74AUP2G58

Low-power dual PCB configurable multiple function gate

1. General description

The 74AUP2G58 is a dual configurable multiple function gate with Schmitt-trigger inputs. Each gate within the device can be configured as any of the following logic functions AND, OR, NAND, NOR, XOR, 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
- High noise immunity
- ESD protection:
    - HBM JESD22-A114F 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

nexperia

3. Ordering information

Table 1. Ordering information

| Type number	Package			
	Temperature range	**Name**	**Description**	**Version**
74AUP2G58DP	−40 °C to +125 °C	TSSOP10	plastic thin shrink small outline package; 10 leads; body width 3 mm	SOT552-1
74AUP2G58GU	−40 °C to +125 °C	XQFN10	plastic, extremely thin quad flat package; no leads; 10 terminals; body 1.40 × 1.80 × 0.50 mm	SOT1160-1
74AUP2G58GF	−40 °C to +125 °C	XSON10	plastic extremely thin small outline package; no leads; 10 terminals; body 1.0 × 1.7 × 0.5 mm	SOT1081-2

4. Marking

Table 2. Marking

| Type number	Marking code[1]
74AUP2G58DP	aK
74AUP2G58GU	aK
74AUP2G58GF	aK

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

5. Functional diagram
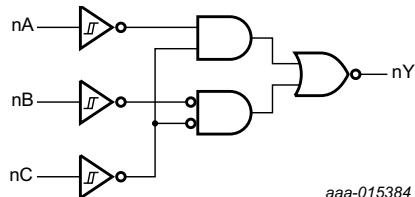
aaa-015384

Fig 1. Logic symbol (one gate)

6. Pinning information

6.1 Pinning

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1A	1	10 V_{CC}

1A 1   10 V_{CC}
1B 2   9 1Y
1C 3   8 2C
2Y 4   7 2B
GND 5   6 2A

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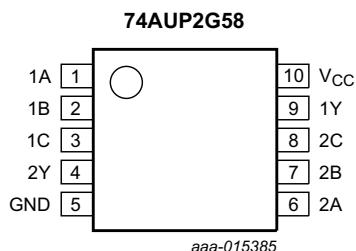
Fig 2.　Pin configuration SOT552-1 (TSSOP10)

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terminal 1
index area

1A   V_{CC}   1Y

10   9   8

1B 1   7 2C
1C 2   6 2B

3   4   5

2Y   GND   2A

Transparent top view

aaa-015387
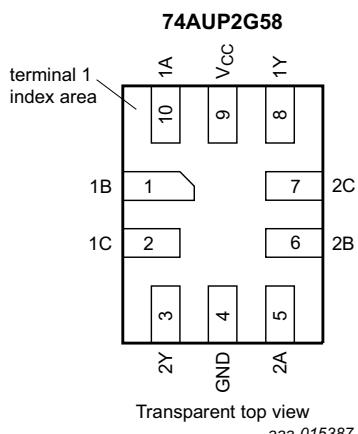
Fig 3.　Pin configuration SOT1160-1 (XQFN10)

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1A 1   10 V_{CC}
1B 2   9 1Y
1C 3   8 2C
2Y 4   7 2B
GND 5   6 2A

Transparent top view

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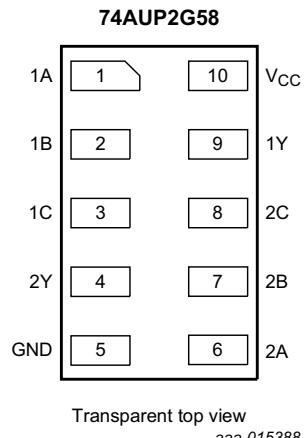
Fig 4.　Pin configuration SOT1081-2 (XSON10)

6.2 Pin description

Table 3. Pin description

Symbol	Pin		Description
	SOT552-1 and SOT1081-2	**SOT1160-1**	
1A, 2A	1, 6	10, 5	data input
1B, 2B	2, 7	1, 6	data input
1C, 2C	3, 8	2, 7	data input
1Y, 2Y	9, 4	8, 3	data output
GND	5	4	ground (0 V)
V_{CC}	10	9	supply voltage

7. Functional description

Table 4. Function table[1]

Input			Output
nC	**nB**	**nA**	**nY**
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.

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
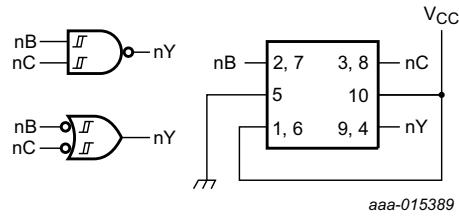
Pin numbers are not valid for SOT1160-1 package

**Fig 5.** **2-input NAND gate or 2-input OR with both inputs inverted**
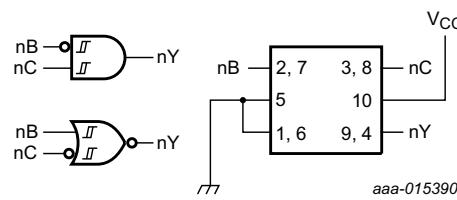
Pin numbers are not valid for SOT1160-1 package

Fig 6. **2-input AND gate with inverted B input or 2-input NOR gate with inverted C input**
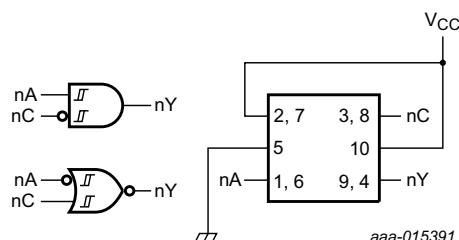
Pin numbers are not valid for SOT1160-1 package

Fig 7. **2-input AND gate with inverted C input or 2-input NOR gate with inverted A input**
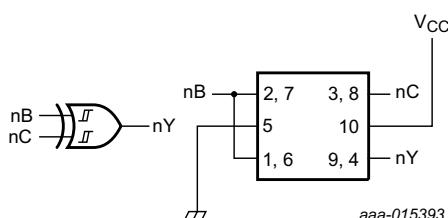

Pin numbers are not valid for SOT1160-1 package

Fig 8. **2-input OR gate or 2-input NAND gate with both inputs inverted**
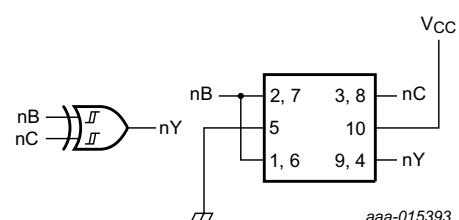

Pin numbers are not valid for SOT1160-1 package

Fig 9. **2-input XOR gate**
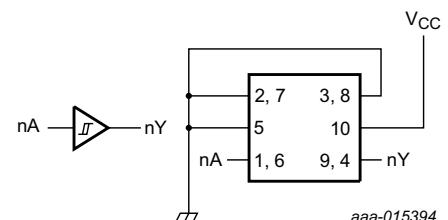
Pin numbers are not valid for SOT1160-1 package

Fig 10. **Buffer**
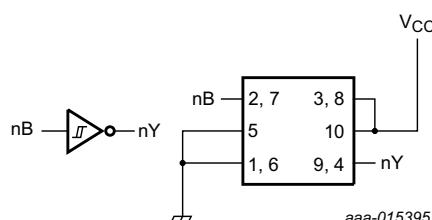
Pin numbers are not valid for SOT1160-1 package

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	$V_O < 0$ 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 TSSOP10 package: above 125°C the value of P_{tot} derates linearly with 8.33 mW/K.
For XQFN10 (SOT1160-1) package: above 128 °C the value of P_{tot} derates linearly with 11.5 mW/K.
For XSON10 package: 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

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	$0.75 \times V_{CC}$	-	-	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	$V_I = V_{T+}$ 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	-	-	$0.3 \times V_{CC}$	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	-	1.7	-	pF

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

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
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	$0.7 \times V_{CC}$	-	-	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
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	-	-	$0.3 \times V_{CC}$	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

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

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
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	$0.6 \times V_{CC}$	-	-	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_{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	-	-	$0.33 \times V_{CC}$	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
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	nA, nB and nC to nY; [2] see Figure 12							
		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	nA, nB and nC to nY; [2] see Figure 12							
		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	nA, nB and nC to nY; [2] see Figure 12							
		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
C$_L$ = 30 pF									
t$_{pd}$	propagation delay	nA, nB and nC to nY; [2] see Figure 12							
		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

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 = 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	-	2.7	-	-	-	-	pF
		V_{CC} = 1.1 V to 1.3 V	-	2.8	-	-	-	-	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] 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.

12. Waveforms
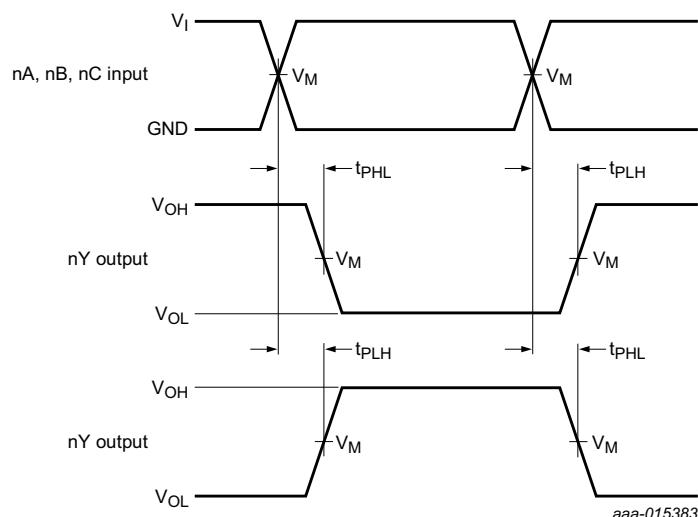
Measurement points are given in Table 10.

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

Fig 12. **Input nA, nB and nC to output nY propagation delay times**

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	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	V_{CC}	≤ 3.0 ns
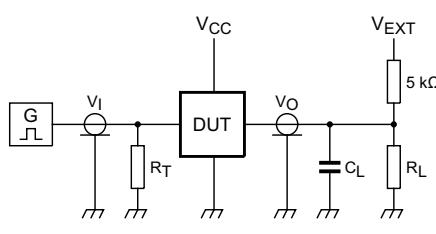
Test data is given in Table 11.

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 13. 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 kΩ, for measuring propagation delays, setup and hold times and pulse width R_L = 1 MΩ.

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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	$(V_{T+} - V_{T-})$; 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 %.
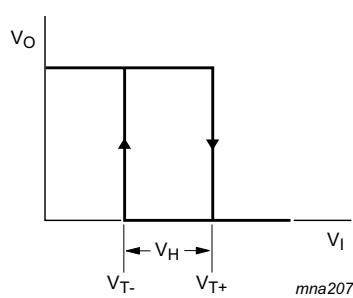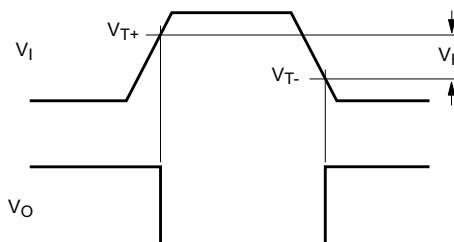
Fig 15. Definition of V_{T+}, V_{T-} and V_H

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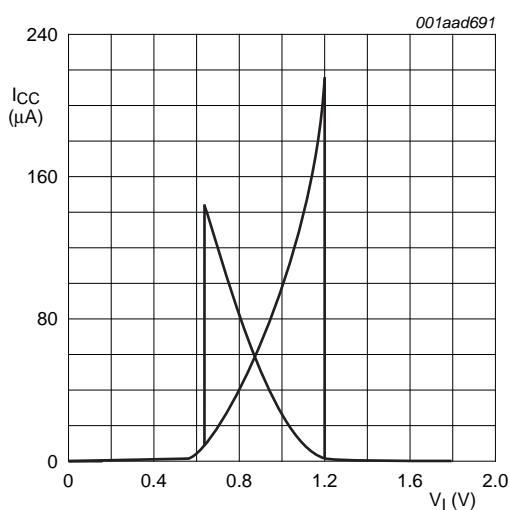
Fig 16. Typical transfer characteristics; V_{CC} = 1.8 V

001aad691
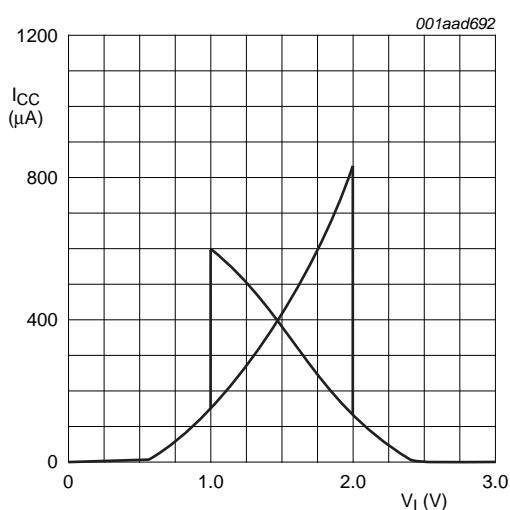
Fig 17. Typical transfer characteristics; V_{CC} = 3.0 V

001aad692

15. Package outline

TSSOP10: plastic thin shrink small outline package; 10 leads; body width 3 mm

SOT552-1

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A₁	A₂	A₃	bₚ	c	D[1]	E[2]	e	Hₑ	L	Lₚ	v	w	y	Z[1]	θ
mm	1.1	0.15 0.05	0.95 0.80	0.25	0.30 0.15	0.23 0.15	3.1 2.9	3.1 2.9	0.5	5.0 4.8	0.95	0.7 0.4	0.1	0.1	0.1	0.67 0.34	6° 0°

Notes

1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.

2. Plastic or metal protrusions of 0.25 mm maximum per side are not included.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT552-1						~~99-07-29~~ 03-02-18
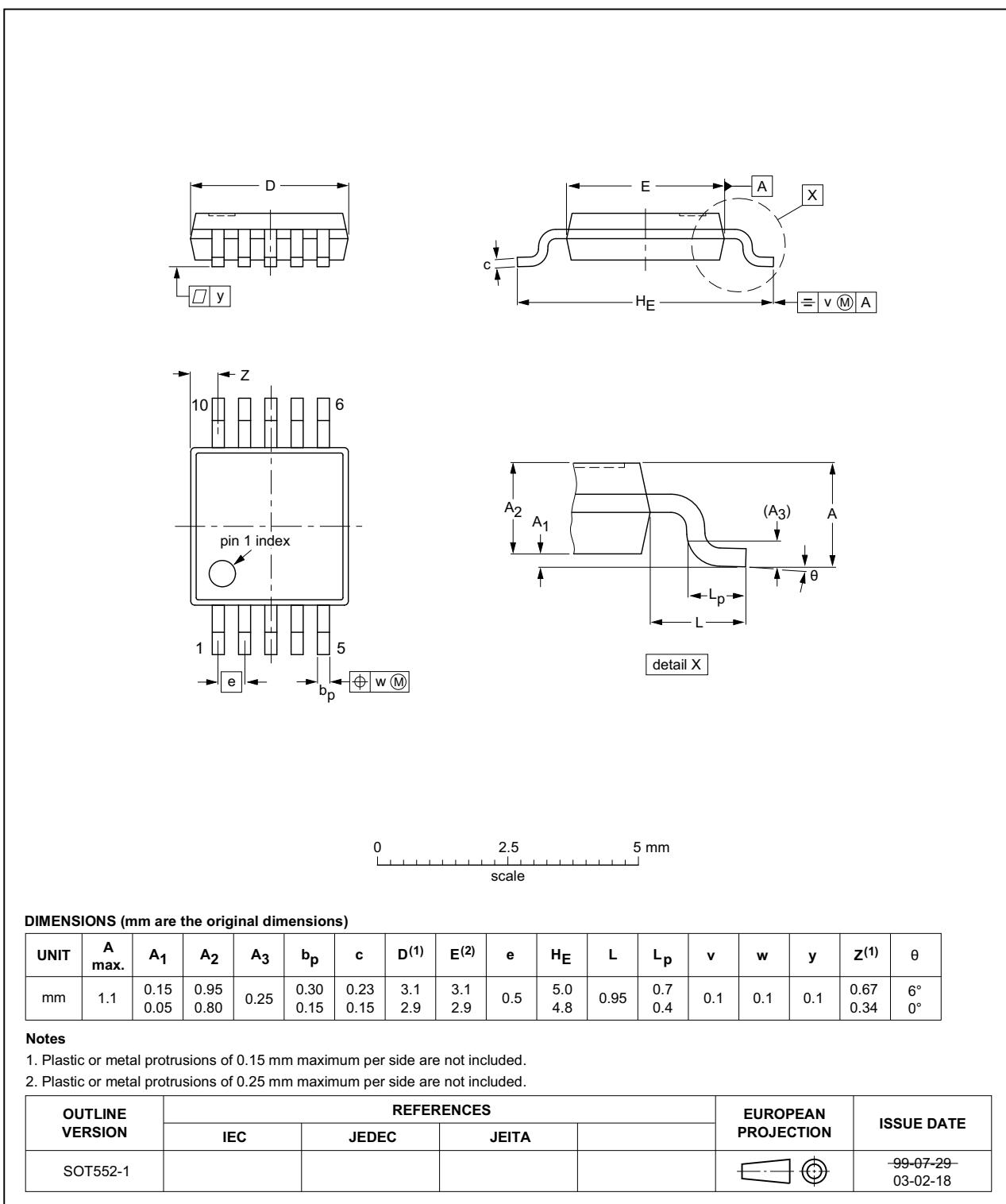
Fig 18. Package outline SOT552-1 (TSSOP10)

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XQFN10: plastic, extremely thin quad flat package; no leads;
10 terminals; body 1.40 x 1.80 x 0.50 mm

SOT1160-1

Dimensions															
Unit[1]	A	A_1	A_3	b	D	E	e	e_1	e_2	L	L_1	v	w	y	y_1
mm max	0.5	0.05		0.25	1.5	1.9				0.45	0.55				
nom			0.127	0.20	1.4	1.8	0.4	0.8	0.4	0.40	0.50	0.1	0.05	0.05	0.05
min		0.00		0.15	1.3	1.7				0.35	0.45				

Note
1. Plastic or metal protrusions of 0.075 mm maximum per side are not included.

sot1160-1_po

Outline version	References			European projection	Issue date
	IEC	JEDEC	JEITA		
SOT1160-1	- - -	- - -	- - -		~~09-12-28~~ 09-12-29
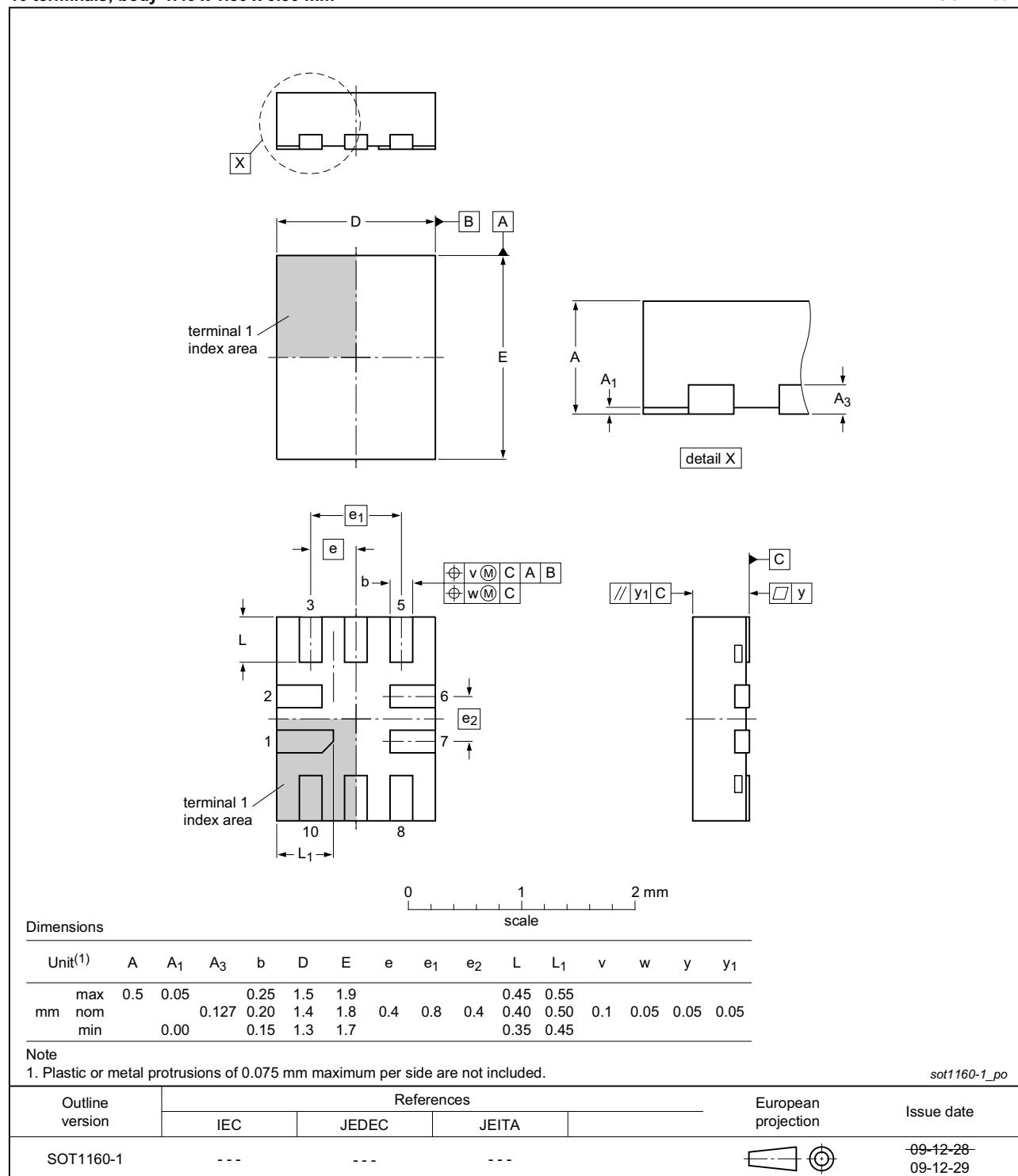
Fig 19. Package outline SOT1160-1 (XQFN10)

XSON10: plastic extremely thin small outline package; no leads;
10 terminals; body 1.0 x 1.7 x 0.5 mm

SOT1081-2

Unit[1]	A	A₁	b	c	D	E	e	e₁	k	L	L₁	v	w	y	y₁
mm max	0.5	0.05	0.20		1.8	1.1				0.40	0.45				
nom			0.15	0.127	1.7	1.0	0.35	1.4		0.35	0.40	0.1	0.05	0.05	0.05
min			0.00	0.10	1.6	0.9			0.2	0.30	0.35				

Note
1. Plastic or metal protrusions of 0.075 mm maximum per side are not included.

sot1081-2_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1081-2	- - -	- - -	- - -			~~10-11-08~~ 11-03-30
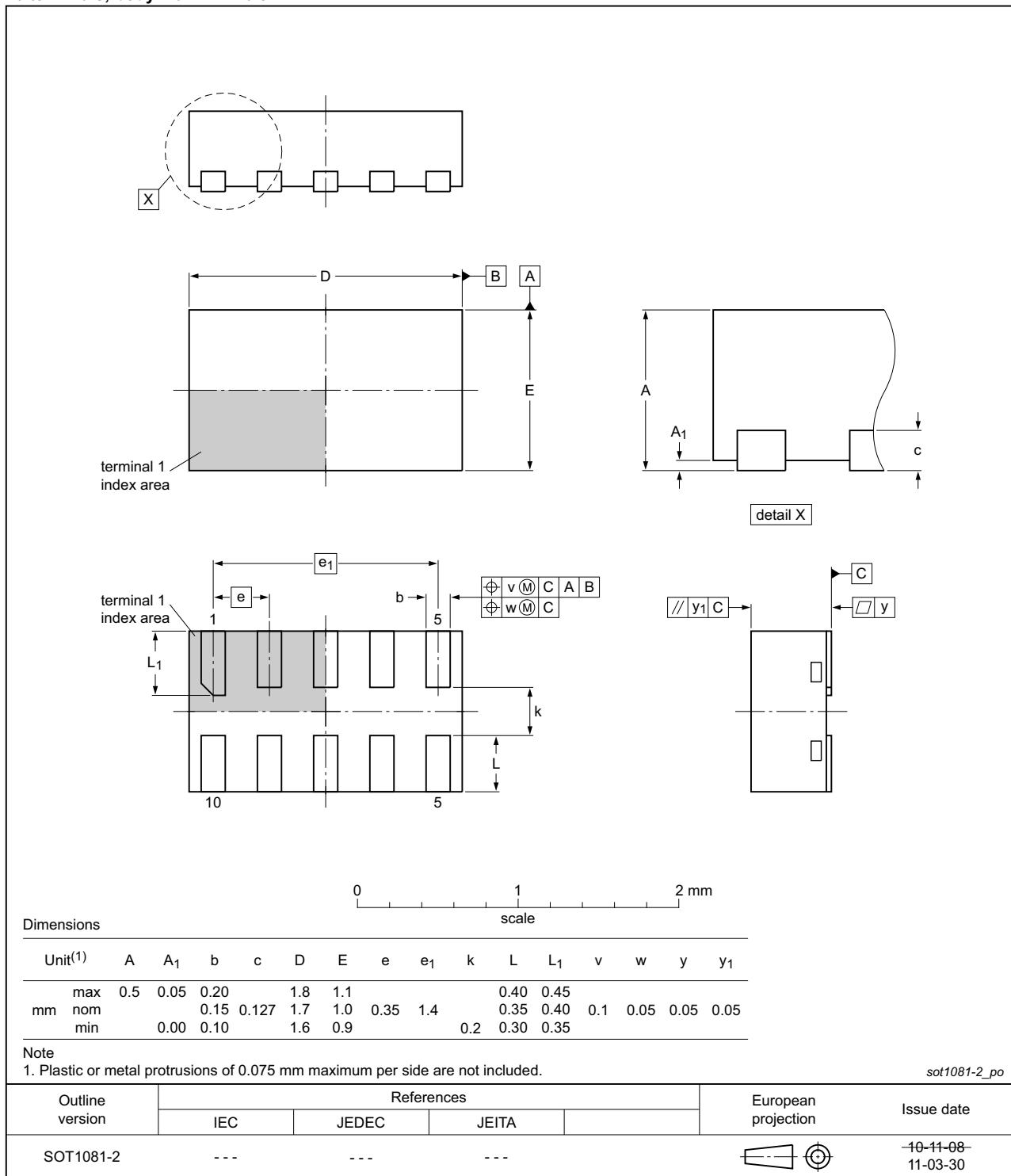
Fig 20. Package outline SOT1081-2 (XSON10)

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16. Abbreviations

Table 13.   Abbreviations

Acronym	Description
CDM	Charged Device Model
DUT	Device Under Test
ESD	ElectroStatic Discharge
HBM	Human Body Model
MM	Machine Model
PCB	Printed-Circuit Board

17. Revision history

Table 14.   Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AUP2G58 v.2	20151202	Product data sheet	-	74AUP2G58 v.1
Modifications:	• Maximum value temperature range TSSOP10 (74AUP2G58DP) changed from 85 °C to 125 °C. • Removed 74AUP2G58GM (SOT1049-3).			
74AUP2G58 v.1	20141104	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".

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20. Contents

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