74AUP1T34GXH Datasheet

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DiGi Electronics Part Number	74AUP1T34GXH-DG
Manufacturer	Nexperia USA Inc.
Manufacturer Product Number	74AUP1T34GXH
Description	IC TRANSLATOR UNIDIR 5X2SON
Detailed Description	Buffer, Non-Inverting 1 Element 1 Bit per Element Push-Pull Output 5-X2SON (0.80x0.80)

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
74AUP1T34GXH	Nexperia USA Inc.
Series:	Product Status:
74AUP	Active
Logic Type:	Number of Elements:
Buffer, Non-Inverting	1
Number of Bits per Element:	Input Type:
1	-
Output Type:	Current - Output High, Low:
Push-Pull	4mA, 4mA
Voltage - Supply:	Operating Temperature:
1.1V ~ 3.6V	-40°C ~ 125°C (TA)
Mounting Type:	Package / Case:
Surface Mount	4-XFDFN Exposed Pad
Supplier Device Package:	Base Product Number:
5-X2SON (0.80x0.80)	74AUP1T34

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8542.39.0001	

74AUP1T34

Low-power dual supply translating buffer

Rev. 10 — 23 September 2024 Product data sheet

1. General description

The 74AUP1T34 is a single dual supply translating buffer. Input A is referenced to $V_{CC(A)}$ and output Y is referenced to $V_{CC(Y)}$. Schmitt-trigger action at all inputs makes the circuit tolerant of slower input rise and fall times. This device ensures very low static and dynamic power consumption across the entire V_{CC} range from 1.1 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 1.1 V to 3.6 V
- CMOS low power dissipation
- High noise immunity
- Complies with JEDEC standards:
  - 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)
- Wide supply voltage range:
  - $V_{CC(A)}$: 1.1 V to 3.6 V
  - $V_{CC(Y)}$: 1.1 V to 3.6 V
- Low static power consumption; I_{CC} = 0.9 μA (maximum)
- Each port operates over the full 1.1 V to 3.6 V power supply range
- 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			
	Temperature range	Name	Description	Version
74AUP1T34GW	-40 °C to +125 °C	TSSOP5	plastic thin shrink small outline package; 5 leads; body width 1.25 mm	SOT353-1
74AUP1T34GM	-40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm	SOT886
74AUP1T34GN	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm	SOT1115
74AUP1T34GS	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm	SOT1202
74AUP1T34GX	-40 °C to +125 °C	X2SON5	plastic thermal enhanced extremely thin small outline package; no leads; 5 terminals; body 0.8 × 0.8 × 0.32 mm	SOT1226-3
74AUP1T34GZ	-40 °C to +125 °C	XSON5	plastic thermal enhanced extremely thin small outline package with side-wettable flanks (SWF); no leads; 5 terminals; body 1.1 × 0.85 × 0.5 mm	SOT8065-1

4. Marking

Table 2. Marking

Type number	Marking code[1]
74AUP1T34GW	pQ
74AUP1T34GM	pQ
74AUP1T34GN	pQ
74AUP1T34GS	pQ
74AUP1T34GX	pQ
74AUP1T34GZ	pQ

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

5. Functional diagram

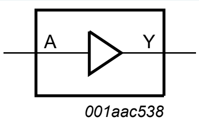


Fig. 1. Logic symbol

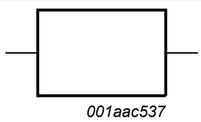


Fig. 2. IEC logic symbol

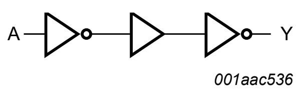
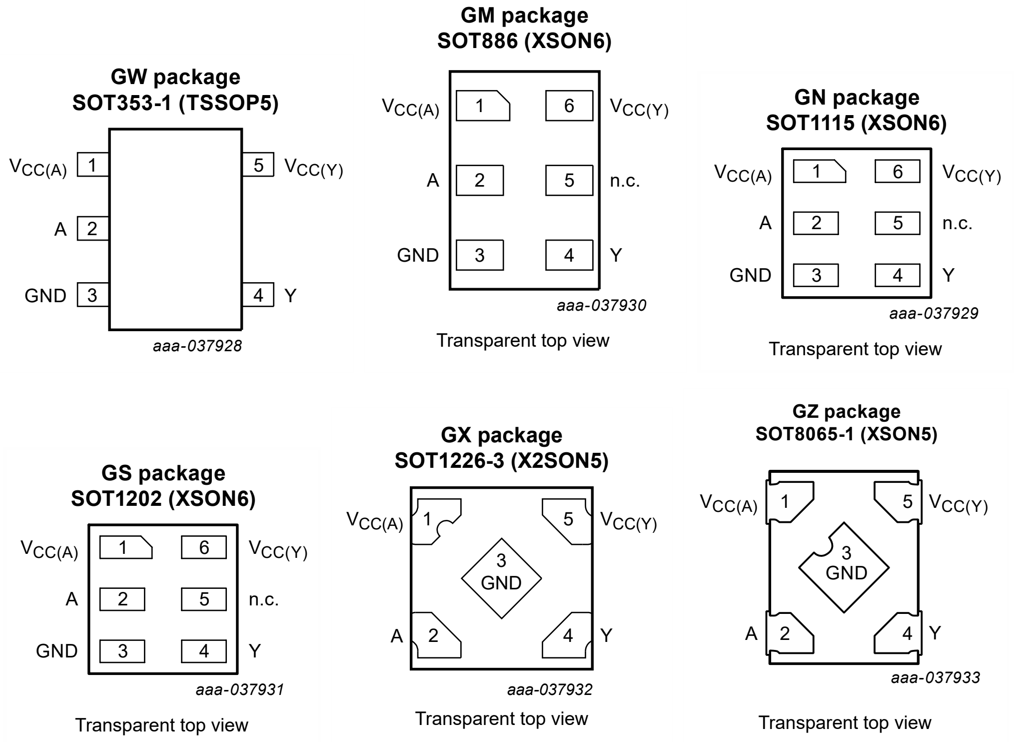


Fig. 3. Logic diagram

6. Pinning information

6.1. Pinning



6.2. Pin description

Table 3. Pin description

Symbol	Pin		Description
	TSSOP5, XSON5 and X2SON5	XSON6	
$V_{CC(A)}$	1	1	supply voltage port A
A	2	2	data input A
GND	3	3	ground (0 V)
Y	4	4	data output Y
n.c.	-	5	not connected
$V_{CC(Y)}$	5	6	supply voltage port Y

7. Functional description

Table 4. Function table

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

Input	Output
A	**Y**
L	L
H	H

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
$V_{CC(A)}$	supply voltage A			-0.5	+4.6	V
$V_{CC(Y)}$	supply voltage Y			-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 $V_{CC(Y)}$		-	±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 SOT353-1 (TSSOP5) package: P_{tot} derates linearly with 3.3 mW/K above 74 °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 SOT1226-3 (X2SON5) package: P_{tot} derates linearly with 3.0 mW/K above 67 °C.
For SOT8065-1 (XSON5) package: P_{tot} derates linearly with 3.2 mW/K above 72 °C.

9. Recommended operating conditions

Table 6. Recommended operating conditions

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{CC(A)}$	supply voltage A		1.1	3.6	V
$V_{CC(Y)}$	supply voltage Y		1.1	3.6	V
V_I	input voltage		0	3.6	V
V_O	output voltage		0	$V_{CC(Y)}$	V
T_{amb}	ambient temperature		-40	+125	°C
$\Delta t/\Delta V$	input transition rise and fall rate	control and data inputs; $V_{CC(A)}$ = 1.1 V to 3.6 V	0	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	Typ	Max	Unit
T_{amb} = 25 °C						
V_{IH}	HIGH-level input voltage	$V_{CC(A)}$ = 1.1 V to 1.95 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	0.65 × $V_{CC(A)}$	-	-	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	1.6	-	-	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	2.0	-	-	V
V_{IL}	LOW-level input voltage	$V_{CC(A)}$ = 1.1 V to 1.95 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.35 × $V_{CC(A)}$	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.7	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.9	V
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$				
		I_O = -20 μA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	$V_{CC(Y)}$ - 0.1	-	-	V
		I_O = -1.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V	0.75 × $V_{CC(Y)}$	-	-	V
		I_O = -1.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.4 V	1.11	-	-	V
		I_O = -1.9 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.65 V	1.32	-	-	V
		I_O = -2.3 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	2.05	-	-	V
		I_O = -3.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	1.9	-	-	V
		I_O = -2.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	2.72	-	-	V
		I_O = -4.0 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	2.6	-	-	V
V_{OL}	LOW-level output voltage	$V_I = V_{IL}$				
		I_O = 20 μA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.1	V
		I_O = 1.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V	-	-	0.3 × $V_{CC(Y)}$	V
		I_O = 1.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.4 V	-	-	0.31	V
		I_O = 1.9 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.65 V	-	-	0.31	V
		I_O = 2.3 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	-	-	0.31	V
		I_O = 3.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	-	-	0.44	V
		I_O = 2.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	-	-	0.31	V
		I_O = 4.0 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	-	-	0.44	V
I_I	input leakage current	V_I = 0 V to 3.6 V; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	±0.1	μA
I_{OFF}	power-off leakage current	A input; V_I = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 0 V to 3.6 V	-	-	±0.2	μA
		Y output; V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 3.6 V; V_I = 0 V or 3.6 V; $V_{CC(Y)}$ = 0 V	-	-	±0.2	μA
ΔI_{OFF}	additional power-off leakage current	A input; V_I = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 0.2 V; $V_{CC(Y)}$ = 0 V to 3.6 V	-	-	±0.2	μA
		Y output; V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 3.6 V; V_I = 0 V or 3.6 V; $V_{CC(Y)}$ = 0 V to 0.2 V	-	-	±0.2	μA

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_{CC}	supply current	port A; V_I = GND or $V_{CC(A)}$; I_O = 0 A				
		$V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.5	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(Y)}$ = 0 V	-	-	0.5	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 3.6 V	-	0.0	-	μA
		port Y; V_I = GND or $V_{CC(A)}$; I_O = 0 A				
		$V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.5	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(Y)}$ = 0 V	-	0.0	-	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 3.6 V	-	-	0.5	μA
		port A and port Y; V_I = GND or $V_{CC(A)}$; I_O = 0 A; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.5	μA
ΔI_{CC}	additional supply current	A input; $V_{CC(A)}$ = 3.3 V; $V_{CC(Y)}$ = 0 V to 3.6 V; $V_I = V_{CC(A)}$ - 0.6 V	-	-	40	μA
C_I	input capacitance	A input; $V_{CC(A)} = V_{CC(Y)}$ = 0 V to 3.6 V; V_I = GND or $V_{CC(A)}$	-	1.0	-	pF
C_O	output capacitance	Y output; V_O = GND; $V_{CC(Y)}$ = 0 V; $V_{CC(A)}$ = 0 V to 3.6 V	-	1.8	-	pF
T_{amb} = -40 °C to +85 °C						
V_{IH}	HIGH-level input voltage	$V_{CC(A)}$ = 1.1 V to 1.95 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	0.65 × $V_{CC(A)}$	-	-	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	1.6	-	-	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	2.0	-	-	V
V_{IL}	LOW-level input voltage	$V_{CC(A)}$ = 1.1 V to 1.95 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.35 × $V_{CC(A)}$	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.7	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.9	V
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$				
		I_O = -20 μA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	$V_{CC(Y)}$ - 0.1	-	-	V
		I_O = -1.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V	0.7 × $V_{CC(Y)}$	-	-	V
		I_O = -1.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.4 V	1.03	-	-	V
		I_O = -1.9 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.65 V	1.30	-	-	V
		I_O = -2.3 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	1.97	-	-	V
		I_O = -3.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	1.85	-	-	V
		I_O = -2.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	2.67	-	-	V
		I_O = -4.0 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	2.55	-	-	V
V_{OL}	LOW-level output voltage	$V_I = V_{IL}$				
		I_O = 20 μA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.1	V
		I_O = 1.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V	-	-	0.3 × $V_{CC(Y)}$	V
		I_O = 1.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.4 V	-	-	0.37	V
		I_O = 1.9 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.65 V	-	-	0.35	V
		I_O = 2.3 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	-	-	0.33	V
		I_O = 3.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	-	-	0.45	V
		I_O = 2.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	-	-	0.33	V
		I_O = 4.0 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	-	-	0.45	V

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_I	input leakage current	V_I = 0 V to 3.6 V; $V_{CC(A)}$ = $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	±0.5	μA
I_{OFF}	power-off leakage current	A input; V_I = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 0 V to 3.6 V	-	-	±0.5	μA
		Y output; V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 3.6 V; V_I = 0 V or 3.6 V; $V_{CC(Y)}$ = 0 V	-	-	±0.5	μA
ΔI_{OFF}	additional power-off leakage current	A input; V_I = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 0.2 V; $V_{CC(Y)}$ = 0 V to 3.6 V	-	-	±0.6	μA
		Y output; V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 3.6 V; V_I = 0 V or 3.6 V; $V_{CC(Y)}$ = 0 V to 0.2 V	-	-	±0.6	μA
I_{CC}	supply current	port A; V_I = GND or $V_{CC(A)}$; I_O = 0 A				
		$V_{CC(A)}$ = $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.9	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(Y)}$ = 0 V	-	-	0.9	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 3.6 V	-	0.0	-	μA
		port Y; V_I = GND or $V_{CC(A)}$; I_O = 0 A				
		$V_{CC(A)}$ = $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.9	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(Y)}$ = 0 V	-	0.0	-	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 3.6 V	-	-	0.9	μA
		port A and port Y; V_I = GND or $V_{CC(A)}$; I_O = 0 A; $V_{CC(A)}$ = $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.9	μA
ΔI_{CC}	additional supply current	A input; $V_{CC(A)}$ = 3.3 V; $V_{CC(Y)}$ = 0 V to 3.6 V; V_I = $V_{CC(A)}$ - 0.6 V	-	-	50	μA
T_{amb} = -40 °C to +125 °C						
V_{IH}	HIGH-level input voltage	$V_{CC(A)}$ = 1.1 V to 1.95 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	0.7 × $V_{CC(A)}$	-	-	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	1.6	-	-	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	2.0	-	-	V
V_{IL}	LOW-level input voltage	$V_{CC(A)}$ = 1.1 V to 1.95 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.3 × $V_{CC(A)}$	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.7	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V; $V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.9	V
V_{OH}	HIGH-level output voltage	V_I = V_{IH}				
		I_O = -20 μA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 1.1 V to 3.6 V	$V_{CC(Y)}$ - 0.11	-	-	V
		I_O = -1.1 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 1.1 V	0.6 × $V_{CC(Y)}$	-	-	V
		I_O = -1.7 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 1.4 V	0.93	-	-	V
		I_O = -1.9 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 1.65 V	1.17	-	-	V
		I_O = -2.3 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 2.3 V	1.77	-	-	V
		I_O = -3.1 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 2.3 V	1.67	-	-	V
		I_O = -2.7 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 3.0 V	2.40	-	-	V
		I_O = -4.0 mA; $V_{CC(A)}$ = $V_{CC(Y)}$ = 3.0 V	2.30	-	-	V

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{OL}	LOW-level output voltage	$V_I = V_{IL}$				
		I_O = 20 μA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	0.11	V
		I_O = 1.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V	-	-	0.33 × $V_{CC(Y)}$	V
		I_O = 1.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.4 V	-	-	0.41	V
		I_O = 1.9 mA; $V_{CC(A)} = V_{CC(Y)}$ = 1.65 V	-	-	0.39	V
		I_O = 2.3 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	-	-	0.36	V
		I_O = 3.1 mA; $V_{CC(A)} = V_{CC(Y)}$ = 2.3 V	-	-	0.50	V
		I_O = 2.7 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	-	-	0.36	V
		I_O = 4.0 mA; $V_{CC(A)} = V_{CC(Y)}$ = 3.0 V	-	-	0.50	V
I_I	input leakage current	V_I = 0 V to 3.6 V; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	±0.75	μA
I_{OFF}	power-off leakage current	A input; V_I = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 0 V to 3.6 V	-	-	±0.75	μA
		Y output; V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 3.6 V; V_I = 0 V or 3.6 V; $V_{CC(Y)}$ = 0 V	-	-	±0.75	μA
ΔI_{OFF}	additional power-off leakage current	A input; V_I = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 0.2 V; $V_{CC(Y)}$ = 0 V to 3.6 V	-	-	±0.75	μA
		Y output; V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V to 3.6 V; V_I = 0 V or 3.6 V; $V_{CC(Y)}$ = 0 V to 0.2 V	-	-	±0.75	μA
I_{CC}	supply current	port A; V_I = GND or $V_{CC(A)}$; I_O = 0 A				
		$V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	1.4	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(Y)}$ = 0 V	-	-	1.4	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 3.6 V	-	0.0	-	μA
		port Y; V_I = GND or $V_{CC(A)}$; I_O = 0 A				
		$V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	1.4	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(Y)}$ = 0 V	-	0.0	-	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(Y)}$ = 3.6 V	-	-	1.4	μA
		port A and port Y; V_I = GND or $V_{CC(A)}$; I_O = 0 A; $V_{CC(A)} = V_{CC(Y)}$ = 1.1 V to 3.6 V	-	-	1.4	μA
ΔI_{CC}	additional supply current	A input; $V_{CC(A)}$ = 3.3 V; $V_{CC(Y)}$ = 0 V to 3.6 V; $V_I = V_{CC(A)}$ - 0.6 V	-	-	75	μA

11. Dynamic characteristics

Table 8. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 5.

Symbol	Parameter	Conditions	25 °C			-40 °C to +85 °C		-40 °C to +125 °C		Unit
			Min	Typ[1]	Max	Min	Max	Min	Max	
C_L = 5 pF; $V_{CC(A)}$ = 1.1 V to 1.3 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.6	9.8	25.4	2.3	25.9	2.3	25.9	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.4	7.1	15.3	2.2	16.3	2.2	16.7	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.1	6.0	12.7	1.9	13.8	1.9	14.3	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.0	5.1	9.8	2.0	10.5	2.0	10.9	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.1	4.7	8.8	1.9	9.1	1.9	9.3	ns
C_L = 5 pF; $V_{CC(A)}$ = 1.4 V to 1.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.3	9.1	23.9	2.0	24.5	2.0	24.5	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.1	6.4	13.6	1.9	14.7	1.9	15.2	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	1.8	5.3	10.9	1.6	12.1	1.6	12.6	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.7	4.3	7.8	1.6	8.7	1.6	9.2	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	1.8	3.9	6.6	1.6	7.1	1.6	7.5	ns
C_L = 5 pF; $V_{CC(A)}$ = 1.65 V to 1.95 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.2	8.8	23.2	1.9	23.9	1.9	24.0	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.0	6.0	13.0	1.8	14.1	1.8	14.6	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	1.8	4.9	10.3	1.5	11.4	1.5	12.0	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.6	3.9	7.2	1.5	8.0	1.5	8.5	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	1.7	3.5	5.9	1.5	6.4	1.5	6.8	ns
C_L = 5 pF; $V_{CC(A)}$ = 2.3 V to 2.7 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.2	8.4	22.8	1.9	23.4	1.9	23.4	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	1.9	5.7	12.3	1.8	13.4	1.8	14.0	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	1.7	4.6	9.6	1.5	10.7	1.5	11.2	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.5	3.5	6.3	1.5	7.2	1.5	7.7	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	1.6	3.1	5.1	1.4	5.6	1.4	6.0	ns
C_L = 5 pF; $V_{CC(A)}$ = 3.0 V to 3.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.2	8.1	22.5	1.9	22.9	1.9	22.9	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	1.9	5.4	12.0	1.8	12.9	1.8	13.4	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	1.7	4.3	9.2	1.5	10.2	1.5	10.7	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.5	3.3	6.0	1.5	6.7	1.5	7.2	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	1.6	2.9	4.8	1.4	5.2	1.4	5.5	ns

Symbol	Parameter	Conditions	25 °C			-40 °C to +85 °C		-40 °C to +125 °C		Unit
			Min	Typ[1]	Max	Min	Max	Min	Max	
C_L = 10 pF; $V_{CC(A)}$ = 1.1 V to 1.3 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.6	10.7	27.1	2.5	27.6	2.5	27.6	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.6	7.7	16.7	2.3	17.5	2.3	17.6	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.7	6.6	13.4	2.4	14.2	2.4	14.7	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.2	5.6	10.3	2.2	11.0	2.2	11.4	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.5	5.3	9.5	2.2	9.7	2.2	10.0	ns
C_L = 10 pF; $V_{CC(A)}$ = 1.4 V to 1.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.4	10.0	25.6	2.2	26.1	2.2	26.1	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.4	7.0	15.0	2.0	15.8	2.0	16.4	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.4	5.9	11.6	2.1	12.5	2.1	13.1	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.0	4.8	8.4	1.9	9.2	1.9	9.7	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.2	4.4	7.4	1.9	7.7	1.9	8.1	ns
C_L = 10 pF; $V_{CC(A)}$ = 1.65 V to 1.95 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.3	9.7	24.8	2.1	25.5	2.1	25.7	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.3	6.6	14.3	2.0	15.3	2.0	15.8	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.3	5.5	11.0	2.0	11.9	2.0	12.5	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.9	4.4	7.7	1.8	8.6	1.8	9.0	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.1	4.0	6.6	1.8	7.1	1.8	7.4	ns
C_L = 10 pF; $V_{CC(A)}$ = 2.3 V to 2.7 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.3	9.3	24.4	2.1	25.1	2.1	25.1	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.2	6.3	13.6	1.9	14.6	1.9	15.1	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.2	5.1	10.3	2.0	11.2	2.0	11.7	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.8	4.1	6.9	1.8	7.7	1.8	8.2	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.0	3.6	5.8	1.7	6.3	1.7	6.6	ns
C_L = 10 pF; $V_{CC(A)}$ = 3.0 V to 3.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.3	9.0	24.2	2.1	24.6	2.1	24.6	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.2	6.0	13.3	1.9	14.1	1.9	14.6	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.2	4.9	9.9	2.0	10.6	2.0	11.2	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	1.8	3.9	6.5	1.8	7.3	1.8	7.7	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.0	3.5	5.4	1.7	5.8	1.7	6.2	ns

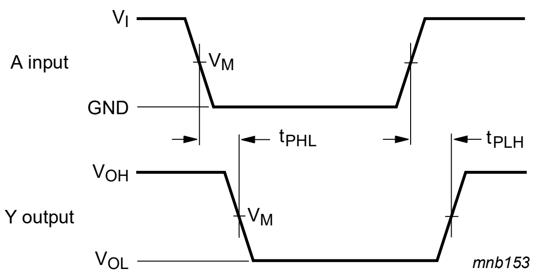
Symbol	Parameter	Conditions	25 °C			-40 °C to +85 °C		-40 °C to +125 °C		Unit
			Min	Typ[1]	Max	Min	Max	Min	Max	
C_L = 15 pF; $V_{CC(A)}$ = 1.1 V to 1.3 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	3.0	11.5	28.6	2.8	29.2	2.8	29.2	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	3.1	8.3	17.3	2.7	18.6	2.7	19.1	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.8	7.1	14.1	2.7	15.2	2.7	15.8	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.6	6.1	11.1	2.7	11.6	2.7	12.1	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.9	5.7	9.9	2.6	10.3	2.6	10.6	ns
C_L = 15 pF; $V_{CC(A)}$ = 1.4 V to 1.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.8	10.8	27.1	2.6	27.7	2.6	27.7	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.8	7.6	15.7	2.4	17.0	2.4	17.6	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.5	6.3	12.3	2.4	13.5	2.4	14.1	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.3	5.3	9.2	2.4	9.9	2.4	10.3	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.6	4.9	7.8	2.3	8.3	2.3	8.7	ns
C_L = 15 pF; $V_{CC(A)}$ = 1.65 V to 1.95 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.7	10.5	26.4	2.5	27.1	2.5	27.3	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.7	7.2	15.0	2.3	16.4	2.3	17.0	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.4	6.0	11.7	2.3	12.8	2.3	13.5	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.2	4.9	8.5	2.2	9.2	2.2	9.7	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.5	4.5	7.1	2.2	7.7	2.2	8.0	ns
C_L = 15 pF; $V_{CC(A)}$ = 2.3 V to 2.7 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.6	10.1	26.0	2.4	26.7	2.4	26.7	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.7	6.9	14.3	2.3	15.7	2.3	16.3	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.4	5.6	10.9	2.2	12.1	2.2	12.7	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.1	4.5	7.6	2.2	8.4	2.2	8.9	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.4	4.1	6.2	2.1	6.8	2.1	7.2	ns
C_L = 15 pF; $V_{CC(A)}$ = 3.0 V to 3.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	2.6	9.8	25.7	2.4	26.2	2.4	26.2	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	2.7	6.6	14.0	2.3	15.2	2.3	15.7	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	2.4	5.4	10.5	2.2	11.6	2.2	12.1	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.1	4.3	7.3	2.2	7.9	2.2	8.4	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	2.4	3.9	5.9	2.1	6.4	2.1	6.8	ns

Symbol	Parameter	Conditions	25 °C			-40 °C to +85 °C		-40 °C to +125 °C		Unit
			Min	Typ[1]	Max	Min	Max	Min	Max	
C_L = 30 pF; $V_{CC(A)}$ = 1.1 V to 1.3 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	3.7	13.7	32.9	3.5	33.5	3.5	33.5	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	3.6	9.8	19.5	3.6	20.9	3.6	21.4	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	3.7	8.4	15.9	3.5	17.0	3.5	17.7	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	3.0	7.2	12.2	3.4	12.7	3.4	13.2	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	3.8	6.8	10.9	3.4	12.2	3.4	12.5	ns
C_L = 30 pF; $V_{CC(A)}$ = 1.4 V to 1.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	3.5	13.1	31.5	3.2	32.0	3.2	32.0	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	3.3	9.1	17.8	3.3	19.2	3.3	19.9	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	3.4	7.6	14.2	3.2	15.4	3.2	16.0	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.8	6.4	10.3	3.1	11.0	3.1	11.5	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	3.5	5.9	8.9	3.1	10.1	3.1	10.5	ns
C_L = 30 pF; $V_{CC(A)}$ = 1.65 V to 1.95 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	3.4	12.7	30.7	3.1	31.5	3.1	31.5	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	3.2	8.8	17.2	3.2	18.7	3.2	19.3	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	3.3	7.3	13.5	3.1	14.7	3.1	15.4	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.7	6.0	9.6	3.0	10.4	3.0	10.9	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	3.4	5.6	8.2	2.9	9.4	2.9	9.8	ns
C_L = 30 pF; $V_{CC(A)}$ = 2.3 V to 2.7 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	3.3	12.4	30.3	3.1	31.0	3.1	31.0	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	3.2	8.4	16.5	3.1	18.0	3.1	18.7	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	3.2	6.9	12.8	3.0	14.0	3.0	14.6	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.6	5.6	8.8	2.9	9.6	2.9	10.1	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	3.3	5.2	7.3	2.9	8.5	2.9	9.0	ns
C_L = 30 pF; $V_{CC(A)}$ = 3.0 V to 3.6 V										
t_{pd}	propagation delay	A to Y; see Fig. 4 [2]								
		$V_{CC(Y)}$ = 1.1 V to 1.3 V	3.3	12.0	30.0	3.1	30.5	3.1	30.5	ns
		$V_{CC(Y)}$ = 1.4 V to 1.6 V	3.2	8.1	16.2	3.1	17.5	3.1	18.1	ns
		$V_{CC(Y)}$ = 1.65 V to 1.95 V	3.2	6.7	12.4	3.0	13.4	3.0	14.1	ns
		$V_{CC(Y)}$ = 2.3 V to 2.7 V	2.6	5.5	8.5	2.9	9.1	2.9	9.6	ns
		$V_{CC(Y)}$ = 3.0 V to 3.6 V	3.2	5.0	7.0	2.9	8.1	2.9	8.5	ns

Symbol	Parameter	Conditions	25 °C			-40 °C to +85 °C		-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 $V_{CC(A)}$ [3][4]								
		$V_{CC(A)} = V_{CC(Y)}$ = 1.2 V	-	3.8	-	-	-	-	-	pF
		$V_{CC(A)} = V_{CC(Y)}$ = 1.5 V	-	3.8	-	-	-	-	-	pF
		$V_{CC(A)} = V_{CC(Y)}$ = 1.8 V	-	4.1	-	-	-	-	-	pF
		$V_{CC(A)} = V_{CC(Y)}$ = 2.5 V	-	4.2	-	-	-	-	-	pF
		$V_{CC(A)} = V_{CC(Y)}$ = 3.3 V	-	4.6	-	-	-	-	-	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 = 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 the outputs.

11.1. Waveforms and test circuit

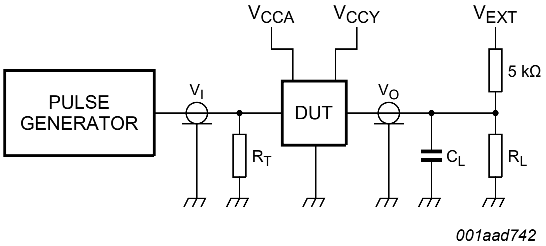


Measurement points are given in Table 9.
Logic levels: V_{OL} and V_{OH} are typical output voltage drop that occur with the output load.

Fig. 4. The data input (A) to output (Y) propagation delays

Table 9. Measurement points

Supply voltage	Output	Input		
$V_{CC(A)}/V_{CC(Y)}$	V_M	V_M	V_I	$t_r = t_f$
1.1 V to 3.6 V	0.5 × $V_{CC(Y)}$	0.5 × $V_{CC(A)}$	$V_{CC(A)}$	≤ 3.0 ns



Test data is given in Table 10.
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. 5. Test circuit for measuring switching times

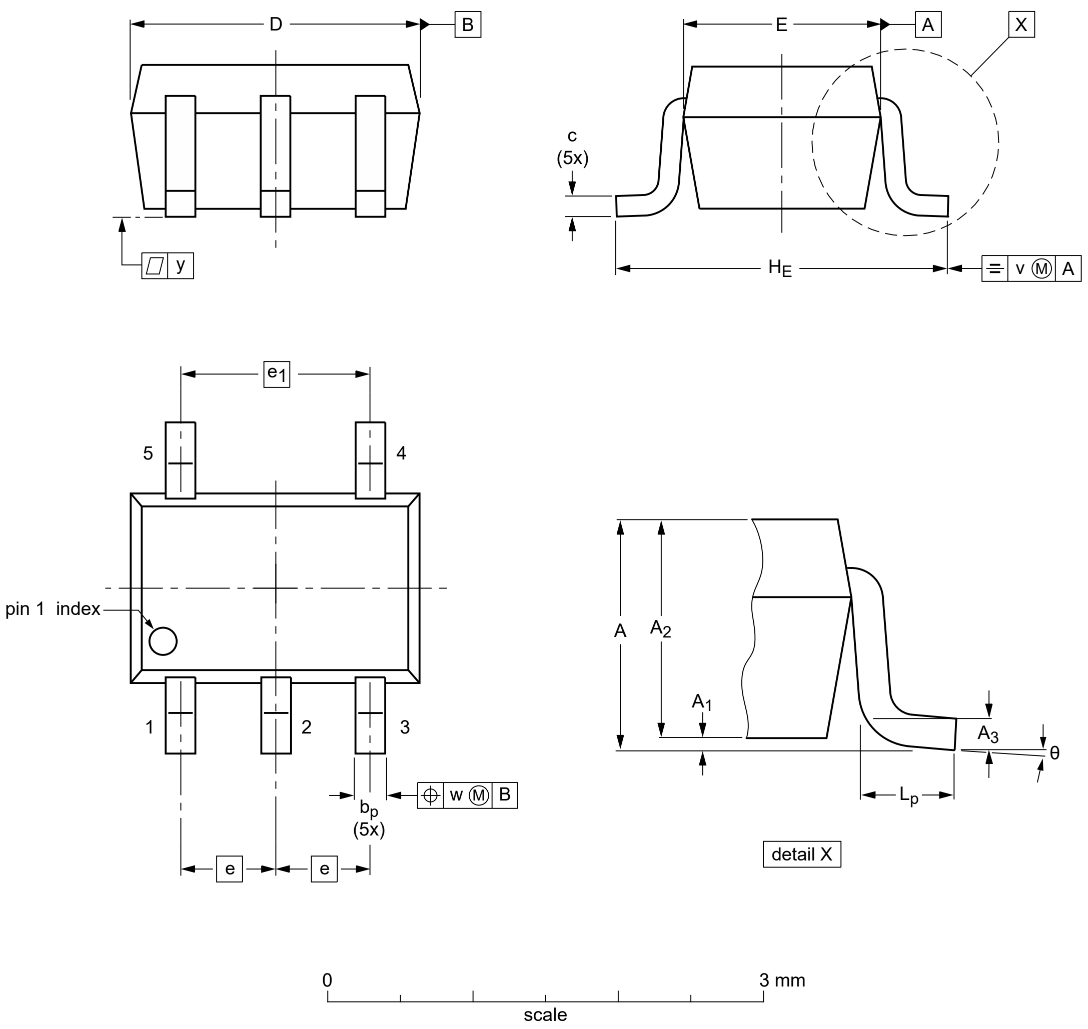
Table 10. Test data

Supply voltage	Load		V_{EXT}
$V_{CC(A)}/V_{CC(Y)}$	C_L	R_L [1]	t_{PLH}, t_{PHL}
1.1 V to 3.6 V	5 pF, 10 pF, 15 pF and 30 pF	5 kΩ or 1 MΩ	open

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

12. Package outline

TSSOP5: plastic thin shrink small outline package; 5 leads; body width 1.25 mm **SOT353-1**



Dimensions (mm are the original dimensions)

Unit		A	A1	A2	A3	bp	c	D(1)	E(1)	e	e1	HE	Lp	v	w	y	θ
mm	max	1.1	0.1	1.0	0.15	0.30	0.25	2.2	1.35	0.65	1.3	2.4	0.46	0.3	0.1	0.1	8°
	min	0.8	0	0.8		0.15	0.08	1.8	1.15			1.8	0.26				0°

Note
1. Plastic or metal protrusions of 0.2 mm maximum per side are not included.

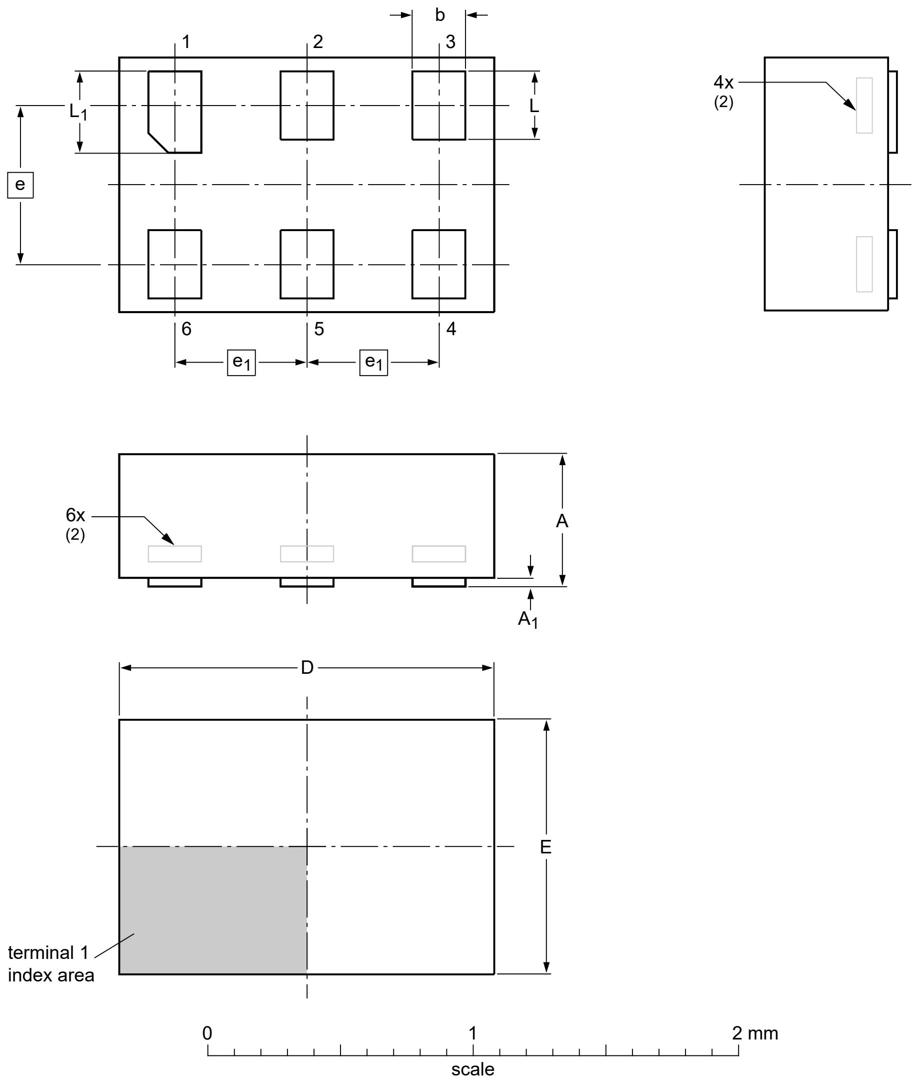
sot353-1_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT353-1		MO-203	SC-88A			~~21-12-15~~ 21-12-16

Fig. 6. Package outline SOT353-1 (TSSOP5)

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)	A_1	b	D	E	e	e_1	L	L_1
	max	0.5	0.04	0.25	1.50	1.05			0.35	0.40
mm	nom			0.20	1.45	1.00	0.6	0.5	0.30	0.35
	min			0.17	1.40	0.95			0.27	0.32

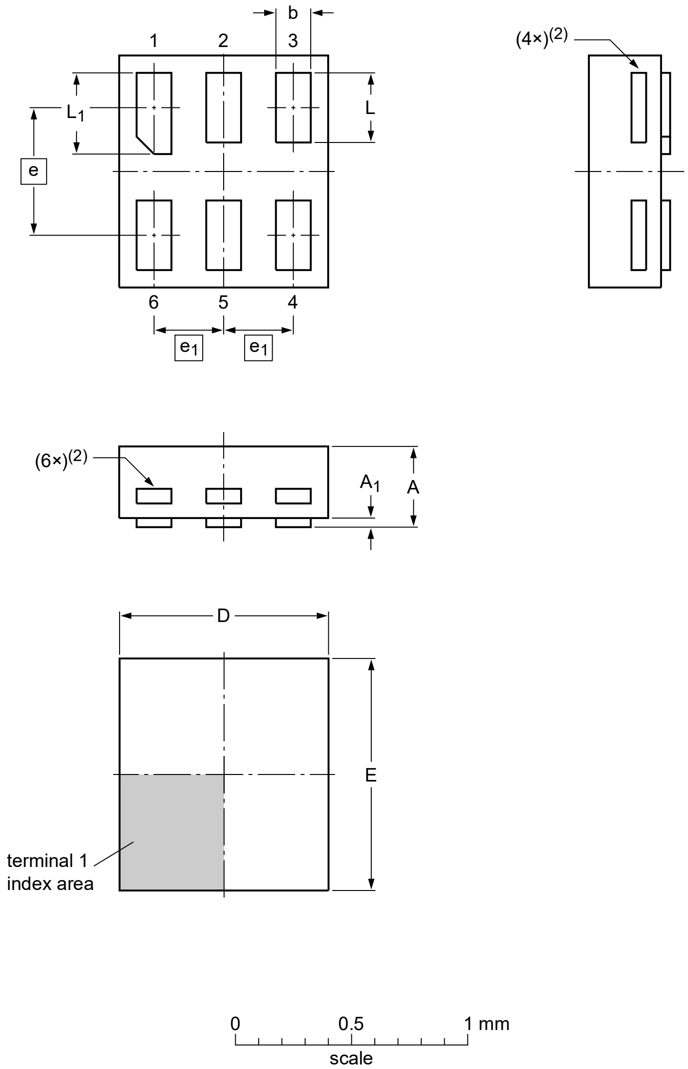
Notes
1. Including plating thickness.
2. Can be visible in some manufacturing processes.

sot886_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT886		MO-252				~~04-07-22~~ 12-01-05

Fig. 7. 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**



Dimensions

Unit		$A^{(1)}$	A_1	b	D	E	e	e_1	L	L_1
mm	max	0.35	0.04	0.20	0.95	1.05			0.35	0.40
	nom			0.15	0.90	1.00	0.55	0.3	0.30	0.35
	min			0.12	0.85	0.95			0.27	0.32

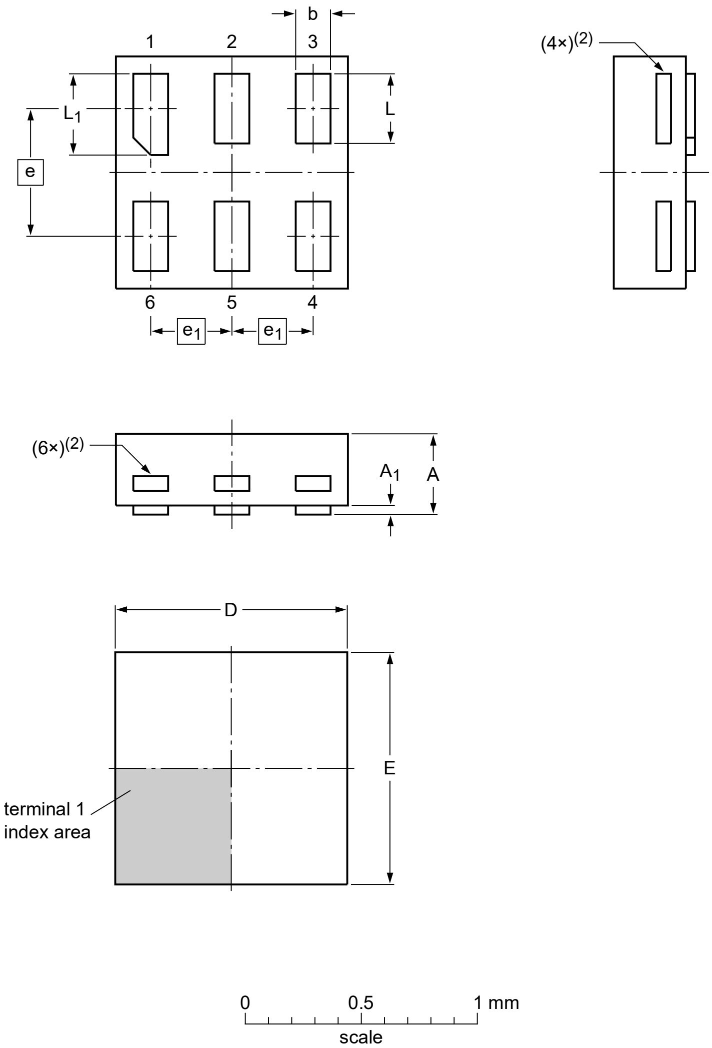
Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

sot1115_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1115						~~10-04-02~~ 10-04-07

Fig. 8. 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**



Dimensions

Unit		A(1)	A1	b	D	E	e	e1	L	L1
mm	max	0.35	0.04	0.20	1.05	1.05			0.35	0.40
	nom			0.15	1.00	1.00	0.55	0.35	0.30	0.35
	min			0.12	0.95	0.95			0.27	0.32

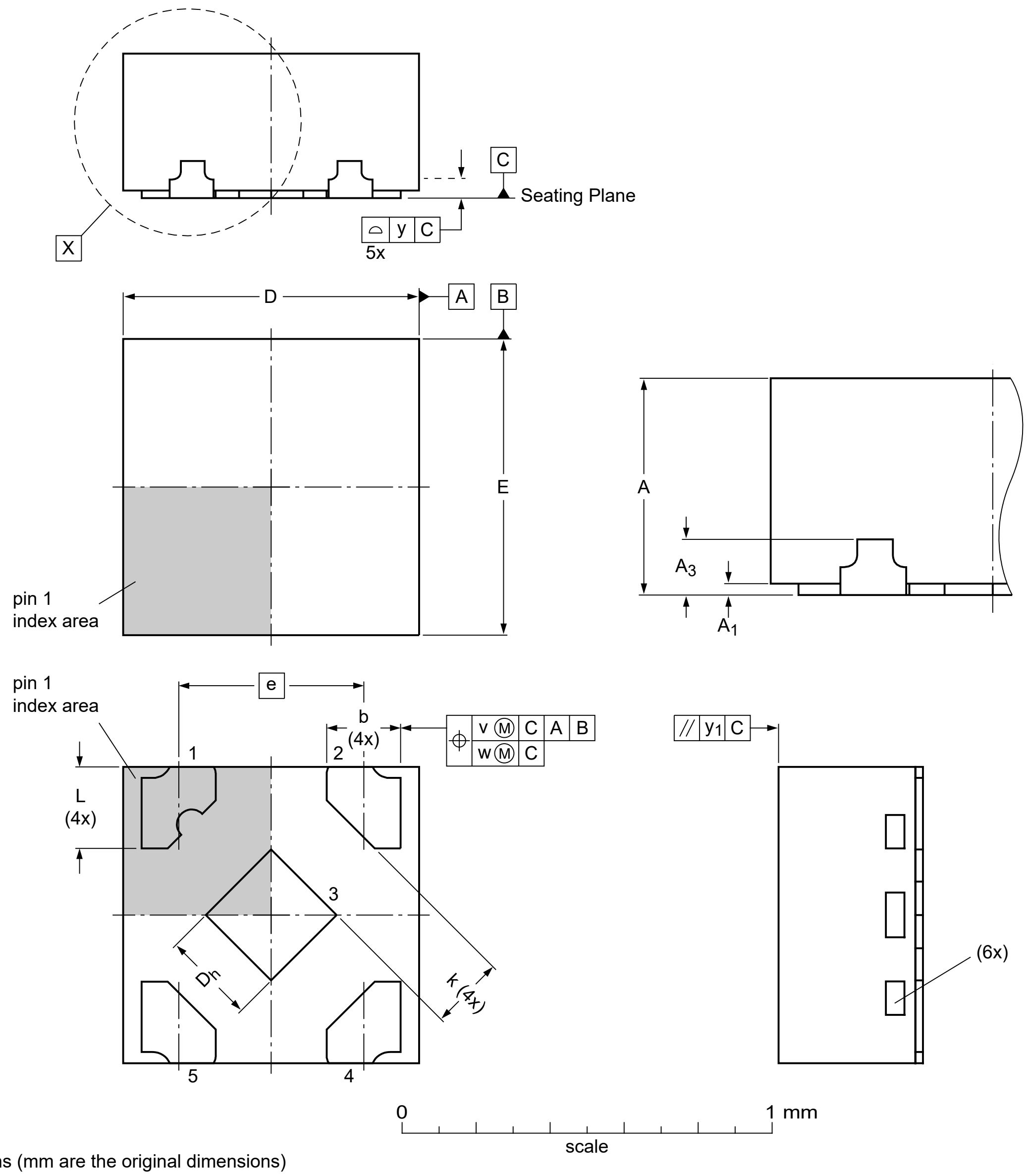
Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

sot1202_po

Outline version	References IEC	References JEDEC	References JEITA		European projection	Issue date
SOT1202						~~10-04-02~~ 10-04-06

Fig. 9. Package outline SOT1202 (XSON6)

X2SON5: plastic thermal enhanced extremely thin small outline package; no leads; 5 terminals; body 0.8 x 0.8 x 0.32 mm **SOT1226-3**



Dimensions (mm are the original dimensions)

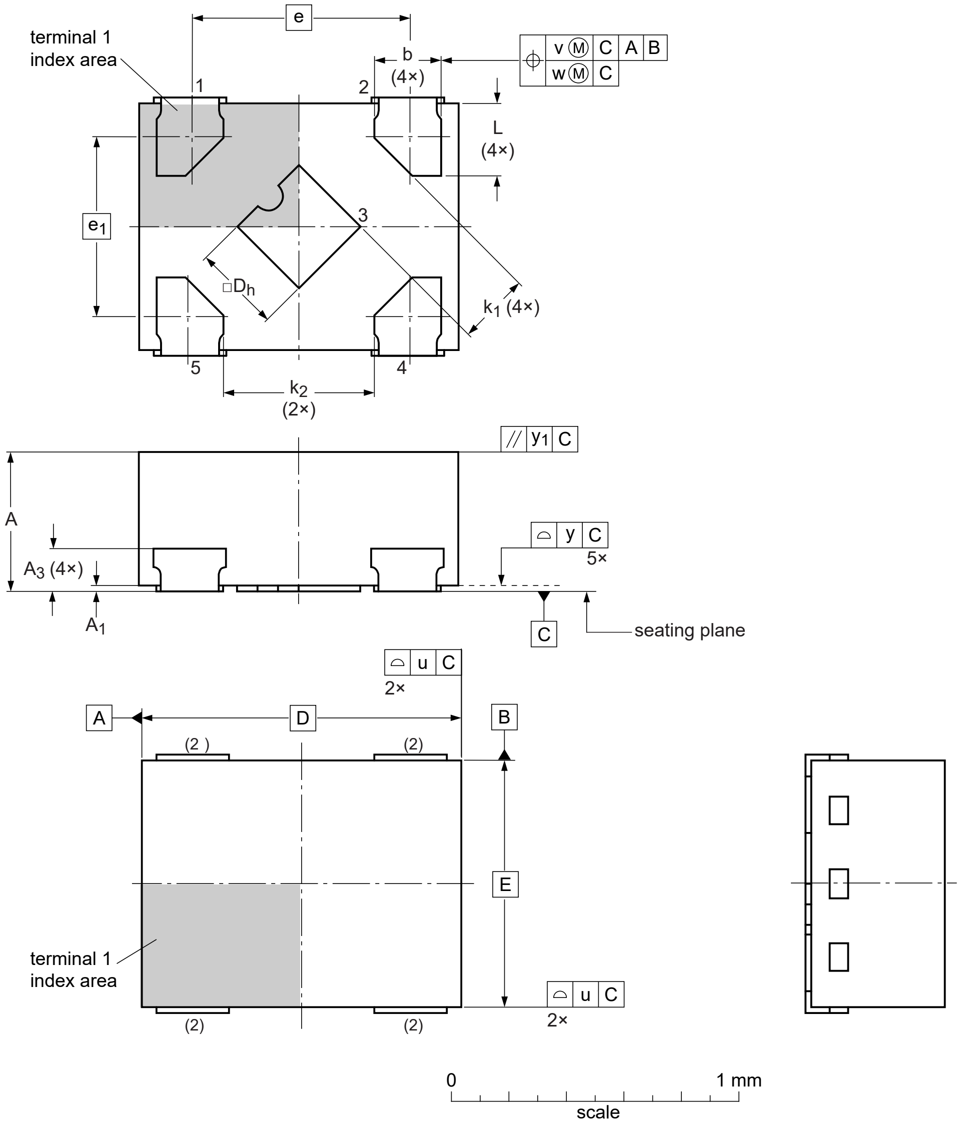
Unit		A	A_1	A_3	D	D_h	E	b	e	K	L	v	w	y	y_1
mm	max	0.35	0.04	0.10 (Typ.)	0.85	0.30	0.85	0.25			0.27				
	nom	0.32	0.02		0.80	0.25	0.80	0.20	0.50		0.22	0.1	0.05	0.05	0.05
	min	0.30	0.00		0.75	0.20	0.75	0.15		0.20	0.17				

sot1226-3_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	EIAJ			
SOT1226-3		- - -				~~19-11-06~~ 19-11-07

Fig. 10. Package outline SOT1226-3 (X2SON5)

XSON5: Plastic thermal enhanced extremely thin small outline package with side-wettable flanks (SWF); no leads; 5 terminals; body 1.1 × 0.85 × 0.5 mm **SOT8065-1**



Dimensions (mm are the original dimensions)

Unit		A(1)	A1	A3	b	D(1)	Dh	E(1)	e	e1	k1	k2	L	u	v	w	y	y1
mm	max	0.50	0.040		0.28		0.35						0.30					
	nom	0.47	0.020	0.135 (typ)	0.23	1.10	0.30	0.85	0.75	0.6			0.25	0.05	0.1	0.05	0.05	0.05
	min	0.44	0.005		0.20		0.27				0.2	0.45	0.22					

Note:
1. Plastic or metal protrusions per side are not included.
2. Side wettable flanks (SWF), protrusion max. 0.02 mm.

sot8065-1_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT8065-1		MO-340				~~24-07-09~~ 24-08-27

Fig. 11. Package outline SOT8065-1 (XSON5)

13. Abbreviations

Table 11. Abbreviations

Acronym	Description
ANSI	American National Standards Institute
CDM	Charged Device Model
DUT	Device Under Test
ESD	ElectroStatic Discharge
ESDA	ElectroStatic Discharge Association
HBM	Human Body Model
JEDEC	Joint Electron Device Engineering Council

14. Revision history

Table 12. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AUP1T34 v.10	20240923	Product data sheet	-	74AUP1T34 v.9
Modifications:	• Type number 74AUP1T34GZ (SOT8065-1/XSON5) added.			
74AUP1T34 v.9	20230717	Product data sheet	-	74AUP1T34 v.8
Modifications:	• Section 2: ESD specification updated according to the latest JEDEC standard.			
74AUP1T34 v.8	20220125	Product data sheet	-	74AUP1T34 v.7
Modifications:	• Section 2 updated. • Fig. 6: Package outline drawing for SOT353-1 has changed.			
74AUP1T34 v.7	20210518	Product data sheet	-	74AUP1T34 v.6
Modifications:	• SOT1226 (X2SON5) package changed to SOT1226-3 (X2SON5) package. • Type number 74AUP1T34GF (SOT891/XSON6) removed. • Section 1 updated. • Table 5: Derating values for P_{tot} total power dissipation updated.			
74AUP1T34 v.6	20190128	Product data sheet	-	74AUP1T34 v.5
Modifications:	• 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.			
74AUP1T34 v.5	20130904	Product data sheet	-	74AUP1T34 v.4
Modifications:	• Added type number 74AUP1T34GX (SOT1226)			
74AUP1T34 v.4	20120316	Product data sheet	-	74AUP1T34 v.3
Modifications:	• Package outline drawing of SOT886 (Fig. 7) modified.			
74AUP1T34 v.3	20111128	Product data sheet	-	74AUP1T34 v.2
Modifications:	• Legal pages updated.			
74AUP1T34 v.2	20100819	Product data sheet	-	74AUP1T34 v.1
74AUP1T34 v.1	20061204	Product data sheet	-	-

15. 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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