

74AUP1G98

Low-power configurable multiple function gate

Rev. 11 — 24 July 2023

Product data sheet

1. General description

The 74AUP1G98 is a configurable multiple function gate with Schmitt-trigger inputs. The device can be configured as any of the following logic functions MUX, AND, OR, NAND, NOR, inverter and buffer; using the 3-bit input. All inputs can be connected directly to V_{CC} or GND. This device ensures 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 potentially 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
- CMOS low power dissipation
- 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-C (2.7 V to 3.6 V)
- Low static power consumption; $I_{CC} = 0.9 \mu\text{A}$ (maximum)
- Latch-up performance exceeds 100 mA per JESD 78 Class II Level B
- Overvoltage tolerant inputs to 3.6 V
- Low noise overshoot and undershoot < 10 % of V_{CC}
- I_{OFF} circuitry provides partial power-down mode operation
- ESD protection:
 - HBM: ANSI/ESDA/JEDEC JS-001 class 3A exceeds 5000 V
 - CDM: ANSI/ESDA/JEDEC JS-002 class C3 exceeds 1000 V
- Multiple package options
- Specified from -40 °C to +85 °C and -40 °C to +125 °C

3. Ordering information

Table 1. Ordering information

Type number	Package			Version
	Temperature range	Name	Description	
74AUP1G98GW	-40 °C to +125 °C	TSSOP6	plastic thin shrink small outline package; 6 leads; body width 1.25 mm	SOT363-2
74AUP1G98GM	-40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm	SOT886
74AUP1G98GN	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm	SOT1115
74AUP1G98GS	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm	SOT1202
74AUP1G98GX	-40 °C to +125 °C	X2SON6	plastic thermal enhanced extremely thin small outline package; no leads; 6 terminals; body 1.0 × 0.8 × 0.32 mm	SOT1255-2

4. Marking

Table 2. Marking

Type number	Marking code [1]
74AUP1G98GW	a9
74AUP1G98GM	a9
74AUP1G98GN	a9
74AUP1G98GS	a9
74AUP1G98GX	a9

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

5. Functional diagram

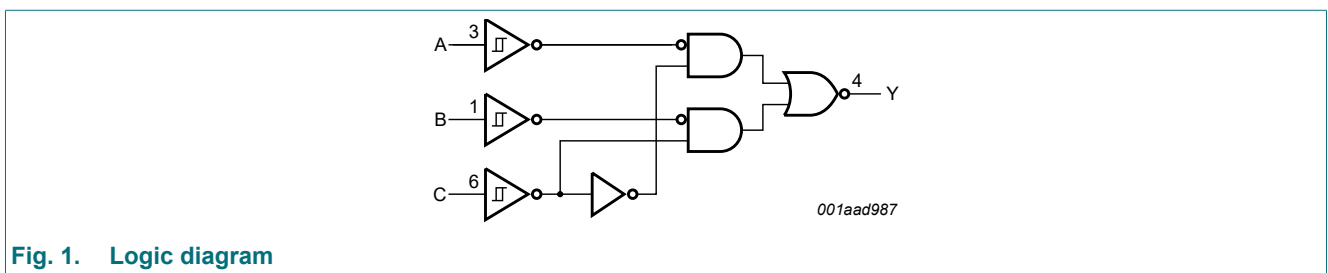
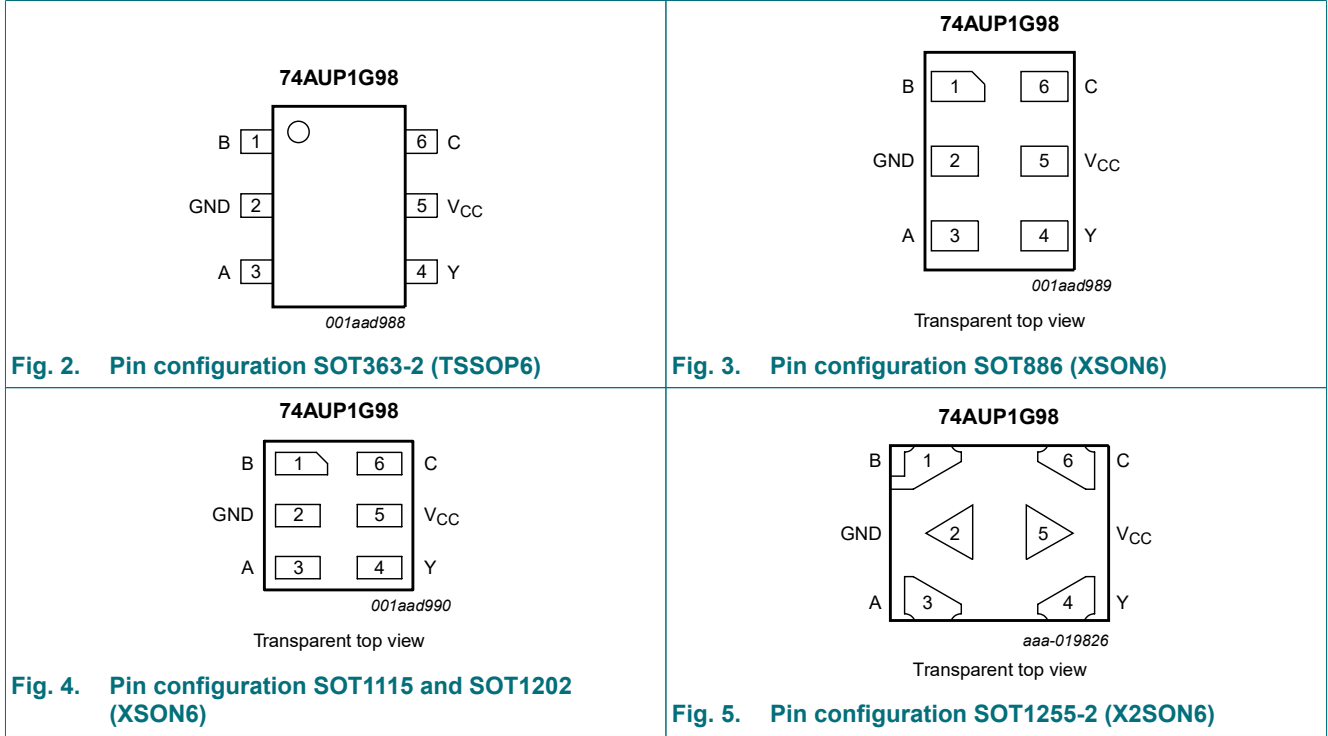


Fig. 1. Logic diagram

6. Pinning information

6.1. Pinning



6.2. Pin description

Table 3. Pin description

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

7. Functional description

Table 4. Function table

H = HIGH voltage level; L = LOW voltage level.

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

7.1. Logic configurations

Table 5. Function selection table

Logic function	Figure
2-input MUX with inverted output	see Fig. 6
2-input NAND	see Fig. 7
2-input NOR with one input inverted	see Fig. 8
2-input AND with one input inverted	see Fig. 8
2-input NAND with one input inverted	see Fig. 9
2-input OR with one input inverted	see Fig. 9
2-input NOR	see Fig. 10
Buffer	see Fig. 11
Inverter	see Fig. 12

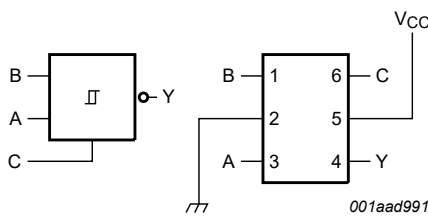


Fig. 6. 2-input MUX with inverted output

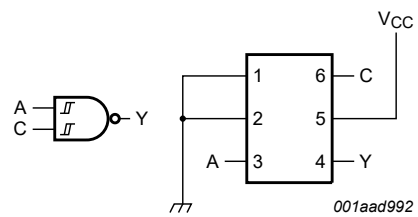


Fig. 7. 2-input NAND gate

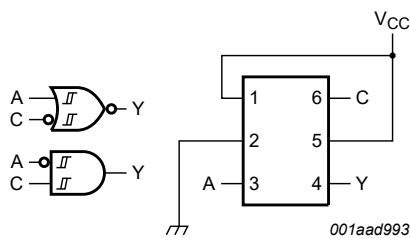


Fig. 8. 2-input AND gate with input A inverted or 2-input NOR gate with inverted C input

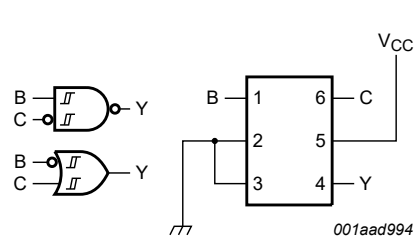
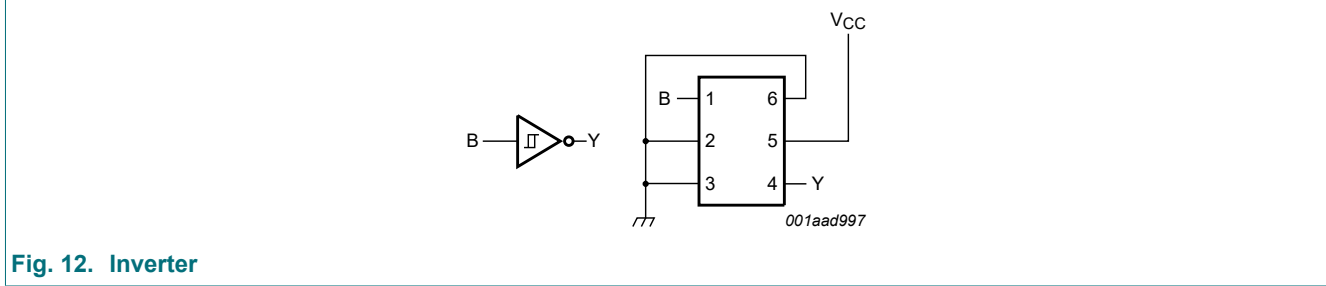
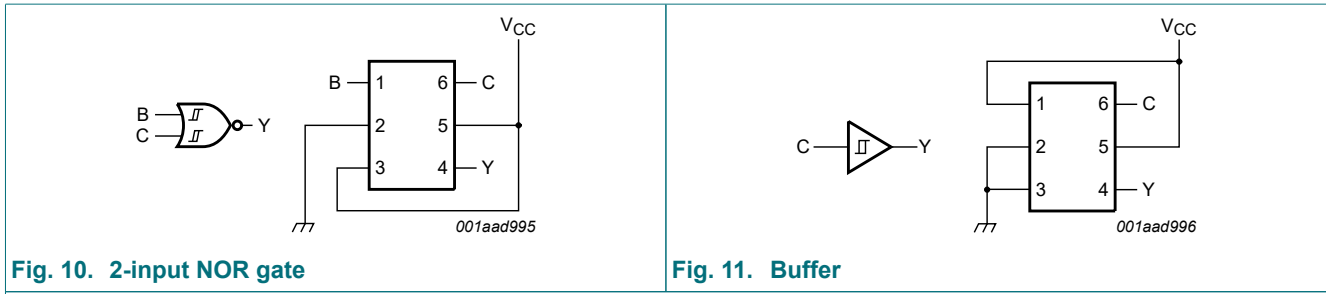


Fig. 9. 2-input OR gate with input B inverted or 2-input NAND gate with input C inverted



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	$V_O < 0$ 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 minimum input and output voltage ratings may be exceeded if the input and output current ratings are observed.

[2] For SOT363-2 (TSSOP6) package: P_{tot} derates linearly with 3.7 mW/K above 83 °C.

For SOT886 (XSON6) package: P_{tot} derates linearly with 3.3 mW/K above 74 °C.

For SOT1115 (XSON6) package: P_{tot} derates linearly with 3.2 mW/K above 71 °C.

For SOT1202 (XSON6) package: P_{tot} derates linearly with 3.3 mW/K above 74 °C.

For SOT1255-2 (X2SON6) package: P_{tot} derates linearly with 3.3 mW/K above 75 °C.

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

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 _{T+} or V _{T-}				
		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 × 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 _{T+} or V _{T-}				
		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 × 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 [1]	-	-	40	μA
C _I	input capacitance	V _{CC} = 0 V to 3.6 V; V _I = GND or V _{CC}	-	1.1	-	pF
C _O	output capacitance	V _O = GND; V _{CC} = 0 V	-	1.7	-	pF
T_{amb} = -40 °C to +85 °C						
V _{OH}	HIGH-level output voltage	V _I = V _{T+} or V _{T-}				
		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 × 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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _{OL}	LOW-level output voltage	V _I = V _{T+} or V _{T-}				
		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 × 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 [1]	-	-	50	µA
T_{amb} = -40 °C to +125 °C						
V _{OH}	HIGH-level output voltage	V _I = V _{T+} or V _{T-}				
		I _O = -20 µA; 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 × 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 _{T+} or V _{T-}				
		I _O = 20 µA; V _{CC} = 0.8 V to 3.6 V	-	-	0.11	V
		I _O = 1.1 mA; V _{CC} = 1.1 V	-	-	0.33 × 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
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 [1]	-	-	75	µA

[1] One input at V_{CC} - 0.6 V, other input at V_{CC} or GND.

11. Dynamic characteristics

Table 9. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 14.

Symbol	Parameter	Conditions	T _{amb} = 25 °C			T _{amb} = -40 °C to +85 °C		T _{amb} = -40 °C to +125 °C		Unit
			Min	Typ [1]	Max	Min	Max	Min	Max	
C_L = 5 pF										
t _{pd}	propagation delay	A, B, C to Y; see Fig. 13 [2]								
		V _{CC} = 0.8 V	-	23.3	-	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	2.9	6.7	12.9	2.7	13.2	2.7	13.4	ns
		V _{CC} = 1.4 V to 1.6 V	2.4	4.8	7.7	2.4	8.3	2.4	8.7	ns
		V _{CC} = 1.65 V to 1.95 V	2.2	4.0	6.3	1.9	7.0	1.9	7.4	ns
		V _{CC} = 2.3 V to 2.7 V	2.0	3.2	4.6	1.8	5.2	1.8	5.4	ns
C_L = 10 pF										
t _{pd}	propagation delay	A, B, C to Y; see Fig. 13 [2]								
		V _{CC} = 0.8 V	-	27.1	-	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	3.3	7.6	14.5	3.0	15.1	3.0	15.3	ns
		V _{CC} = 1.4 V to 1.6 V	2.7	5.4	8.8	2.8	9.5	2.8	9.9	ns
		V _{CC} = 1.65 V to 1.95 V	2.5	4.6	7.2	2.3	8.0	2.3	8.4	ns
		V _{CC} = 2.3 V to 2.7 V	2.4	3.8	5.3	2.2	5.9	2.2	6.2	ns
C_L = 15 pF										
t _{pd}	propagation delay	A, B, C to Y; see Fig. 13 [2]								
		V _{CC} = 0.8 V	-	30.6	-	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	3.6	8.4	16.1	3.3	16.9	3.3	17.2	ns
		V _{CC} = 1.4 V to 1.6 V	3.0	6.0	9.7	3.1	10.5	3.1	11.0	ns
		V _{CC} = 1.65 V to 1.95 V	2.8	5.1	7.9	2.5	8.9	2.5	9.3	ns
		V _{CC} = 2.3 V to 2.7 V	2.7	4.2	5.9	2.5	6.6	2.5	7.0	ns
C_L = 30 pF										
t _{pd}	propagation delay	A, B, C to Y; see Fig. 13 [2]								
		V _{CC} = 0.8 V	-	38.7	-	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	4.5	10.7	21.1	4.1	22.0	4.1	22.4	ns
		V _{CC} = 1.4 V to 1.6 V	3.8	7.6	12.3	3.8	13.5	3.8	14.2	ns
		V _{CC} = 1.65 V to 1.95 V	3.5	6.3	10.1	3.1	11.3	3.1	11.9	ns
		V _{CC} = 2.3 V to 2.7 V	3.4	5.3	7.5	3.2	8.4	3.2	8.9	ns
C_L = 30 pF										
t _{pd}	propagation delay	A, B, C to Y; see Fig. 13 [2]								
		V _{CC} = 0.8 V	-	38.7	-	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	4.5	10.7	21.1	4.1	22.0	4.1	22.4	ns
		V _{CC} = 1.4 V to 1.6 V	3.8	7.6	12.3	3.8	13.5	3.8	14.2	ns
		V _{CC} = 1.65 V to 1.95 V	3.5	6.3	10.1	3.1	11.3	3.1	11.9	ns
		V _{CC} = 2.3 V to 2.7 V	3.4	5.3	7.5	3.2	8.4	3.2	8.9	ns
C_L = 30 pF										
t _{pd}	propagation delay	A, B, C to Y; see Fig. 13 [2]								
		V _{CC} = 0.8 V	-	38.7	-	-	-	-	-	ns
		V _{CC} = 1.1 V to 1.3 V	4.5	10.7	21.1	4.1	22.0	4.1	22.4	ns
		V _{CC} = 1.4 V to 1.6 V	3.8	7.6	12.3	3.8	13.5	3.8	14.2	ns
		V _{CC} = 1.65 V to 1.95 V	3.5	6.3	10.1	3.1	11.3	3.1	11.9	ns
		V _{CC} = 2.3 V to 2.7 V	3.4	5.3	7.5	3.2	8.4	3.2	8.9	ns

Low-power configurable multiple function gate

Symbol	Parameter	Conditions	T _{amb} = 25 °C			T _{amb} = -40 °C to +85 °C		T _{amb} = -40 °C to +125 °C		Unit
			Min	Typ [1]	Max	Min	Max	Min	Max	
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]								
		V _{CC} = 0.8 V	-	2.7	-	-	-	-	-	pF
		V _{CC} = 1.1 V to 1.3 V	-	2.9	-	-	-	-	-	pF
		V _{CC} = 1.4 V to 1.6 V	-	3.0	-	-	-	-	-	pF
		V _{CC} = 1.65 V to 1.95 V	-	3.2	-	-	-	-	-	pF
		V _{CC} = 2.3 V to 2.7 V	-	3.8	-	-	-	-	-	pF
		V _{CC} = 3.0 V to 3.6 V	-	4.4	-	-	-	-	-	pF

- [1] All typical values are measured at nominal V_{CC}.
- [2] t_{pd} is the same as t_{PLH} and t_{PHL}.
- [3] 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 = output load capacitance in pF;
 V_{CC} = supply voltage in V;
 N = number of inputs switching;
 Σ(C_L × V_{CC}² × f_o) = sum of the outputs.

11.1. Waveforms and test circuit

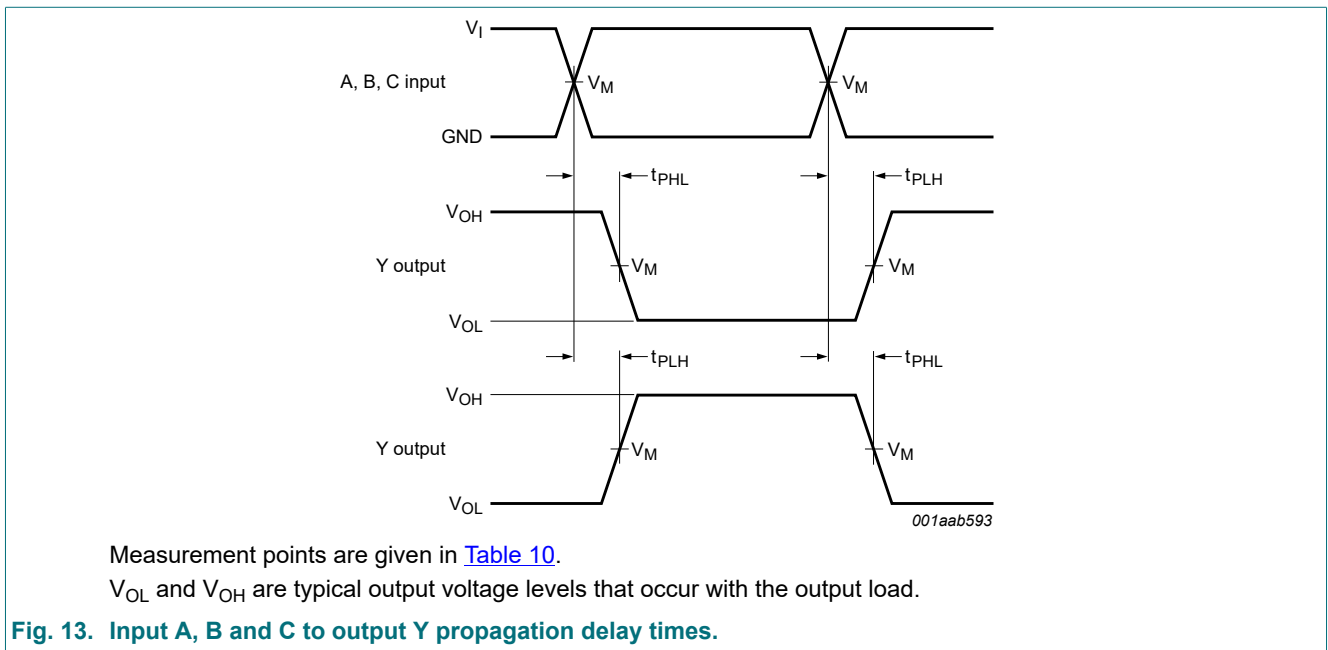
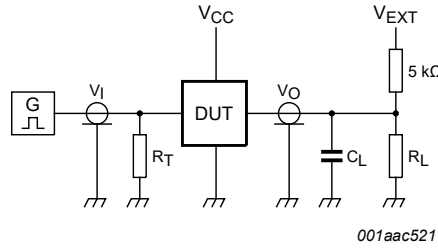


Table 10. Measurement points

Supply voltage	Output	Input		
V _{CC}	V _M	V _M	V _I	t _r = t _f
0.8 V to 3.6 V	0.5 × V _{CC}	0.5 × V _{CC}	V _{CC}	≤ 3.0 ns



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. 14. Test circuit for measuring switching times

Table 11. Test data

Supply voltage	Load		V_{EXT}		
V_{CC}	C_L	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 kΩ or 1 MΩ	open	GND	$2 \times V_{CC}$

[1] For measuring enable and disable times $R_L = 5 \text{ k}\Omega$.

For measuring propagation delays, setup and hold times and pulse width $R_L = 1 \text{ M}\Omega$.

12. Transfer characteristics

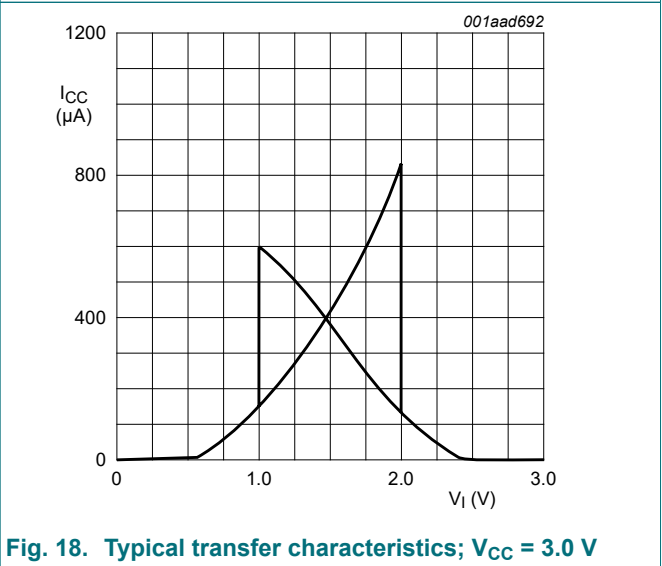
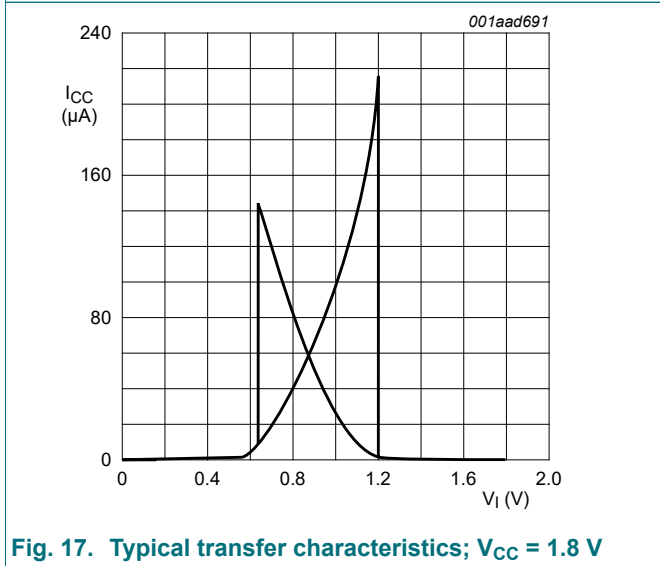
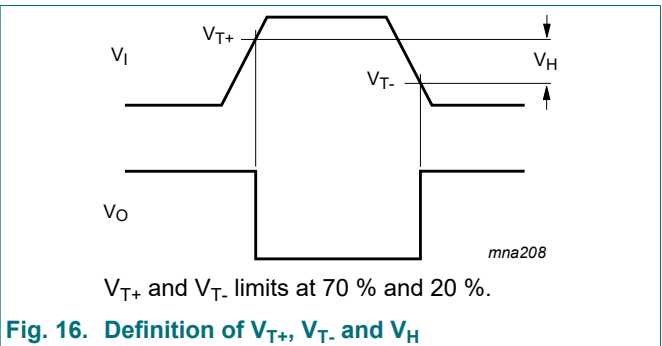
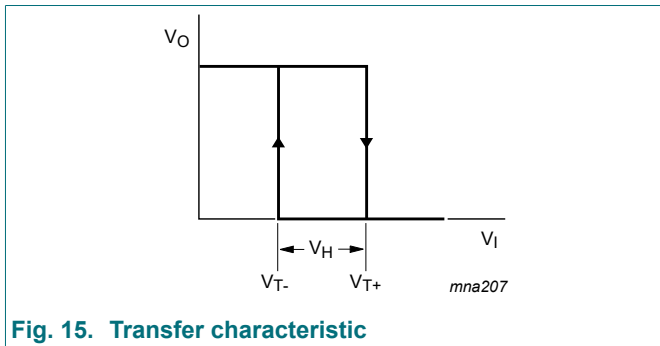
Table 12. Transfer characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see [Fig. 14](#).

Symbol	Parameter	Conditions	$T_{amb} = 25 \text{ }^\circ\text{C}$			$T_{amb} = -40 \text{ }^\circ\text{C}$ to $+85 \text{ }^\circ\text{C}$		$T_{amb} = -40 \text{ }^\circ\text{C}$ to $+125 \text{ }^\circ\text{C}$		Unit
			Min	Typ	Max	Min	Max	Min	Max	
V_{T+}	positive-going threshold voltage	see Fig. 15 and Fig. 16								
		$V_{CC} = 0.8 \text{ V}$	0.30	-	0.60	0.30	0.60	0.30	0.62	V
		$V_{CC} = 1.1 \text{ V}$	0.53	-	0.90	0.53	0.90	0.53	0.92	V
		$V_{CC} = 1.4 \text{ V}$	0.74	-	1.11	0.74	1.11	0.74	1.13	V
		$V_{CC} = 1.65 \text{ V}$	0.91	-	1.29	0.91	1.29	0.91	1.31	V
		$V_{CC} = 2.3 \text{ V}$	1.37	-	1.77	1.37	1.77	1.37	1.80	V
V_{T-}	negative-going threshold voltage	see Fig. 15 and Fig. 16								
		$V_{CC} = 0.8 \text{ V}$	0.10	-	0.60	0.10	0.60	0.10	0.60	V
		$V_{CC} = 1.1 \text{ V}$	0.26	-	0.65	0.26	0.65	0.26	0.65	V
		$V_{CC} = 1.4 \text{ V}$	0.39	-	0.75	0.39	0.75	0.39	0.75	V
		$V_{CC} = 1.65 \text{ V}$	0.47	-	0.84	0.47	0.84	0.47	0.84	V
		$V_{CC} = 2.3 \text{ V}$	0.69	-	1.04	0.69	1.04	0.69	1.04	V
		$V_{CC} = 3.0 \text{ V}$	0.88	-	1.24	0.88	1.24	0.88	1.24	V

Symbol	Parameter	Conditions	T _{amb} = 25 °C			T _{amb} = -40 °C to +85 °C		T _{amb} = -40 °C to +125 °C		Unit
			Min	Typ	Max	Min	Max	Min	Max	
V _H	hysteresis voltage	(V _{T+} - V _{T-}); see Fig. 15, Fig. 16, Fig. 17 and Fig. 18								
		V _{CC} = 0.8 V	0.07	-	0.50	0.07	0.50	0.07	0.50	V
		V _{CC} = 1.1 V	0.08	-	0.46	0.08	0.46	0.08	0.46	V
		V _{CC} = 1.4 V	0.18	-	0.56	0.18	0.56	0.18	0.56	V
		V _{CC} = 1.65 V	0.27	-	0.66	0.27	0.66	0.27	0.66	V
		V _{CC} = 2.3 V	0.53	-	0.92	0.53	0.92	0.53	0.92	V
		V _{CC} = 3.0 V	0.79	-	1.31	0.79	1.31	0.79	1.31	V

13. Waveforms transfer characteristics



14. Package outline

TSSOP6: plastic thin shrink small outline package; 6 leads; body width 1.25 mm

SOT363-2

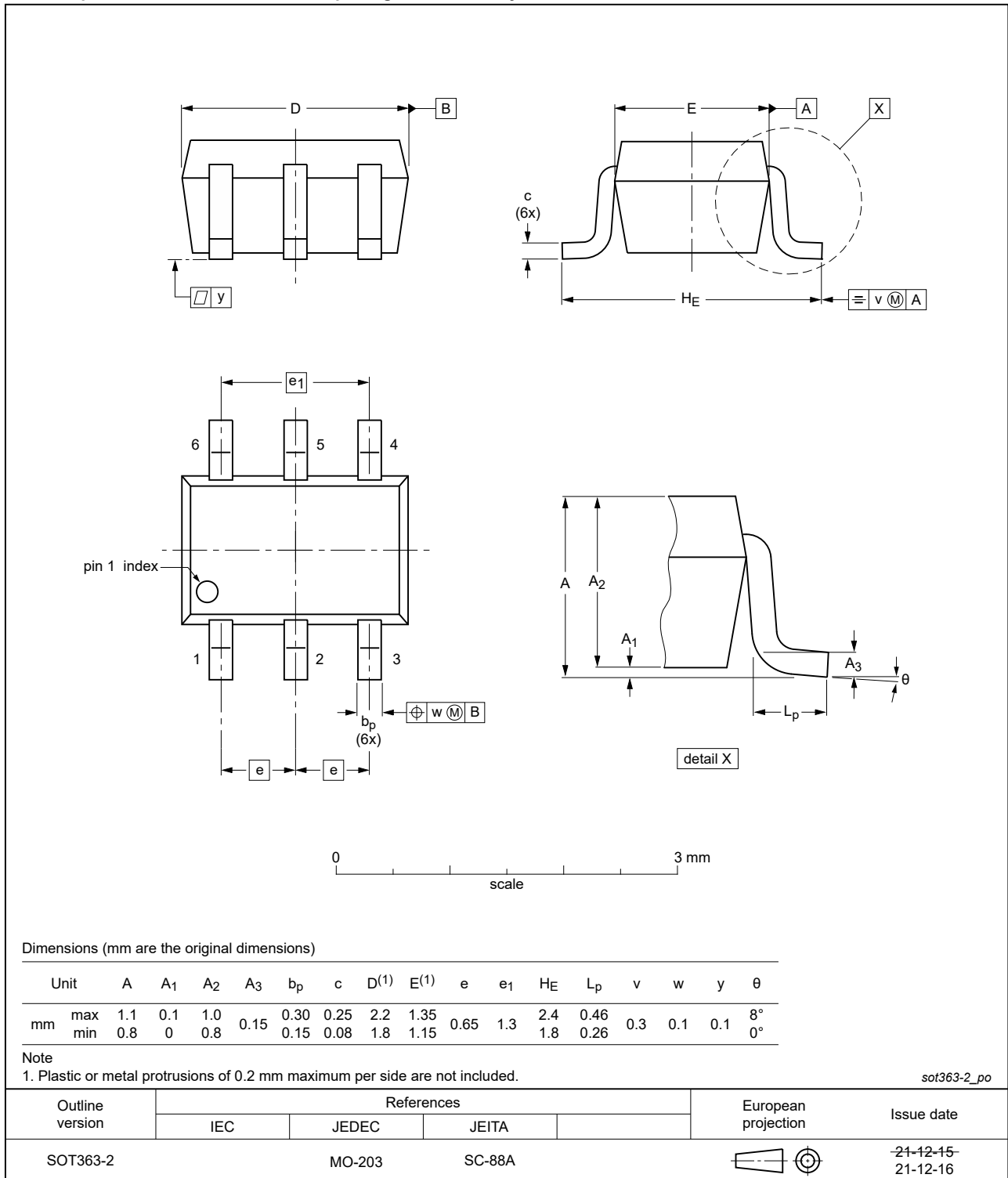


Fig. 19. Package outline SOT363-2 (TSSOP6)

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm

SOT886

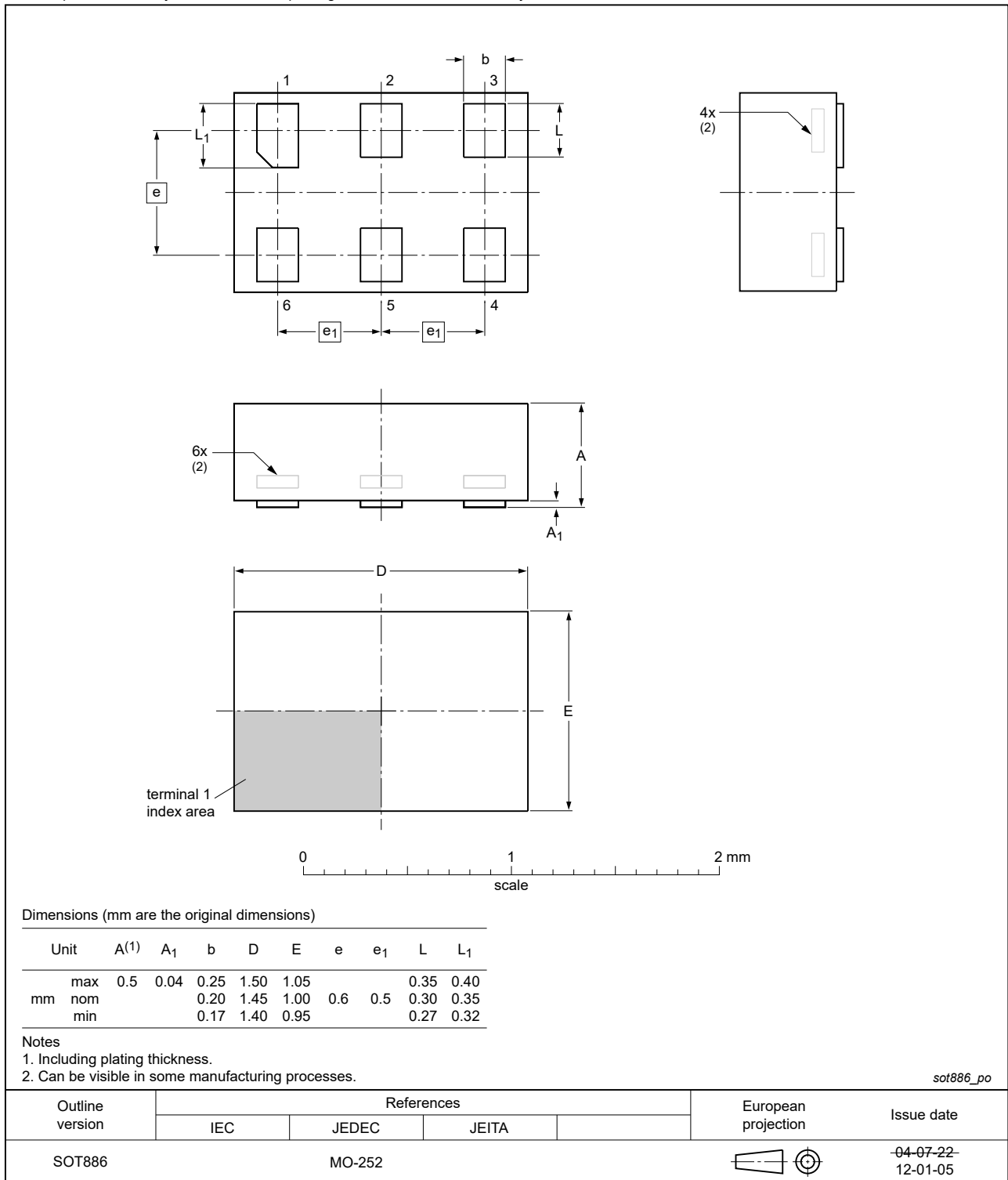


Fig. 20. Package outline SOT886 (XSON6)

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

SOT1115

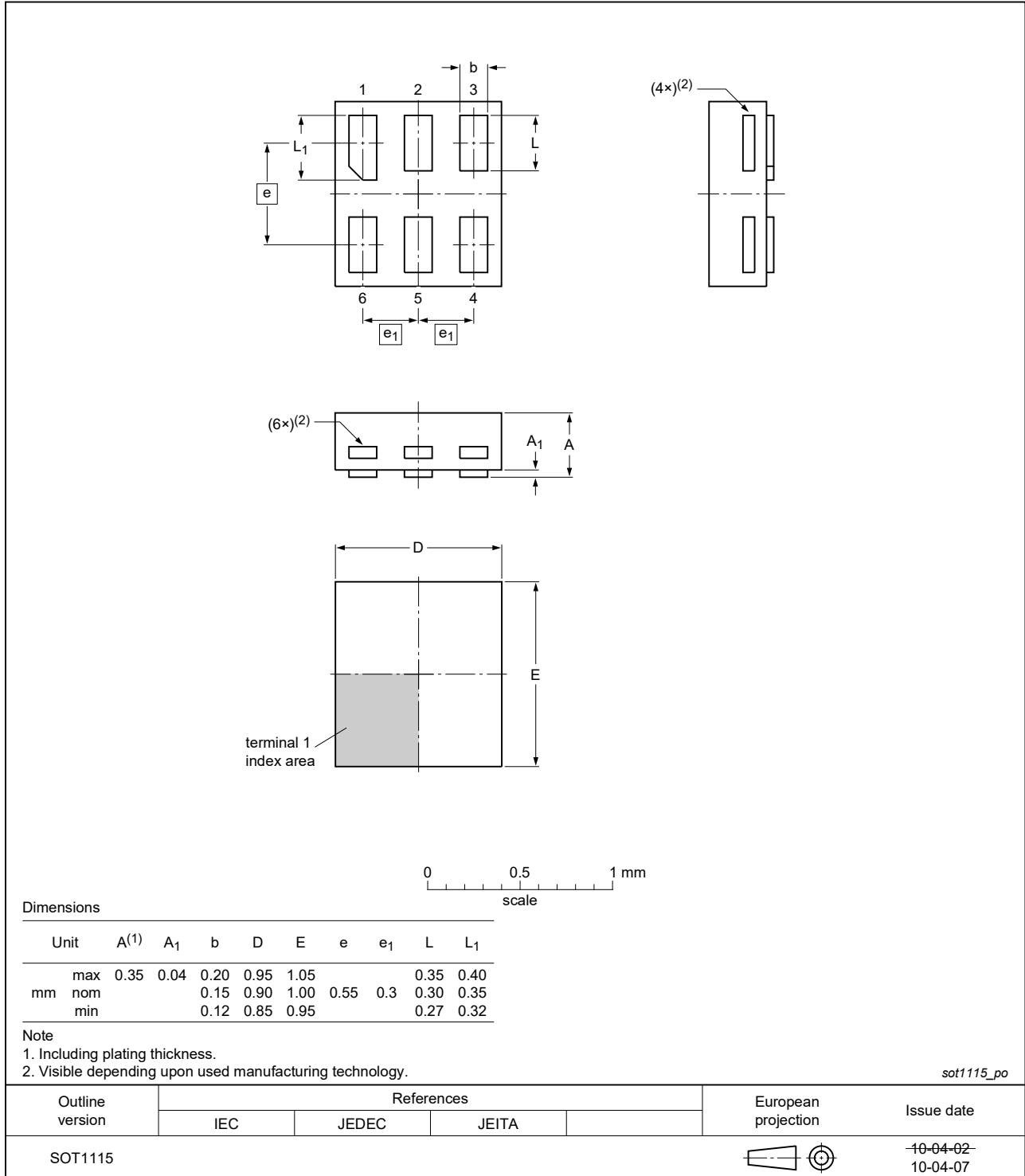


Fig. 21. Package outline SOT1115 (XSON6)

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

SOT1202

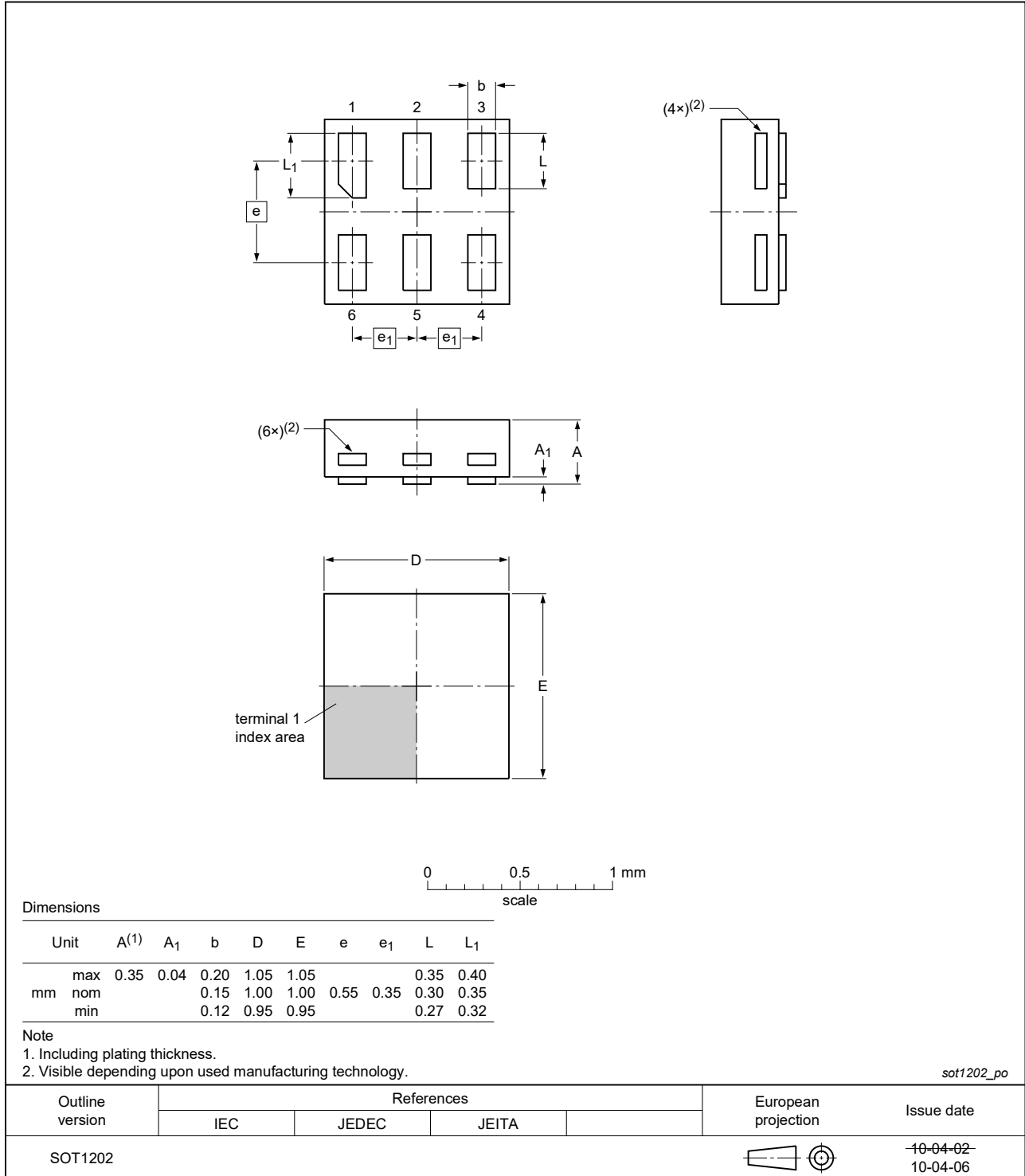


Fig. 22. Package outline SOT1202 (XSON6)

X2SON6: plastic thermal enhanced extremely thin small outline package; no leads;
6 terminals; body 1.0 x 0.8 x 0.32 mm

SOT1255-2

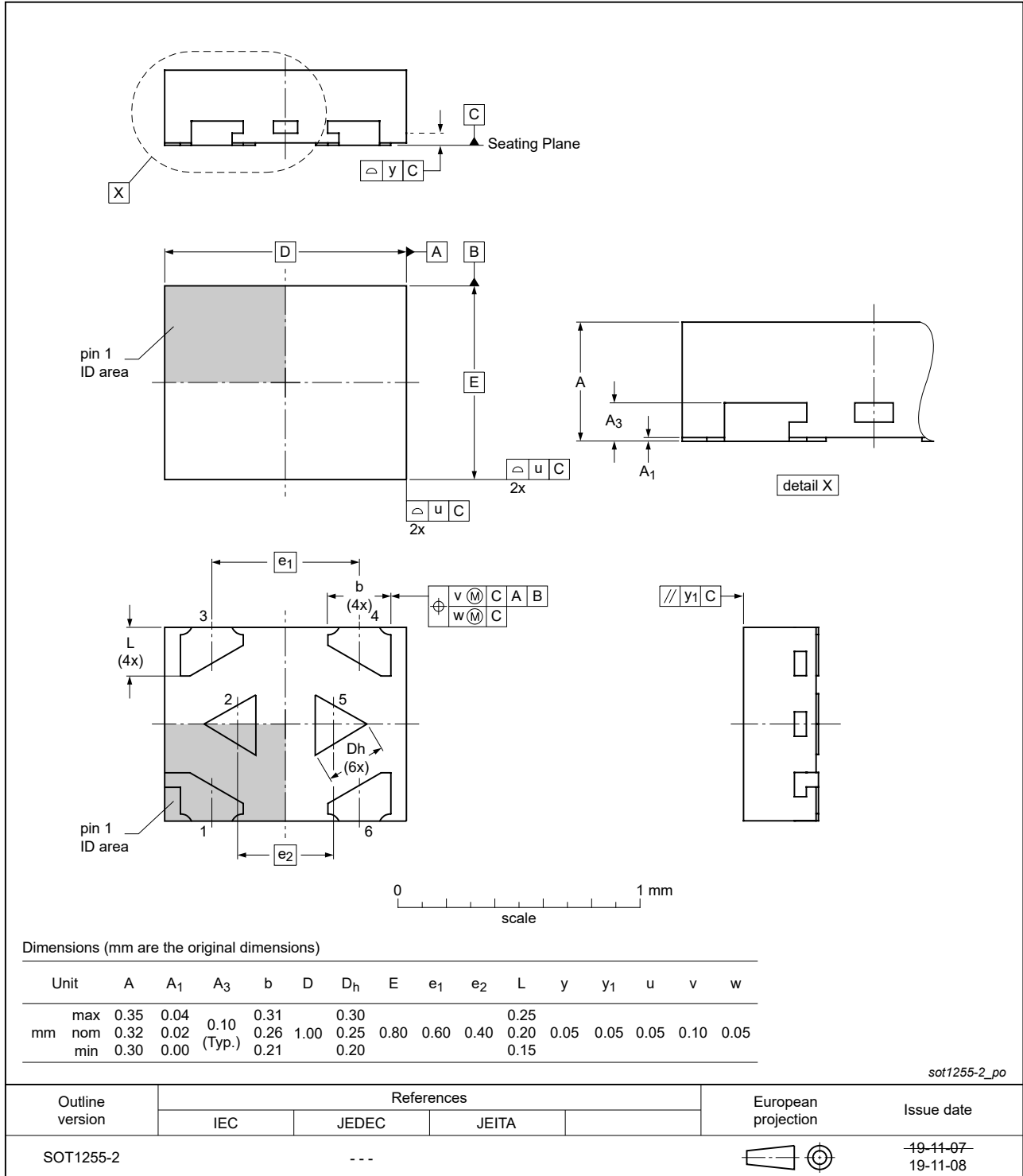


Fig. 23. Package outline SOT1255-2 (X2SON6)

15. Abbreviations

Table 13. Abbreviations

Acronym	Description
CDM	Charged Device Model
DUT	Device Under Test
ESD	ElectroStatic Discharge
HBM	Human Body Model

16. Revision history

Table 14. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AUP1G98 v.11	20230724	Product data sheet	-	74AUP1G98 v.10
Modifications:	<ul style="list-style-type: none"> Section 2: ESD specification updated according to the latest JEDEC standard. 			
74AUP1G98 v.10	20220124	Product data sheet	-	74AUP1G98 v.9
Modifications:	<ul style="list-style-type: none"> SOT363 (SC-88) package changed to SOT363-2 (TSSOP6) package. 			
74AUP1G98 v.9	20210720	Product data sheet	-	74AUP1G98 v.8
Modifications:	<ul style="list-style-type: none"> 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. SOT1255 (X2SON6) package changed to SOT1255-2 (X2SON6) package. Type number 74AUP1G98GF (SOT891/XSON6) removed. Section 1 and Section 2 updated. Table 6: Derating values for P_{tot} total power dissipation updated. 			
74AUP1G98 v.8	20150923	Product data sheet	-	74AUP1G98 v.7
Modifications:	<ul style="list-style-type: none"> Added type number 74AUP1G98GX (SOT1255/X2SON6). 			
74AUP1G98 v.7	20120815	Product data sheet	-	74AUP1G98 v.6
Modifications:	<ul style="list-style-type: none"> Package outline drawing of SOT886 (Fig. 20) modified. 			
74AUP1G98 v.6	20111128	Product data sheet	-	74AUP1G98 v.5
74AUP1G98 v.5	20110105	Product data sheet	-	74AUP1G98 v.4
74AUP1G98 v.4	20101012	Product data sheet	-	74AUP1G98 v.3
74AUP1G98 v.3	20090629	Product data sheet	-	74AUP1G98 v.2
74AUP1G98 v.2	20090402	Product data sheet	-	74AUP1G98 v.1
74AUP1G98 v.1	20061108	Product data sheet	-	-

17. 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.
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 <https://www.nexperia.com>.

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Contents

1. General description	1
2. Features and benefits	1
3. Ordering information	2
4. Marking	2
5. Functional diagram	2
6. Pinning information	3
6.1. Pinning.....	3
6.2. Pin description.....	3
7. Functional description	4
7.1. Logic configurations.....	4
8. Limiting values	5
9. Recommended operating conditions	5
10. Static characteristics	6
11. Dynamic characteristics	8
11.1. Waveforms and test circuit.....	9
12. Transfer characteristics	10
13. Waveforms transfer characteristics	11
14. Package outline	12
15. Abbreviations	17
16. Revision history	17
17. Legal information	18

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