

# 74HC251; 74HCT251

8-input multiplexer; 3-state

Rev. 3 — 9 July 2013

Product data sheet

## 1. General description

The 74HC251; 74HCT251 is an 8-bit multiplexer with eight binary inputs (I0 to I7), three select inputs (S0 to S2) and an output enable input ( $\overline{OE}$ ). The select inputs select one of the eight binary inputs and route it to the complementary outputs (Y and  $\overline{Y}$ ). A HIGH on  $\overline{OE}$  causes the outputs to assume a high-impedance OFF-state. Inputs include clamp diodes that enable the use of current limiting resistors to interface inputs to voltages in excess of  $V_{CC}$ .

## 2. Features and benefits

- Input levels:
  - ◆ For 74HC251: CMOS level
  - ◆ For 74HCT251: TTL level
- Low-power dissipation
- Non-inverting data path
- Specified in compliance with JEDEC standard no. 7A
- ESD protection:
  - ◆ HBM JESD22-A114F exceeds 2 000 V
  - ◆ MM JESD22-A115-A exceeds 200 V
- Multiple package options
- Specified from  $-40\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$  and from  $-40\text{ }^{\circ}\text{C}$  to  $+125\text{ }^{\circ}\text{C}$

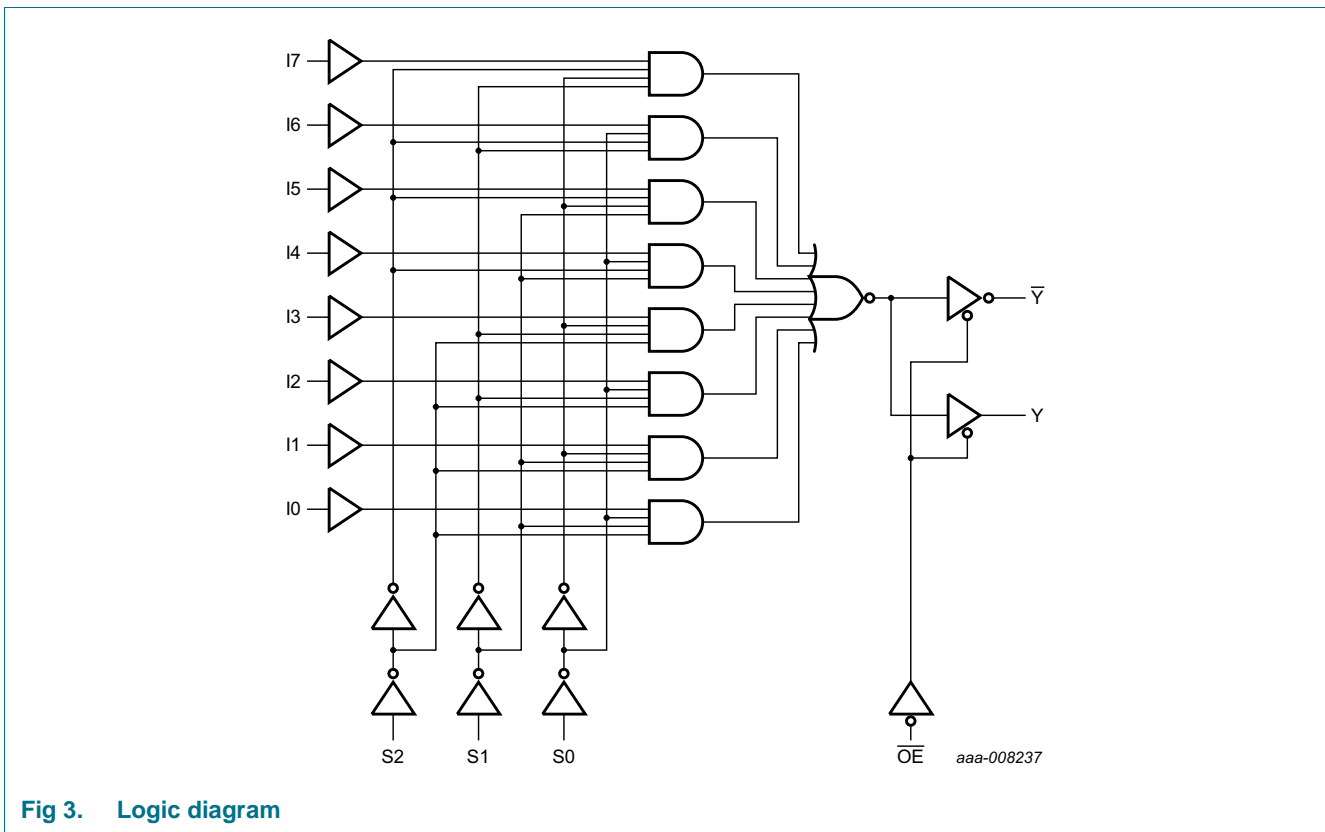
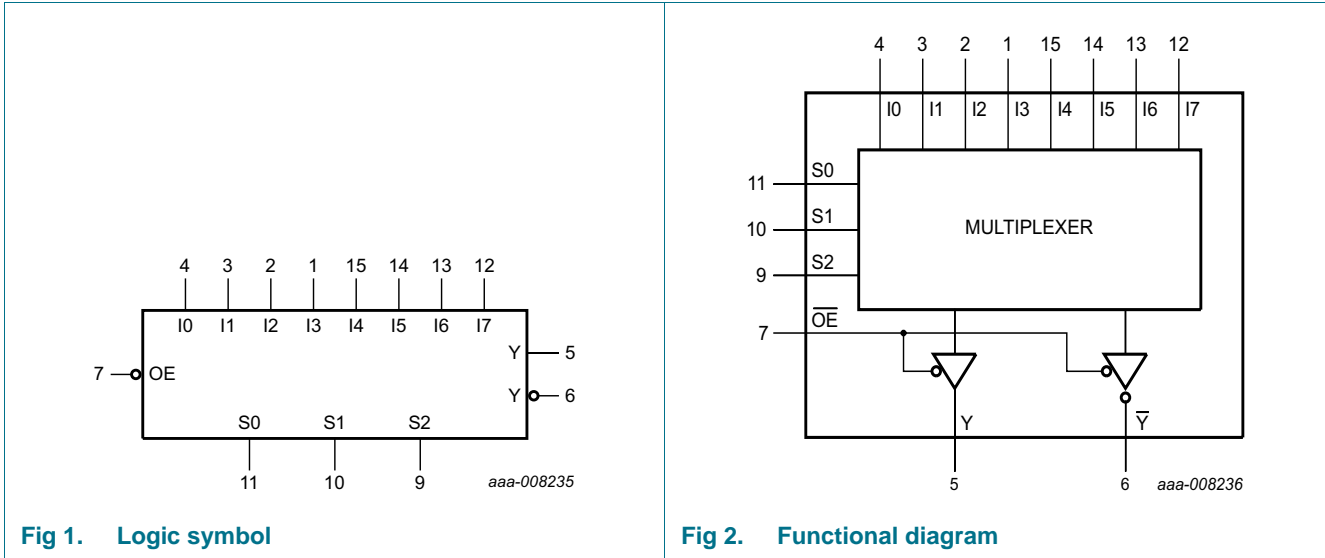
## 3. Ordering information

Table 1. Ordering information

Type number	Package			
	Temperature range	Name	Description	Version
74HC251N	$-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$	DIP16	plastic dual in-line package; 16 leads (300 mil)	SOT38-4
74HCT251N				
74HC251D	$-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$	SO16	plastic small outline package; 16 leads; body width 3.9 mm	SOT109-1
74HCT251D				
74HC251DB	$-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$	SSOP16	plastic shrink small outline package; 16 leads; body width 5.3 mm	SOT338-1
74HCT251DB				
74HC251PW	$-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$	TSSOP16	plastic thin shrink small outline package; 16 leads; body width 4.4 mm	SOT403-1
74HCT251PW				

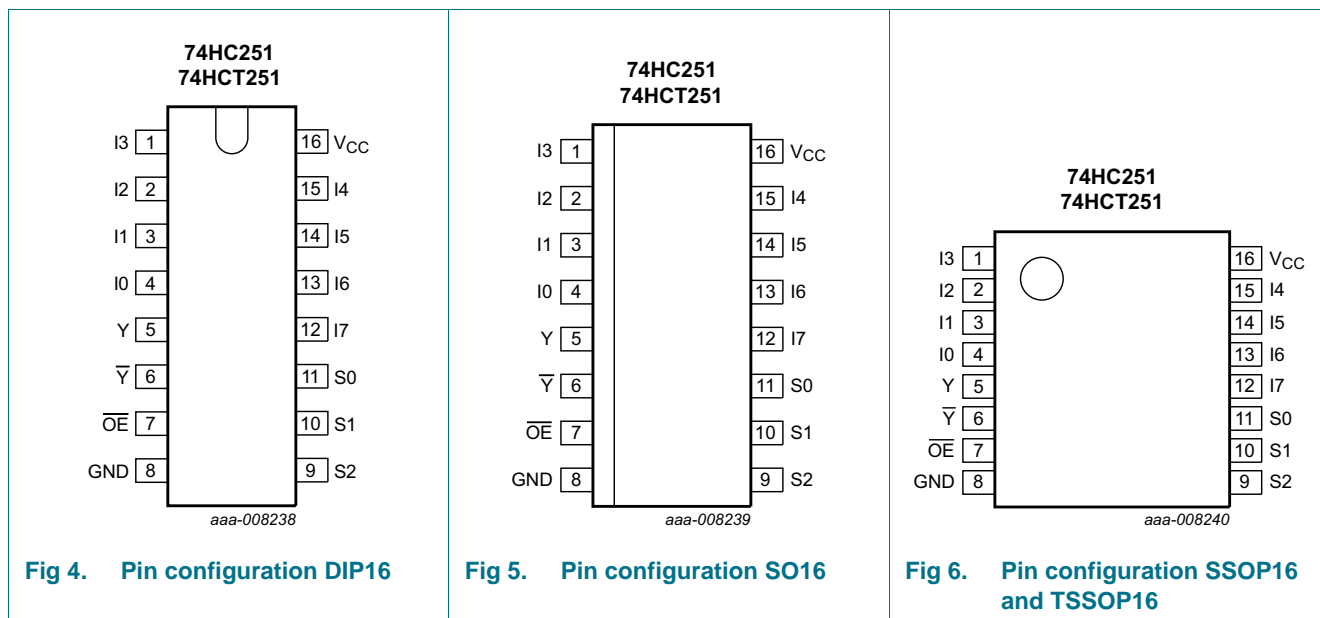


## 4. Functional diagram



## 5. Pinning information

### 5.1 Pinning



### 5.2 Pin description

**Table 2. Pin description**

Symbol	Pin	Description
I0 to I7	4, 3, 2, 1, 15, 14, 13, 12	data inputs
Y	5	multiplexer output
$\bar{Y}$	6	complementary multiplexer output
$\overline{OE}$	7	output enable input (active LOW)
GND	8	ground (0 V)
S0, S1, S2	11, 10, 9	common data select inputs
V <sub>CC</sub>	16	supply voltage

## 6. Functional description

Table 3. Function table<sup>[1]</sup>

Input												Output	
OE	S2	S1	S0	I0	I1	I2	I3	I4	I5	I6	I7	Y	Y
H	X	X	X	X	X	X	X	X	X	X	X	Z	Z
L	L	L	L	L	X	X	X	X	X	X	X	H	L
L	L	L	L	H	X	X	X	X	X	X	X	L	H
L	L	L	H	X	L	X	X	X	X	X	X	H	L
L	L	L	H	X	H	X	X	X	X	X	X	L	H
L	L	H	L	X	X	L	X	X	X	X	X	H	L
L	L	H	L	X	X	H	X	X	X	X	X	L	H
L	L	H	H	X	X	X	L	X	X	X	X	H	L
L	L	H	H	X	X	X	H	X	X	X	X	L	H
L	H	L	L	X	X	X	X	L	X	X	X	H	L
L	H	L	L	X	X	X	X	H	X	X	X	L	H
L	H	L	H	X	X	X	X	X	L	X	X	H	L
L	H	L	H	X	X	X	X	X	H	X	X	L	H
L	H	H	L	X	X	X	X	X	X	L	X	H	L
L	H	H	L	X	X	X	X	X	X	H	X	L	H
L	H	H	H	X	X	X	X	X	X	X	L	H	L
L	H	H	H	X	X	X	X	X	X	X	H	L	H

[1] H = HIGH voltage level; L = LOW voltage level; X = don't care; Z = high-impedance OFF-state.

## 7. Limiting values

Table 4. 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 <sub>CC</sub>	supply voltage		-0.5	+7	V
I <sub>IK</sub>	input clamping current	V <sub>I</sub> < -0.5 V or V <sub>I</sub> > V <sub>CC</sub> + 0.5 V	-	±20	mA
I <sub>OK</sub>	output clamping current	V <sub>O</sub> < -0.5 V or V <sub>O</sub> > V <sub>CC</sub> + 0.5 V	-	±20	mA
I <sub>O</sub>	output current	V <sub>O</sub> = -0.5 V to (V <sub>CC</sub> + 0.5 V)	-	±25	mA
I <sub>CC</sub>	supply current		-	+50	mA
I <sub>GND</sub>	ground current		-50	-	mA
T <sub>stg</sub>	storage temperature		-65	+150	°C

**Table 4. Limiting values ...continued**

In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	Min	Max	Unit
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> = -40 °C to +125 °C			
	DIP16 package		[1] -	750	mW
	SO16 package		[2] -	500	mW
	(T)SSOP16 package		[3] -	500	mW

[1] For DIP16 package: P<sub>tot</sub> derates linearly with 12 mW/K above 70 °C.

[2] For SO16 package: P<sub>tot</sub> derates linearly with 8 mW/K above 70 °C.

[3] For SSOP16 and TSSOP16 packages: P<sub>tot</sub> derates linearly with 5.5 mW/K above 60 °C.

## 8. Recommended operating conditions

**Table 5. Recommended operating conditions**

Voltages are referenced to GND (ground = 0 V)

Symbol	Parameter	Conditions	74HC251			74HCT251			Unit
			Min	Typ	Max	Min	Typ	Max	
V <sub>CC</sub>	supply voltage		2.0	5.0	6.0	4.5	5.0	5.5	V
V <sub>I</sub>	input voltage		0	-	V <sub>CC</sub>	0	-	V <sub>CC</sub>	V
V <sub>O</sub>	output voltage		0	-	V <sub>CC</sub>	0	-	V <sub>CC</sub>	V
T <sub>amb</sub>	ambient temperature		-40	+25	+125	-40	+25	+125	°C
Δt/ΔV	input transition rise and fall rate	V <sub>CC</sub> = 2.0 V	-	-	625	-	-	-	ns/V
		V <sub>CC</sub> = 4.5 V	-	1.67	139	-	1.67	139	ns/V
		V <sub>CC</sub> = 6.0 V	-	-	83	-	-	-	ns/V

## 9. Static characteristics

**Table 6. Static characteristics**

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

Symbol	Parameter	Conditions	T <sub>amb</sub> = 25 °C			T <sub>amb</sub> = -40 °C to +85 °C		T <sub>amb</sub> = -40 °C to +125 °C		Unit
			Min	Typ	Max	Min	Max	Min	Max	
<b>74HC251</b>										
V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 2.0 V	1.5	1.2	-	1.5	-	1.5	-	V
		V <sub>CC</sub> = 4.5 V	3.15	2.4	-	3.15	-	3.15	-	V
		V <sub>CC</sub> = 6.0 V	4.2	3.2	-	4.2	-	4.2	-	V
V <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 2.0 V	-	0.8	0.5	-	0.5	-	0.5	V
		V <sub>CC</sub> = 4.5 V	-	2.1	1.35	-	1.35	-	1.35	V
		V <sub>CC</sub> = 6.0 V	-	2.8	1.8	-	1.8	-	1.8	V
V <sub>OH</sub>	HIGH-level output voltage	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>								
		I <sub>O</sub> = -20 μA; V <sub>CC</sub> = 2.0 V	1.9	2.0	-	1.9	-	1.9	-	V
		I <sub>O</sub> = -20 μA; V <sub>CC</sub> = 4.5 V	4.4	4.5	-	4.4	-	4.4	-	V
		I <sub>O</sub> = -20 μA; V <sub>CC</sub> = 6.0 V	5.9	6.0	-	5.9	-	5.9	-	V
		I <sub>O</sub> = -4.0 mA; V <sub>CC</sub> = 4.5 V	3.98	4.32	-	3.84	-	3.7	-	V
V <sub>OL</sub>	LOW-level output voltage	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>								
		I <sub>O</sub> = 20 μA; V <sub>CC</sub> = 2.0 V	-	0	0.1	-	0.1	-	0.1	V
		I <sub>O</sub> = 20 μA; V <sub>CC</sub> = 4.5 V	-	0	0.1	-	0.1	-	0.1	V
		I <sub>O</sub> = 20 μA; V <sub>CC</sub> = 6.0 V	-	0	0.1	-	0.1	-	0.1	V
		I <sub>O</sub> = 4.0 mA; V <sub>CC</sub> = 4.5 V	-	0.15	0.26	-	0.33	-	0.4	V
I <sub>CC</sub>	supply current	V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 6.0 V	-	-	8.0	-	80	-	160	μA
I <sub>I</sub>	input leakage current	V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 6.0 V	-	-	±0.1	-	±1.0	-	±1.0	μA
I <sub>OZ</sub>	OFF-state output current	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>O</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 6.0 V	-	-	±0.5	-	±5.0	-	±10.0	μA
C <sub>I</sub>	input capacitance		-	3.5	-					pF

**Table 6. Static characteristics ...continued**

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

Symbol	Parameter	Conditions	T <sub>amb</sub> = 25 °C			T <sub>amb</sub> = -40 °C to +85 °C		T <sub>amb</sub> = -40 °C to +125 °C		Unit
			Min	Typ	Max	Min	Max	Min	Max	
<b>74HCT251</b>										
V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 4.5 V to 5.5 V	2.0	1.6	-	2.0	-	2.0	-	V
V <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 4.5 V to 5.5 V	-	1.2	0.8	-	0.8	-	0.8	V
V <sub>OH</sub>	HIGH-level output voltage	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>CC</sub> = 4.5 V								
		I <sub>O</sub> = -20 μA	4.4	4.5	-	4.4	-	4.4	-	V
		I <sub>O</sub> = -4 mA	3.98	4.32	-	3.84	-	3.7	-	V
V <sub>OL</sub>	LOW-level output voltage	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>CC</sub> = 4.5 V								
		I <sub>O</sub> = 20 μA	-	0	0.1	-	0.1	-	0.1	V
		I <sub>O</sub> = 4.0 mA	-	0.15	0.26	-	0.33	-	0.4	V
I <sub>I</sub>	input leakage current	V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 5.5 V	-	-	±0.1	-	±1.0	-	±1.0	μA
I <sub>OZ</sub>	OFF-state output current	V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub> ; V <sub>CC</sub> = 5.5 V; V <sub>O</sub> = V <sub>CC</sub> or GND per input pin; other inputs at V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A	-	-	±0.5	-	±5.0	-	±10	μA
I <sub>CC</sub>	supply current	V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A; V <sub>CC</sub> = 5.5 V	-	-	8.0	-	80	-	160	μA
ΔI <sub>CC</sub>	additional supply current	V <sub>I</sub> = V <sub>CC</sub> - 2.1 V; other inputs at V <sub>CC</sub> or GND; V <sub>CC</sub> = 4.5 V to 5.5 V; I <sub>O</sub> = 0 A								
		per input pin; I <sub>n</sub> inputs	-	100	360	-	450	-	490	μA
		per input pin; $\overline{\text{OE}}$ input	-	150	540	-	675	-	735	μA
		per input pin; S <sub>n</sub> input	-	150	540	-	675	-	735	μA
C <sub>I</sub>	input capacitance		-	3.5	-					pF

## 10. Dynamic characteristics

**Table 7. Dynamic characteristics**

Voltages are referenced to GND (ground = 0 V);  $C_L = 50$  pF unless otherwise specified; for test circuit, see [Figure 10](#).

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	
<b>74HC251</b>										
$t_{pd}$	propagation delay	In to Y; see <a href="#">Figure 7</a> <span style="float:right">[1]</span>								
		$V_{CC} = 2.0\text{ V}$	-	50	170	-	215	-	255	ns
		$V_{CC} = 4.5\text{ V}$	-	18	34	-	43	-	51	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	15	-	-	-	-	-	ns
		$V_{CC} = 6.0\text{ V}$	-	14	29	-	37	-	43	ns
		In to $\bar{Y}$ ; see <a href="#">Figure 7</a> <span style="float:right">[1]</span>								
		$V_{CC} = 2.0\text{ V}$	-	55	175	-	220	-	265	ns
		$V_{CC} = 4.5\text{ V}$	-	20	35	-	44	-	53	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	17	-	-	-	-	-	ns
		$V_{CC} = 6.0\text{ V}$	-	16	30	-	37	-	45	ns
		Sn to Y; see <a href="#">Figure 8</a> <span style="float:right">[1]</span>								
		$V_{CC} = 2.0\text{ V}$	-	66	205	-	255	-	310	ns
		$V_{CC} = 4.5\text{ V}$	-	24	41	-	51	-	62	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	20	-	-	-	-	-	ns
		$V_{CC} = 6.0\text{ V}$	-	19	35	-	43	-	53	ns
		Sn to $\bar{Y}$ ; see <a href="#">Figure 8</a> <span style="float:right">[1]</span>								
$V_{CC} = 2.0\text{ V}$	-	69	205	-	255	-	310	ns		
$V_{CC} = 4.5\text{ V}$	-	25	41	-	51	-	62	ns		
$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	21	-	-	-	-	-	ns		
$V_{CC} = 6.0\text{ V}$	-	20	35	-	43	-	53	ns		
$t_{en}$	enable time	$\overline{OE}$ to Y, $\bar{Y}$ ; see <a href="#">Figure 8</a> <span style="float:right">[2]</span>								
		$V_{CC} = 2.0\text{ V}$	-	36	140	-	175	-	210	ns
		$V_{CC} = 4.5\text{ V}$	-	13	28	-	35	-	42	ns
$t_{dis}$	disable time	$\overline{OE}$ to Y, $\bar{Y}$ ; see <a href="#">Figure 8</a> <span style="float:right">[3]</span>								
		$V_{CC} = 2.0\text{ V}$	-	39	140	-	170	-	210	ns
		$V_{CC} = 4.5\text{ V}$	-	14	28	-	35	-	42	ns
$t_{dis}$	disable time	$V_{CC} = 6.0\text{ V}$	-	11	24	-	30	-	36	ns
		$t_t$	transition time	Y, $\bar{Y}$ ; see <a href="#">Figure 7</a> <span style="float:right">[4]</span>						
				$V_{CC} = 2.0\text{ V}$	-	19	75	-	95	-
$V_{CC} = 4.5\text{ V}$	-			7	15	-	19	-	22	ns
$C_{PD}$	power dissipation capacitance	$V_{CC} = 6.0\text{ V}$	-	6	13	-	16	-	19	ns
		$C_L = 50\text{ pF}; f = 1\text{ MHz}; V_1 = \text{GND to } V_{CC}$ <span style="float:right">[5]</span>	-	44	-	-	-	-	-	pF



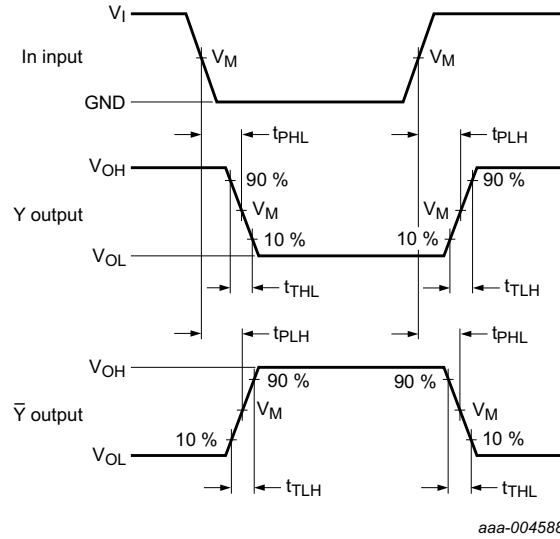
**Table 7. Dynamic characteristics ...continued**

Voltages are referenced to GND (ground = 0 V);  $C_L = 50$  pF unless otherwise specified; for test circuit, see [Figure 10](#).

Symbol	Parameter	Conditions	$T_{amb} = 25\text{ °C}$			$T_{amb} = -40\text{ °C}$ to $+85\text{ °C}$		$T_{amb} = -40\text{ °C}$ to $+125\text{ °C}$		Unit
			Min	Typ	Max	Min	Max	Min	Max	
<b>74HCT251</b>										
$t_{pd}$	propagation delay	In to Y; see <a href="#">Figure 7</a> <span style="float:right">[1]</span>								
		$V_{CC} = 4.5\text{ V}$	-	22	35	-	44	-	53	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	19	-	-	-	-	-	ns
		In to $\bar{Y}$ ; see <a href="#">Figure 7</a> <span style="float:right">[1]</span>								
		$V_{CC} = 4.5\text{ V}$	-	22	35	-	44	-	53	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	19	-	-	-	-	-	ns
		Sn to Y; see <a href="#">Figure 8</a> <span style="float:right">[1]</span>								
		$V_{CC} = 4.5\text{ V}$	-	24	44	-	55	-	66	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	20	-	-	-	-	-	ns
$t_{en}$	enable time	Sn to $\bar{Y}$ ; see <a href="#">Figure 8</a> <span style="float:right">[1]</span>								
		$V_{CC} = 4.5\text{ V}$	-	25	44	-	55	-	66	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	21	-	-	-	-	-	ns
$t_{dis}$	disable time	$\bar{OE}$ to Y, $\bar{Y}$ ; see <a href="#">Figure 8</a> <span style="float:right">[2]</span>								
		$V_{CC} = 4.5\text{ V}$	-	13	28	-	35	-	42	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	13	-	-	-	-	-	ns
$t_{dt}$	disable time	$\bar{OE}$ to Y, $\bar{Y}$ ; see <a href="#">Figure 8</a> <span style="float:right">[3]</span>								
		$V_{CC} = 4.5\text{ V}$	-	14	28	-	35	-	42	ns
		$V_{CC} = 5\text{ V}; C_L = 15\text{ pF}$	-	18	-	-	-	-	-	ns
$t_t$	transition time	Y, $\bar{Y}$ ; see <a href="#">Figure 7</a> <span style="float:right">[4]</span>								
		$V_{CC} = 4.5\text{ V}$	-	7	15	-	19	-	22	ns
$C_{PD}$	power dissipation capacitance	$C_L = 50\text{ pF}; f = 1\text{ MHz}; V_i = \text{GND to } V_{CC}$ <span style="float:right">[5]</span>	-	46	-	-	-	-	-	pF

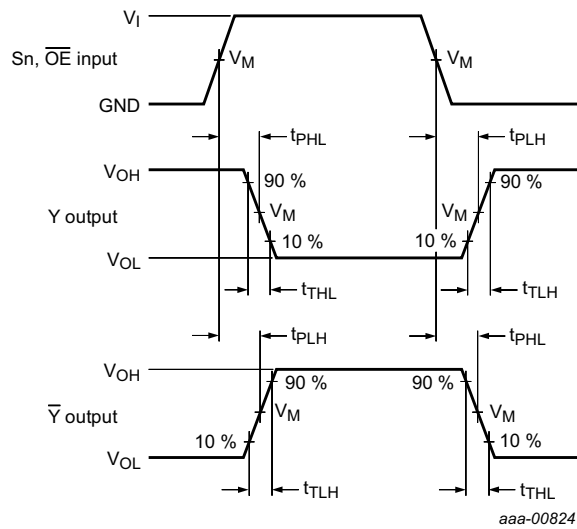
- [1]  $t_{pd}$  is the same as  $t_{PLH}$  and  $t_{PHL}$ .
- [2]  $t_{en}$  is the same as  $t_{PZH}$  and  $t_{PZL}$ .
- [3]  $t_{dis}$  is the same as  $t_{PLZ}$  and  $t_{PHZ}$ .
- [4]  $t_t$  is the same as  $t_{THL}$  and  $t_{TLH}$ .
- [5]  $C_{PD}$  is used to determine the dynamic power dissipation ( $P_D$  in  $\mu\text{W}$ ).  
 $P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \sum(C_L \times V_{CC}^2 \times f_o)$  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;  
 $\sum(C_L \times V_{CC}^2 \times f_o)$  = sum of outputs.

11. Waveforms



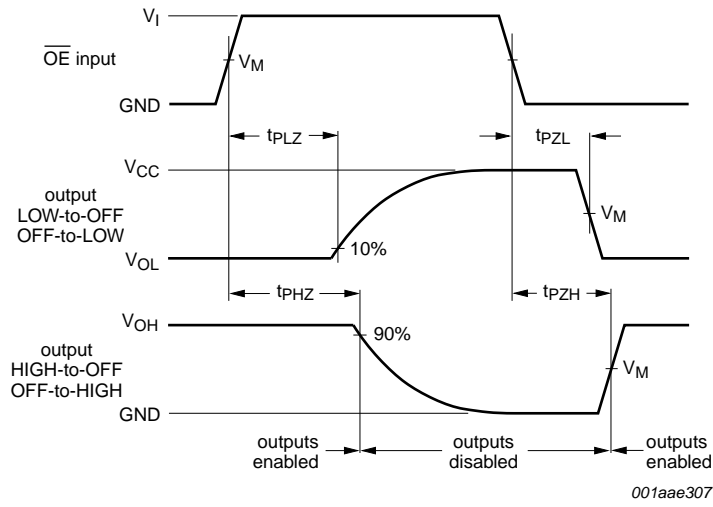
Measurement points are given in [Table 8](#).  
 $V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

**Fig 7. Propagation delay input (In) to output (Y,  $\bar{Y}$ ) and the output (Y,  $\bar{Y}$ ) transition time**



Measurement points are given in [Table 8](#).  
 $V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

**Fig 8. Propagation delay input ( $S_n$ ,  $\overline{OE}$ ) to output (Y,  $\bar{Y}$ )**



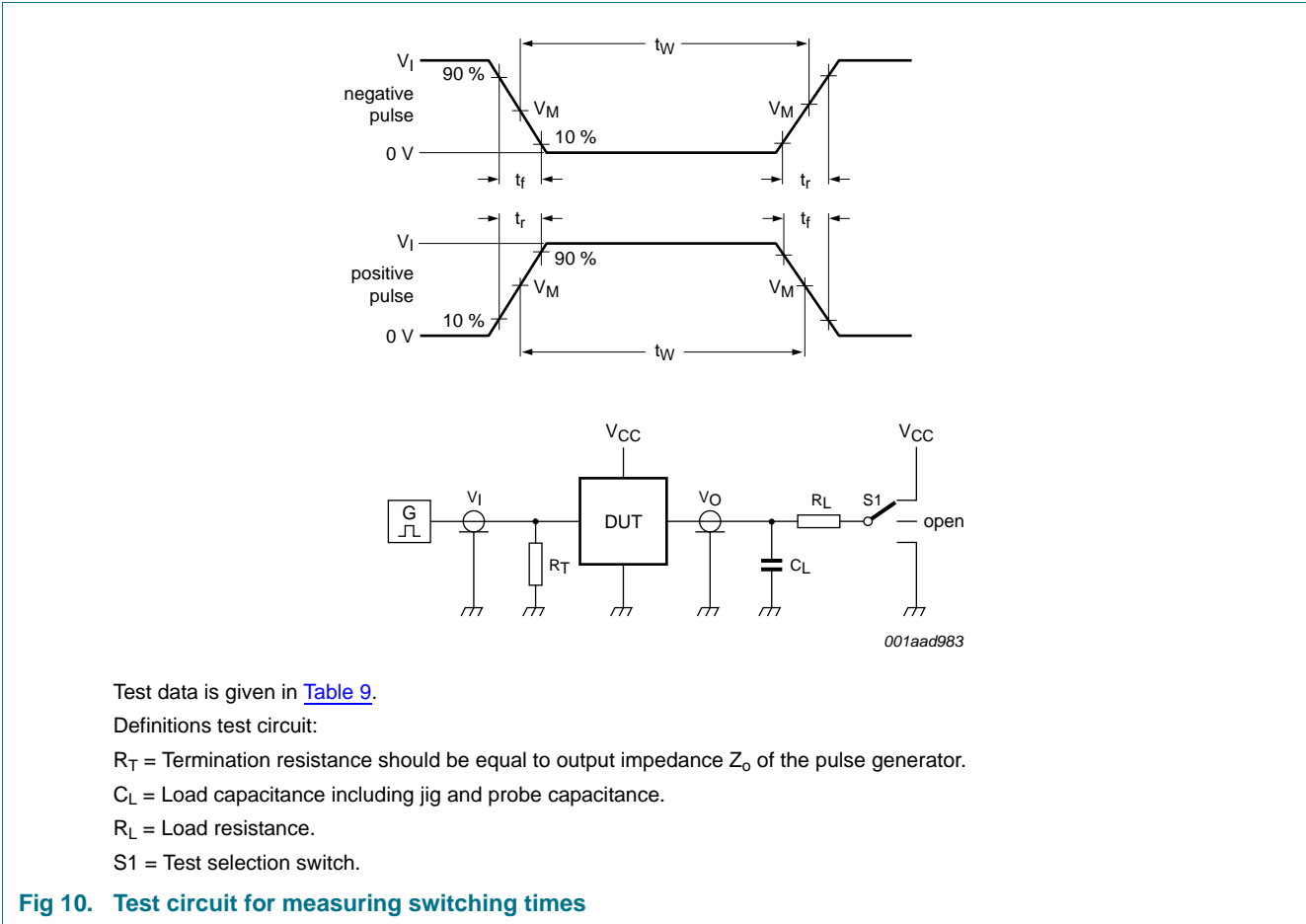
Measurement points are given in [Table 8](#).

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

**Fig 9. Enable and disable times**

**Table 8. Measurement points**

Type	Input	Output
	$V_M$	$V_M$
74HC251	$0.5V_{CC}$	$0.5V_{CC}$
74HCT251	1.3 V	1.3 V



Test data is given in [Table 9](#).

Definitions test circuit:

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

$C_L$  = Load capacitance including jig and probe capacitance.

$R_L$  = Load resistance.

S1 = Test selection switch.

**Fig 10. Test circuit for measuring switching times**

**Table 9. Test data**

Type	Input		Load		S1 position		
	$V_I$	$t_r, t_f$	$C_L$	$R_L$	$t_{PHL}, t_{PLH}$	$t_{PZH}, t_{PHZ}$	$t_{PZL}, t_{PLZ}$
74HC251	$V_{CC}$	6 ns	15 pF, 50 pF	1 k $\Omega$	open	GND	$V_{CC}$
74HCT251	3 V	6 ns	15 pF, 50 pF	1 k $\Omega$	open	GND	$V_{CC}$

12. Package outline

DIP16: plastic dual in-line package; 16 leads (300 mil)

SOT38-4

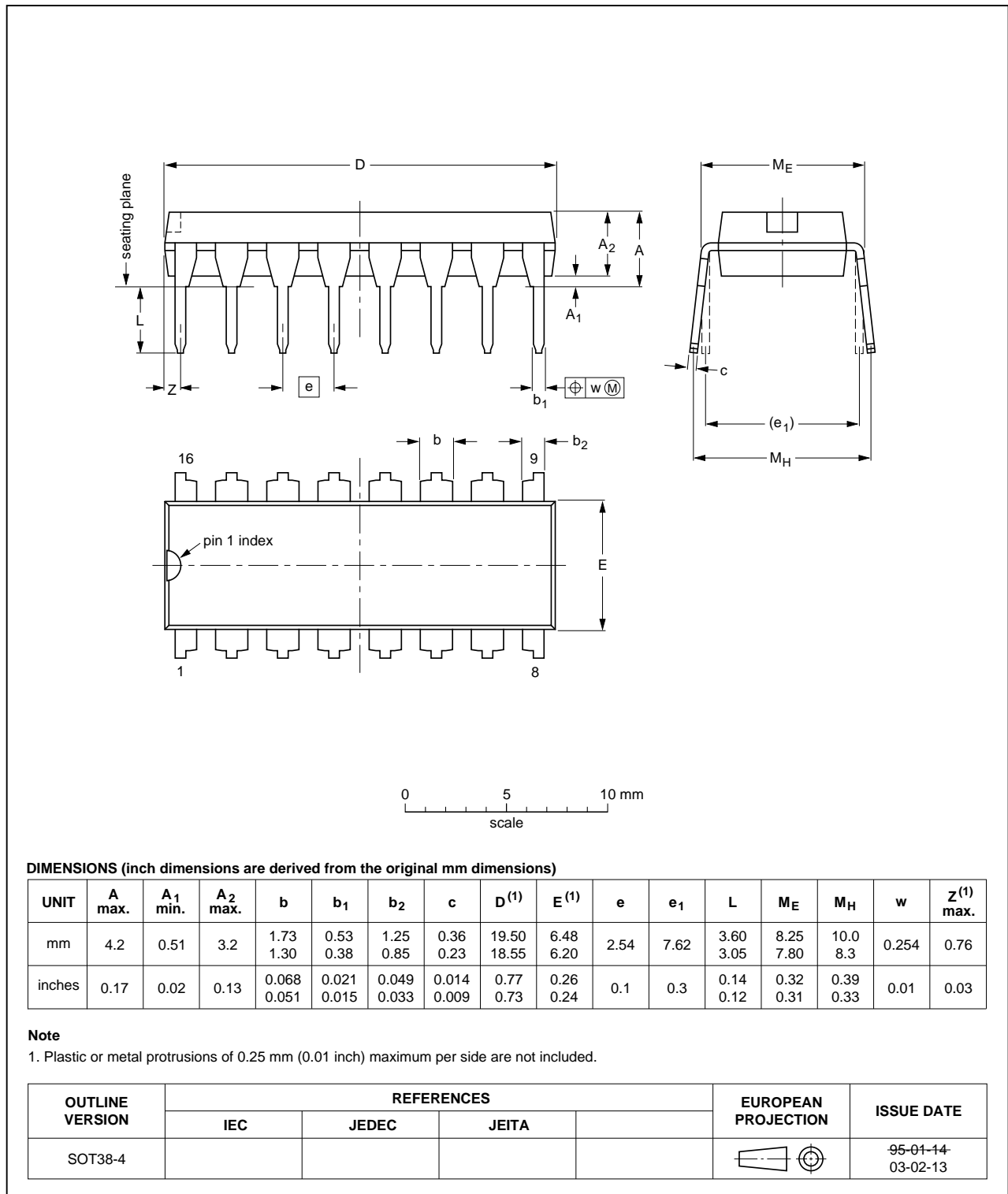


Fig 11. Package outline SOT38-4 (DIP16)

SO16: plastic small outline package; 16 leads; body width 3.9 mm

SOT109-1

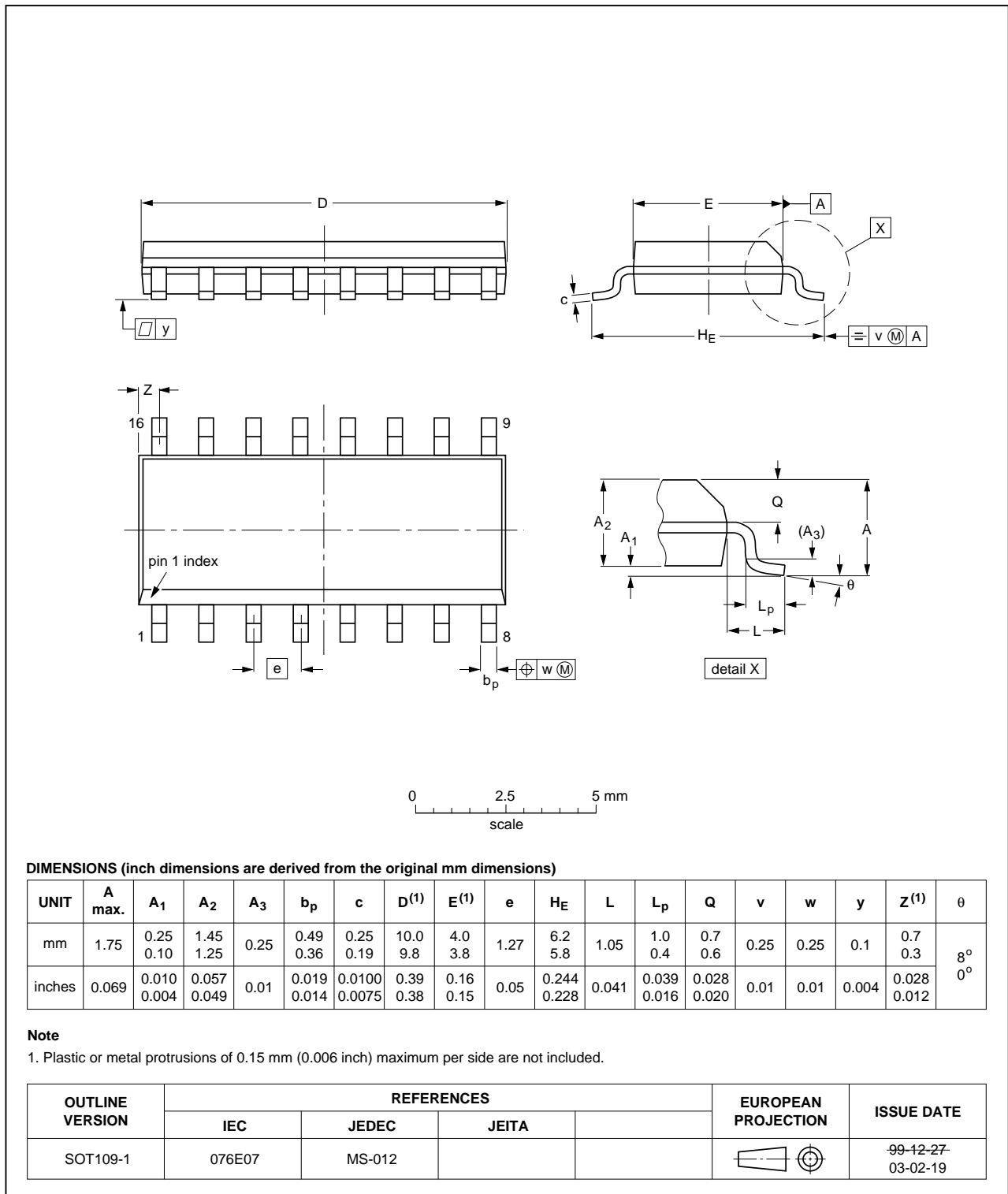


Fig 12. Package outline SOT109-1 (SO16)

SSOP16: plastic shrink small outline package; 16 leads; body width 5.3 mm

SOT338-1

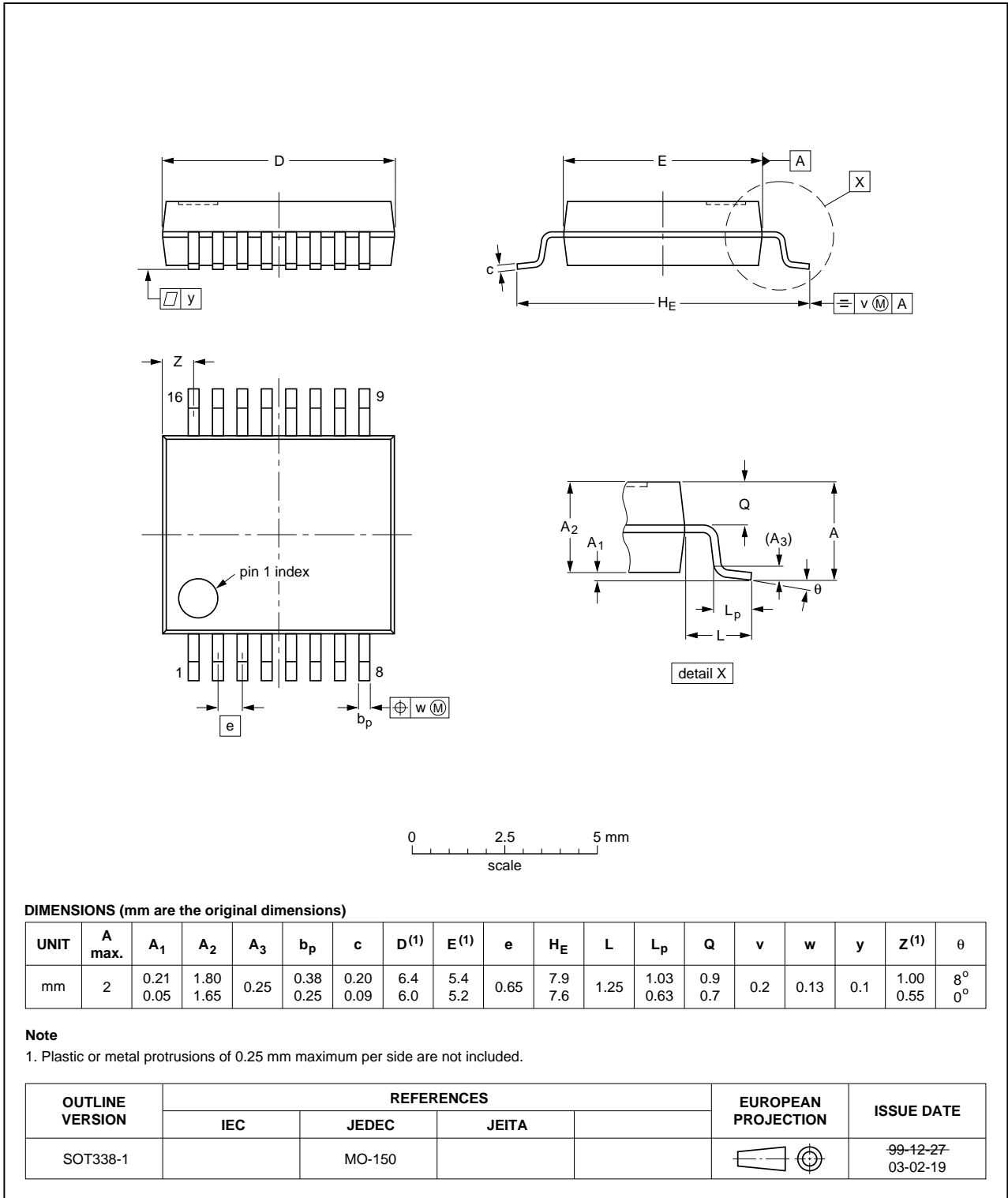


Fig 13. Package outline SOT338-1 (SSOP16)

TSSOP16: plastic thin shrink small outline package; 16 leads; body width 4.4 mm

SOT403-1

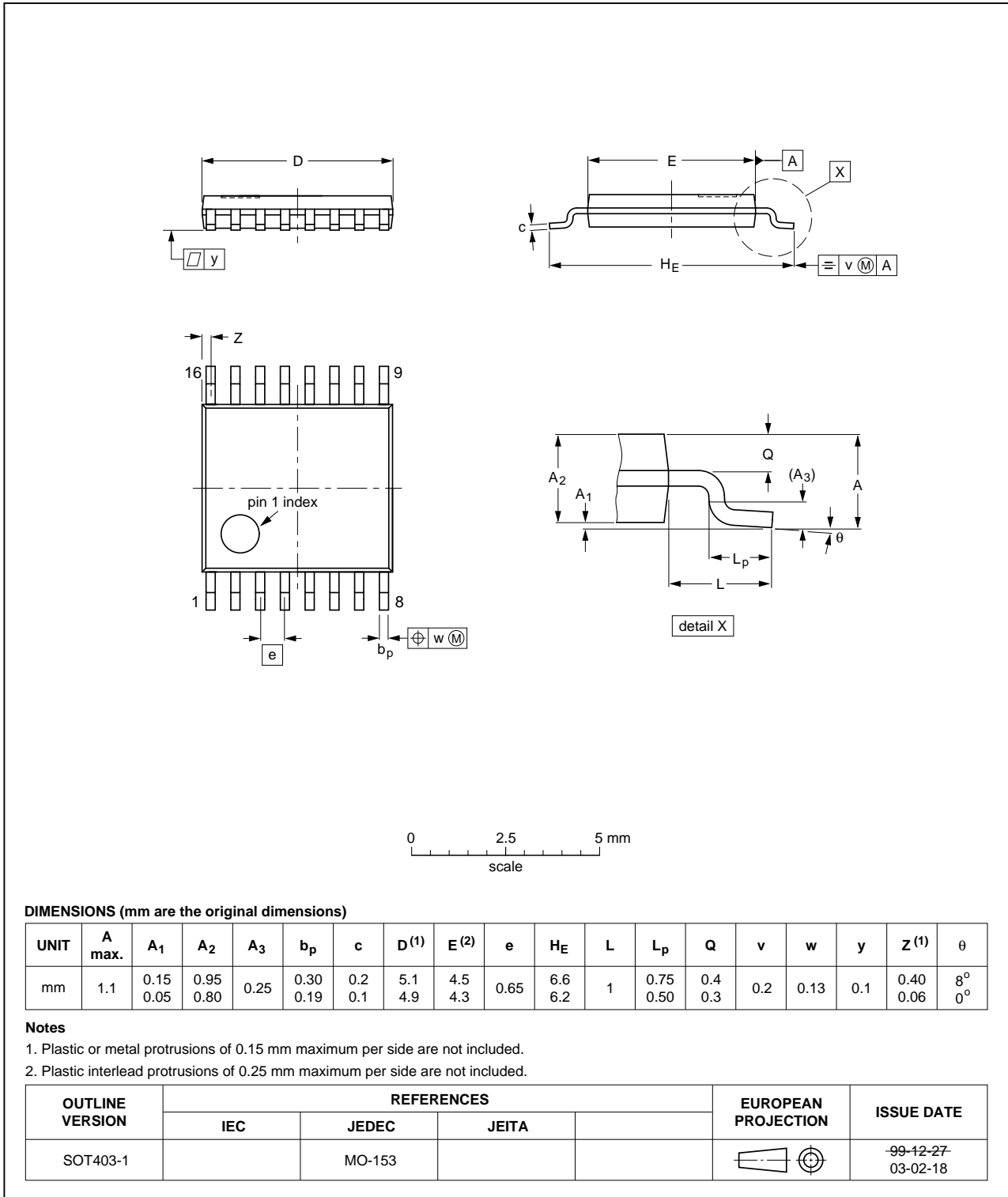


Fig 14. Package outline SOT403-1 (TSSOP16)



## 13. Abbreviations

Table 10. Abbreviations

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

## 14. Revision history

Table 11. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74HC_HCT251 v.3	20130709	Product data sheet	-	74HC_HCT251_CNV v.2
Modifications:				
				<ul style="list-style-type: none"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.</li><li>• Legal texts have been adapted to the new company name where appropriate.</li></ul>
74HC_HCT251_CNV v.2	19970828	Product specification	-	

## 15. Legal information

### 15.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	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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Date of release: 9 July 2013

Document identifier: 74HC\_HCT251