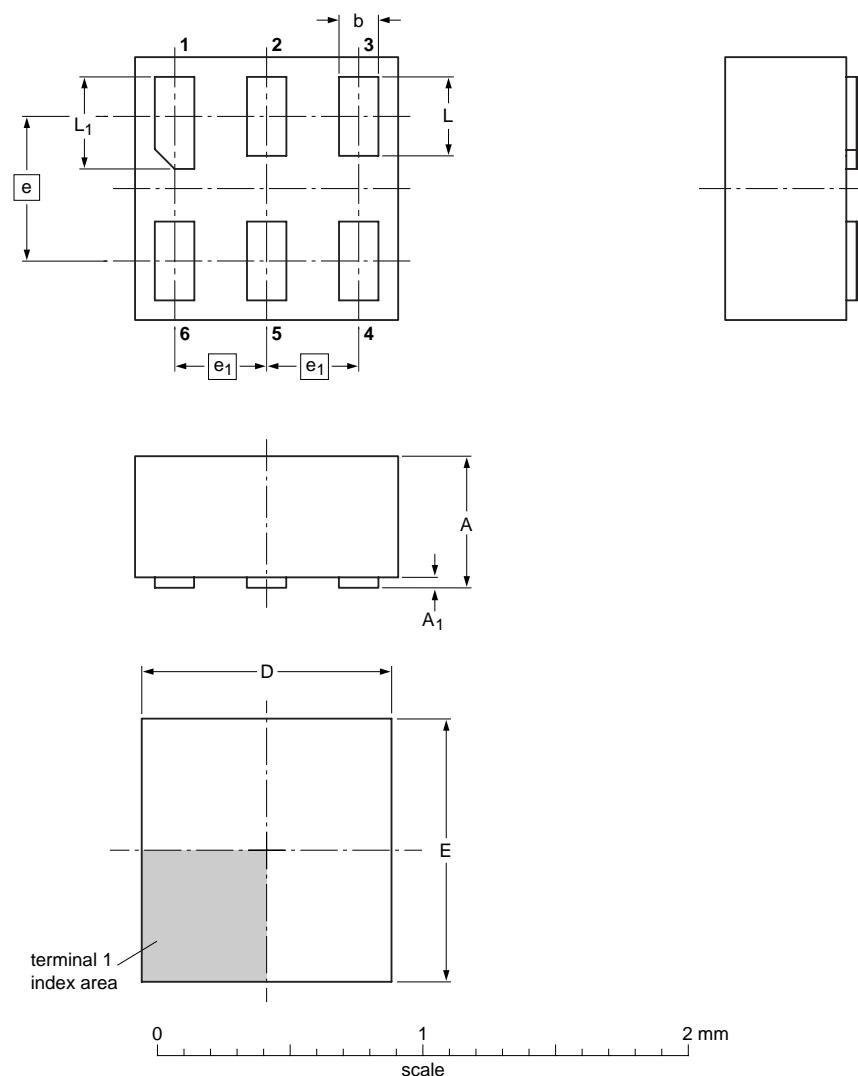
DIMENSIONS (mm are the original dimensions)

UNIT	A max	A₁ max	b	D	E	e	e₁	L	L₁
mm	0.5	0.04	0.20 / 0.12	1.05 / 0.95	1.05 / 0.95	0.55	0.35	0.35 / 0.27	0.40 / 0.32

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT891						~~05-03-11~~ 05-04-06

Fig 20. Package outline SOT891 (XSON6)

16. Abbreviations

Table 13.   Abbreviations

Acronym	Description
CDM	Charged Device Model
CMOS	Complementary Metal Oxide Semiconductor
DUT	Device Under Test
ESD	ElectroStatic Discharge
HBM	Human Body Model
MM	Machine Model
TTL	Transistor-Transistor Logic

17. Revision history

Table 14.   Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AUP1G58_1	20070131	Product data sheet	-	-

18. Legal information

18.1 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.
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".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nxp.com.

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