

# 74AHC573-Q100; 74AHCT573-Q100

Octal D-type transparent latch; 3-state

Rev. 1 — 10 June 2013

Product data sheet

## 1. General description

The 74AHC573-Q100; 74AHCT573-Q100 is a high-speed Si-gate CMOS device and is pin compatible with Low-power Schottky TTL (LSTTL). It is specified in compliance with JEDEC standard No. 7A.

The 74AHC573-Q100; 74AHCT573-Q100 consists of eight D-type transparent latches featuring separate D-type inputs for each latch and 3-state true outputs for bus oriented applications. A latch enable input (LE) and an output enable input (OE) are common to all latches.

When pin LE is HIGH, data at the D<sub>n</sub> inputs enters the latches. In this condition the latches are transparent, i.e. a latch output will change state each time its corresponding D<sub>n</sub> input changes. When pin LE is LOW, the latches store the information that is present at the D<sub>n</sub> inputs, after a set-up time preceding the HIGH-to-LOW transition of LE.

When pin  $\overline{OE}$  is LOW, the contents of the 8 latches are available at the outputs. When pin  $\overline{OE}$  is HIGH, the outputs go to the high-impedance OFF-state. Operation of the  $\overline{OE}$  input does not affect the state of the latches.

This product has been qualified to the Automotive Electronics Council (AEC) standard Q100 (Grade 1) and is suitable for use in automotive applications.

## 2. Features and benefits

- Automotive product qualification in accordance with AEC-Q100 (Grade 1)
  - ◆ Specified from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  and from  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Balanced propagation delays
- All inputs have a Schmitt trigger action
- Common 3-state output enable input
- Inputs accept voltages higher than  $V_{CC}$
- Input levels:
  - ◆ For 74AHC573-Q100: CMOS input level
  - ◆ For 74AHCT573-Q100: TTL input level
- ESD protection:
  - ◆ MIL-STD-883, method 3015 exceeds 2000V
  - ◆ HBM JESD22-A114F exceeds 2000 V
  - ◆ MM JESD22-A115-A exceeds 200 V ( $C = 200 \text{ pF}$ ,  $R = 0 \Omega$ )
- Multiple package options

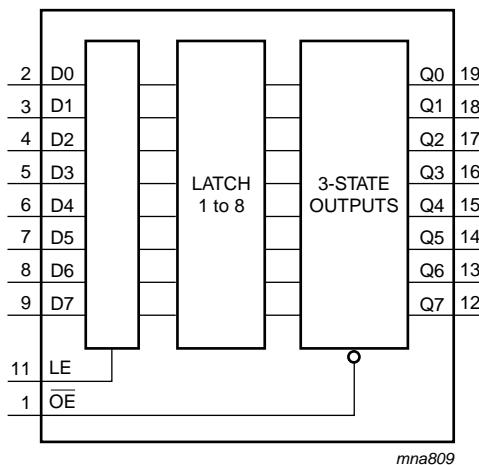


### 3. Ordering information

**Table 1. Ordering information**

Type number	Package		Description	Version
	Temperature range	Name		
74AHC573D-Q100	-40 °C to +125 °C	SO20	plastic small outline package; 20 leads; body width 7.5 mm	SOT163-1
74AHCT573D-Q100				
74AHC573PW-Q100	-40 °C to +125 °C	TSSOP20	plastic thin shrink small outline package; 20 leads; body width 4.4 mm	SOT360-1
74AHCT573PW-Q100				
74AHC573BQ-Q100	-40 °C to +125 °C	DHVQFN20	plastic dual in-line compatible thermal enhanced very thin quad flat package no leads; 20 terminals; body 2.5 × 4.5 × 0.85 mm	SOT764-1
74AHCT573BQ-Q100				

### 4. Functional diagram



**Fig 1. Functional diagram**

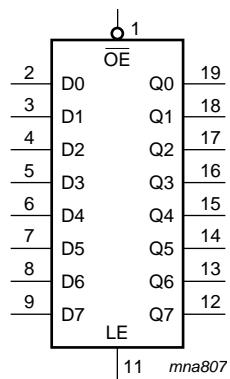


Fig 2. Logic symbol

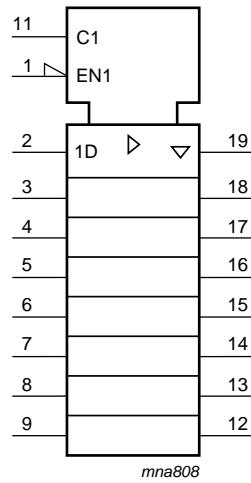


Fig 3. IEC logic symbol

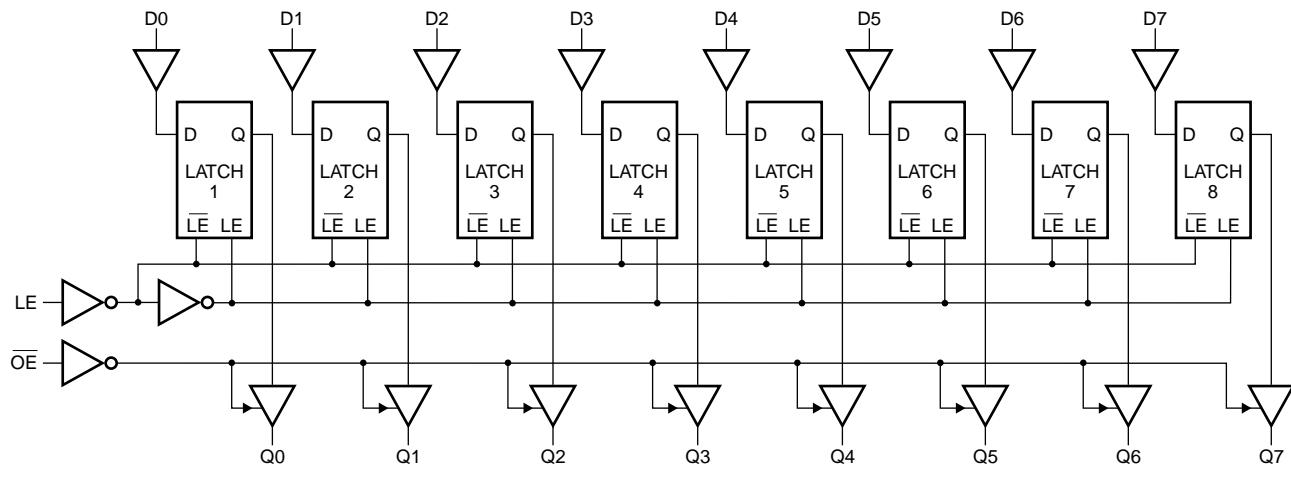


Fig 4. Logic diagram

## 5. Pinning information

### 5.1 Pinning

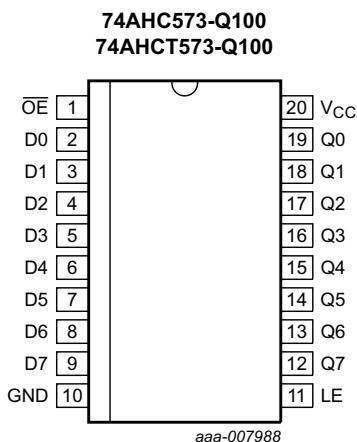
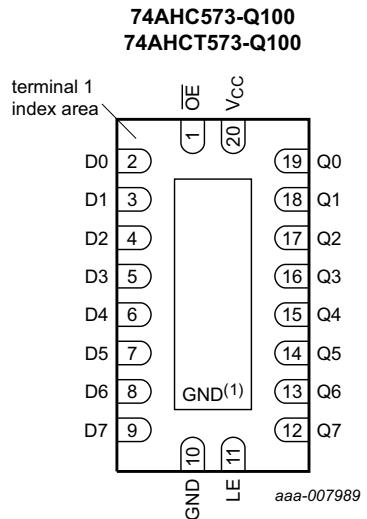


Fig 5. Pin configuration SO20 and TSSOP20



Transparent top view

- (1) This is not a supply pin. The substrate is attached to this pad using conductive die attach material. There is no electrical or mechanical requirement to solder this pad. However, if it is soldered, the solder land should remain floating or be connected to GND.

Fig 6. Pin configuration DHVQFN20

### 5.2 Pin description

Table 2. Pin description

Symbol	Pin	Description
OE	1	output enable input (active LOW)
D0 to D7	2, 3, 4, 5, 6, 7, 8, 9	data input
GND	10	ground (0 V)
LE	11	latch enable (active HIGH)
Q0 to Q7	19, 18, 17, 16, 15, 14, 13, 12	data output
V <sub>CC</sub>	20	supply voltage

## 6. Functional description

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

Operating mode	Input			Internal latch	Output Qn
	OE	LE	Dn		
Enable and read register (transparent mode)	L	H	L	L	L
			H	H	H
Latch and read register	L	L	I	L	L
			h	H	H
Latch register and disable outputs	H	L	I	L	Z
			h	H	Z

- [1] H = HIGH voltage level;  
 h = HIGH voltage level one set-up time prior to the HIGH-to-LOW LE transition;  
 L = LOW voltage level;  
 I = LOW voltage level one set-up time prior to the HIGH-to-LOW LE transition;  
 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	+7.0	V
V <sub>I</sub>	input voltage		-0.5	+7.0	V
I <sub>IK</sub>	input clamping current	V <sub>I</sub> < -0.5 V	<sup>[1]</sup> -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	<sup>[1]</sup> -20	+20	mA
I <sub>O</sub>	output current	V <sub>O</sub> = -0.5 V to (V <sub>CC</sub> + 0.5 V)	-25	+25	mA
I <sub>CC</sub>	supply current		-	+75	mA
I <sub>GND</sub>	ground current		-75	-	mA
T <sub>stg</sub>	storage temperature		-65	+150	°C
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> = -40 °C to +125 °C	<sup>[2]</sup> -	500	mW

- [1] The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
 [2] For SO20 packages: above 70 °C the value of P<sub>tot</sub> derates linearly at 8 mW/K.  
 For TSSOP20 packages: above 60 °C the value of P<sub>tot</sub> derates linearly at 5.5 mW/K.  
 For DHVQFN20 packages: above 60 °C the value of P<sub>tot</sub> derates linearly with 4.5 mW/K.

## 8. Recommended operating conditions

Table 5. Operating conditions

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>74AHC573-Q100</b>						
V <sub>CC</sub>	supply voltage		2.0	5.0	5.5	V
V <sub>I</sub>	input voltage		0	-	5.5	V
V <sub>O</sub>	output voltage		0	-	V <sub>CC</sub>	V
T <sub>amb</sub>	ambient temperature		-40	+25	+125	°C
Δt/ΔV	input transition rise and fall rate	V <sub>CC</sub> = 3.0 V to 3.6 V	-	-	100	ns/V
		V <sub>CC</sub> = 4.5 V to 5.5 V	-	-	20	ns/V
<b>74AHCT573-Q100</b>						
V <sub>CC</sub>	supply voltage		4.5	5.0	5.5	V
V <sub>I</sub>	input voltage		0	-	5.5	V
V <sub>O</sub>	output voltage		0	-	V <sub>CC</sub>	V
T <sub>amb</sub>	ambient temperature		-40	+25	+125	°C
Δt/ΔV	input transition rise and fall rate	V <sub>CC</sub> = 4.5 V to 5.5 V	-	-	20	ns/V

## 9. Static characteristics

Table 6. Static characteristics

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

Symbol	Parameter	Conditions	25 °C			−40 °C to +85 °C			−40 °C to +125 °C			Unit
			Min	Typ	Max	Min	Max	Min	Typ	Max		
<b>74AHC573-Q100</b>												
V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 2.0 V	1.5	-	-	1.5	-	1.5	-	-	V	
		V <sub>CC</sub> = 3.0 V	2.1	-	-	2.1	-	2.1	-	-	V	
		V <sub>CC</sub> = 5.5 V	3.85	-	-	3.85	-	3.85	-	-	V	
V <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 2.0 V	-	-	0.5	-	0.5	-	-	0.5	V	
		V <sub>CC</sub> = 3.0 V	-	-	0.9	-	0.9	-	-	0.9	V	
		V <sub>CC</sub> = 5.5 V	-	-	1.65	-	1.65	-	-	1.65	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> = −50 μA; V <sub>CC</sub> = 2.0 V	1.9	2.0	-	1.9	-	1.9	-	-	V	
		I <sub>O</sub> = −50 μA; V <sub>CC</sub> = 3.0 V	2.9	3.0	-	2.9	-	2.9	-	-	V	
		I <sub>O</sub> = −50 μA; V <sub>CC</sub> = 4.5 V	4.4	4.5	-	4.4	-	4.4	-	-	V	
		I <sub>O</sub> = −4.0 mA; V <sub>CC</sub> = 3.0 V	2.58	-	-	2.48	-	2.40	-	-	V	
V <sub>OL</sub>	LOW-level output voltage	I <sub>O</sub> = −8.0 mA; V <sub>CC</sub> = 4.5 V	3.94	-	-	3.80	-	3.70	-	-	V	
		I <sub>O</sub> = 50 μA; V <sub>CC</sub> = 2.0 V	-	0	0.1	-	0.1	-	-	0.1	V	
		I <sub>O</sub> = 50 μA; V <sub>CC</sub> = 3.0 V	-	0	0.1	-	0.1	-	-	0.1	V	
		I <sub>O</sub> = 50 μA; V <sub>CC</sub> = 4.5 V	-	0	0.1	-	0.1	-	-	0.1	V	
		I <sub>O</sub> = 4.0 mA; V <sub>CC</sub> = 3.0 V	-	-	0.36	-	0.44	-	-	0.55	V	
		I <sub>O</sub> = 8.0 mA; V <sub>CC</sub> = 4.5 V	-	-	0.36	-	0.44	-	-	0.55	V	

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

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

Symbol	Parameter	Conditions	25 °C			−40 °C to +85 °C		−40 °C to +125 °C			Unit
			Min	Typ	Max	Min	Max	Min	Typ	Max	
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> = 5.5 V	-	-	±0.25	-	±2.5	-	-	±10.0	μA
I <sub>I</sub>	input leakage current	V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>CC</sub> = 0 V to 5.5 V	-	-	0.1	-	1.0	-	-	2.0	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	-	-	4.0	-	40	-	-	80	μA
C <sub>I</sub>	input capacitance	V <sub>I</sub> = V <sub>CC</sub> or GND	-	3	10	-	10	-	-	10	pF
C <sub>O</sub>	output capacitance		-	4	-	-	-	-	-	10	pF

**74AHCT573-Q100**

V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 4.5 V to 5.5 V	2.0	-	-	2.0	-	2.0	-	-	V
V <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 4.5 V to 5.5 V	-	-	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> = −50 μA		4.4	4.5	-	4.4	-	4.4	-	-	V
	I <sub>O</sub> = −8.0 mA		3.94	-	-	3.80	-	3.70	-	-	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> = 50 μA		-	0	0.1	-	0.1	-	-	0.1	V
	I <sub>O</sub> = 8.0 mA		-	-	0.36	-	0.44	-	-	0.55	V
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 per input pin; other inputs at V <sub>CC</sub> or GND; I <sub>O</sub> = 0 A	-	-	±0.25	-	±2.5	-	-	±10.0	μA
I <sub>I</sub>	input leakage current	V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 0 V to 5.5 V	-	-	0.1	-	1.0	-	-	2.0	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	-	-	4.0	-	40	-	-	80	μA
ΔI <sub>CC</sub>	additional supply current	per input pin; V <sub>I</sub> = V <sub>CC</sub> − 2.1 V; I <sub>O</sub> = 0 A; other pins at V <sub>CC</sub> or GND; V <sub>CC</sub> = 4.5 V to 5.5 V	-	-	1.35	-	1.5	-	-	1.5	mA
C <sub>I</sub>	input capacitance	V <sub>I</sub> = V <sub>CC</sub> or GND	-	3	10	-	10	-	-	10	pF
C <sub>O</sub>	output capacitance		-	4	-	-	-	-	-	10	pF

## 10. Dynamic characteristics

**Table 7. Dynamic characteristics**Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 11](#).

Symbol	Parameter	Conditions	25 °C			−40 °C to +85 °C		−40 °C to +125 °C		Unit
			Min	Typ <sup>[1]</sup>	Max	Min	Max	Min	Max	
<b>74AHC573-Q100</b>										
$t_{pd}$	propagation delay	Dn to Qn; see <a href="#">Figure 7</a> [2]								
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	5.5	11.0	1.0	13.0	1.0	14.0	ns
		$C_L = 50 \text{ pF}$	-	7.8	14.5	1.0	16.5	1.0	18.5	ns
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	3.9	6.8	1.0	8.0	1.0	8.5	ns
		$C_L = 50 \text{ pF}$	-	5.5	8.8	1.0	10.0	1.0	11.0	ns
		LE to Qn; see <a href="#">Figure 8</a> [2]								
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	5.8	11.9	1.0	14.0	1.0	15.0	ns
		$C_L = 50 \text{ pF}$	-	8.3	15.4	1.0	17.5	1.0	19.5	ns
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	4.2	7.7	1.0	9.0	1.0	10.0	ns
		$C_L = 50 \text{ pF}$	-	5.9	9.7	1.0	11.0	1.0	12.5	ns
$t_{en}$	enable time	$\overline{OE}$ to Qn; see <a href="#">Figure 9</a> [3]								
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	5.8	11.5	1.0	13.5	1.0	14.5	ns
		$C_L = 50 \text{ pF}$	-	8.3	15.0	1.0	17.0	1.0	19.0	ns
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	4.4	7.7	1.0	9.0	1.0	10.0	ns
		$C_L = 50 \text{ pF}$	-	6.3	9.7	1.0	11.0	1.0	12.5	ns
$t_{dis}$	disable time	$\overline{OE}$ to Qn; see <a href="#">Figure 9</a> [4]								
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	6.8	11.0	1.0	13.0	1.0	14.0	ns
		$C_L = 50 \text{ pF}$	-	9.7	14.5	1.0	16.5	1.0	18.5	ns
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$								
		$C_L = 15 \text{ pF}$	-	4.6	7.7	1.0	9.0	1.0	10.0	ns
		$C_L = 50 \text{ pF}$	-	7.4	9.7	1.0	11.0	1.0	12.5	ns
$t_w$	pulse width	LE HIGH; see <a href="#">Figure 8</a>								
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$	5.0	-	-	5.0	-	5.0	-	ns
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$	5.0	-	-	5.0	-	5.0	-	ns
$t_{su}$	set-up time	Dn to LE; see <a href="#">Figure 10</a>								
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$	3.5	-	-	3.5	-	3.5	-	ns
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$	3.5	-	-	3.5	-	3.5	-	ns

**Table 7. Dynamic characteristics ...continued**Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 11](#).

Symbol	Parameter	Conditions	25 °C			−40 °C to +85 °C		−40 °C to +125 °C		Unit
			Min	Typ <sup>[1]</sup>	Max	Min	Max	Min	Max	
t <sub>h</sub>	hold time	Dn to LE; see <a href="#">Figure 10</a>								
		V <sub>CC</sub> = 3.0 V to 3.6 V	1.5	-	-	1.5	-	1.5	-	ns
		V <sub>CC</sub> = 4.5 V to 5.5 V	1.5	-	-	1.5	-	1.5	-	ns
C <sub>PD</sub>	power dissipation capacitance	f <sub>i</sub> = 1 MHz; V <sub>I</sub> = GND to V <sub>CC</sub>	[5]	-	12	-	-	-	-	pF
<b>74AHCT573-Q100; V<sub>CC</sub> = 4.5 V to 5.5 V</b>										
t <sub>pd</sub>	propagation delay	Dn to Qn; see <a href="#">Figure 7</a>	[2]							
		C <sub>L</sub> = 15 pF	-	3.5	5.5	1	6.5	1	7.0	ns
		C <sub>L</sub> = 50 pF	-	4.9	7.5	1	8.5	1	9.5	ns
		LE to Qn; see <a href="#">Figure 8</a>	[2]							
		C <sub>L</sub> = 15 pF	-	3.9	6.0	1	7.0	1	7.5	ns
t <sub>en</sub>	enable time	OE to Qn; see <a href="#">Figure 9</a>	[3]							
		C <sub>L</sub> = 15 pF	-	4.1	6.5	1	7.5	1	8.5	ns
		C <sub>L</sub> = 50 pF	-	5.9	8.5	1	10.0	1	11.0	ns
t <sub>dis</sub>	disable time	OE to Qn; see <a href="#">Figure 9</a>	[4]							
		C <sub>L</sub> = 15 pF	-	4.5	6.5	1	7.5	1	8.5	ns
		C <sub>L</sub> = 50 pF	-	6.4	9.0	1	10.0	1	11.5	ns
t <sub>w</sub>	pulse width	LE HIGH; see <a href="#">Figure 8</a>	5.0	-	-	5.0	-	5.0	-	ns
t <sub>su</sub>	set-up time	Dn to LE; see <a href="#">Figure 10</a>	3.5	-	-	3.5	-	3.5	-	ns
t <sub>h</sub>	hold time	Dn to LE; see <a href="#">Figure 10</a>	1.5	-	-	1.5	-	1.5	-	ns
C <sub>PD</sub>	power dissipation capacitance	f <sub>i</sub> = 1 MHz; V <sub>I</sub> = GND to V <sub>CC</sub>	[5]	-	18	-	-	-	-	pF

[1] Typical values are measured at nominal supply voltage (V<sub>CC</sub> = 3.3 V and V<sub>CC</sub> = 5.0 V).[2] t<sub>pd</sub> is the same as t<sub>PHL</sub> and t<sub>TPLH</sub>.[3] t<sub>en</sub> is the same as t<sub>PZH</sub> and t<sub>TPZL</sub>.[4] t<sub>dis</sub> is the same as t<sub>PHZ</sub> and t<sub>TPZL</sub>.[5] C<sub>PD</sub> is used to determine the dynamic power dissipation (P<sub>D</sub> in  $\mu$ W).

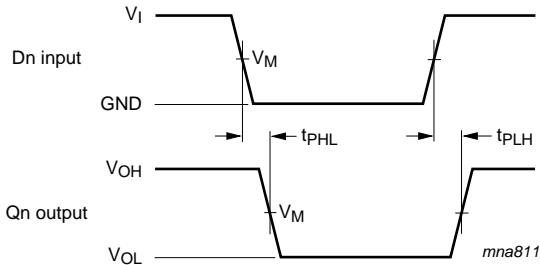
$$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \sum(C_L \times V_{CC}^2 \times f_o) \text{ where:}$$

f<sub>i</sub> = input frequency in MHz;f<sub>o</sub> = output frequency in MHz;C<sub>L</sub> = output load capacitance in pF;V<sub>CC</sub> = supply voltage in V;

N = number of inputs switching;

 $\Sigma(C_L \times V_{CC}^2 \times f_o)$  = sum of the outputs.

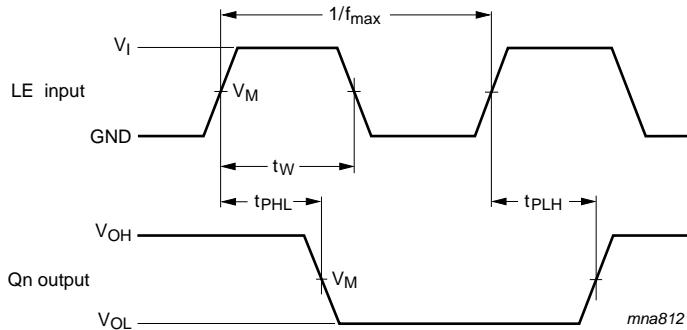
## 11. Waveforms



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

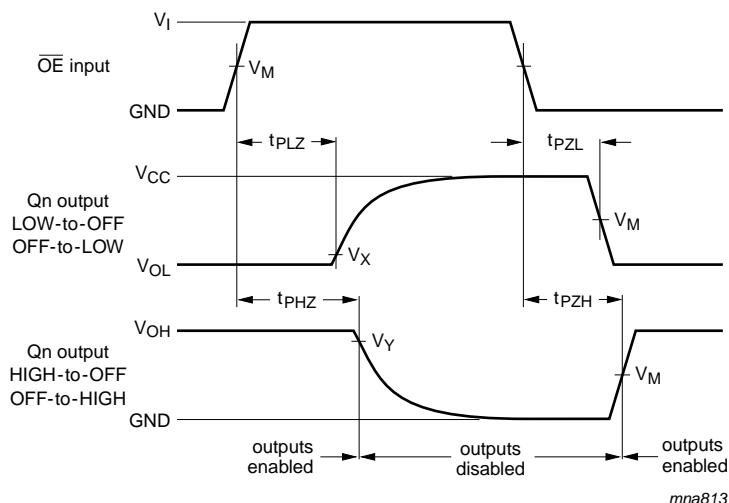
$V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

**Fig 7. Data input to output propagation delays**



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

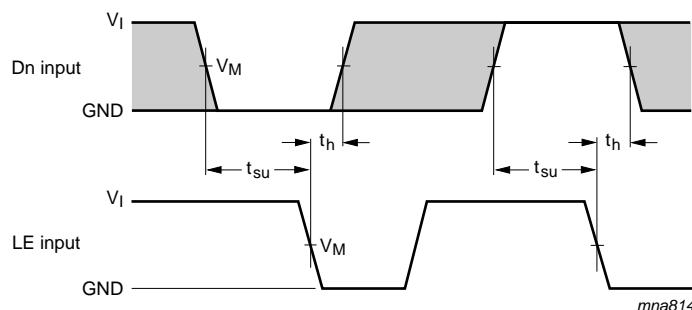
**Fig 8. Latch enable input to output propagation delays**



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**



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

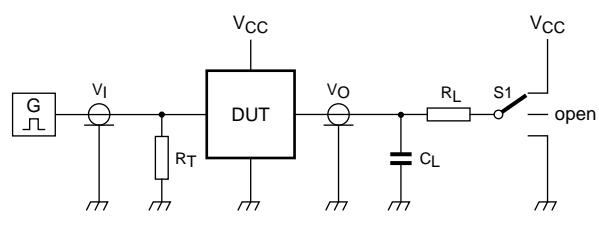
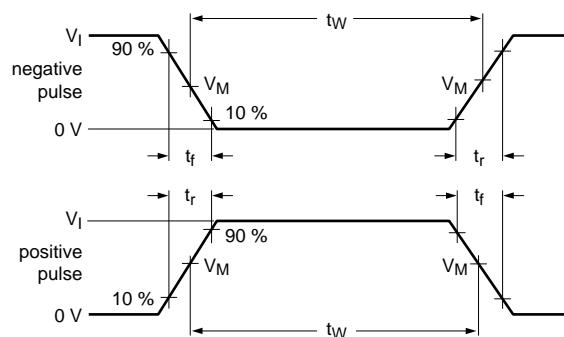
$V_{OL}$  and  $V_{OH}$  are typical voltage output levels that occur with the output load.

The shaded areas indicate when the input is permitted to change for predictable output performance.

**Fig 10. Data set-up and hold times**

**Table 8. Measurement points**

Type	Input $V_M$	Output		
		$V_M$	$V_X$	$V_Y$
74AHC573-Q100	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	$V_{OL} + 0.3 \text{ V}$	$V_{OH} - 0.3 \text{ V}$
74AHCT573-Q100	1.5 V	$0.5 \times V_{CC}$	$V_{OL} + 0.3 \text{ V}$	$V_{OH} - 0.3 \text{ V}$



001aad983

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 11. Test circuit for measuring switching times**

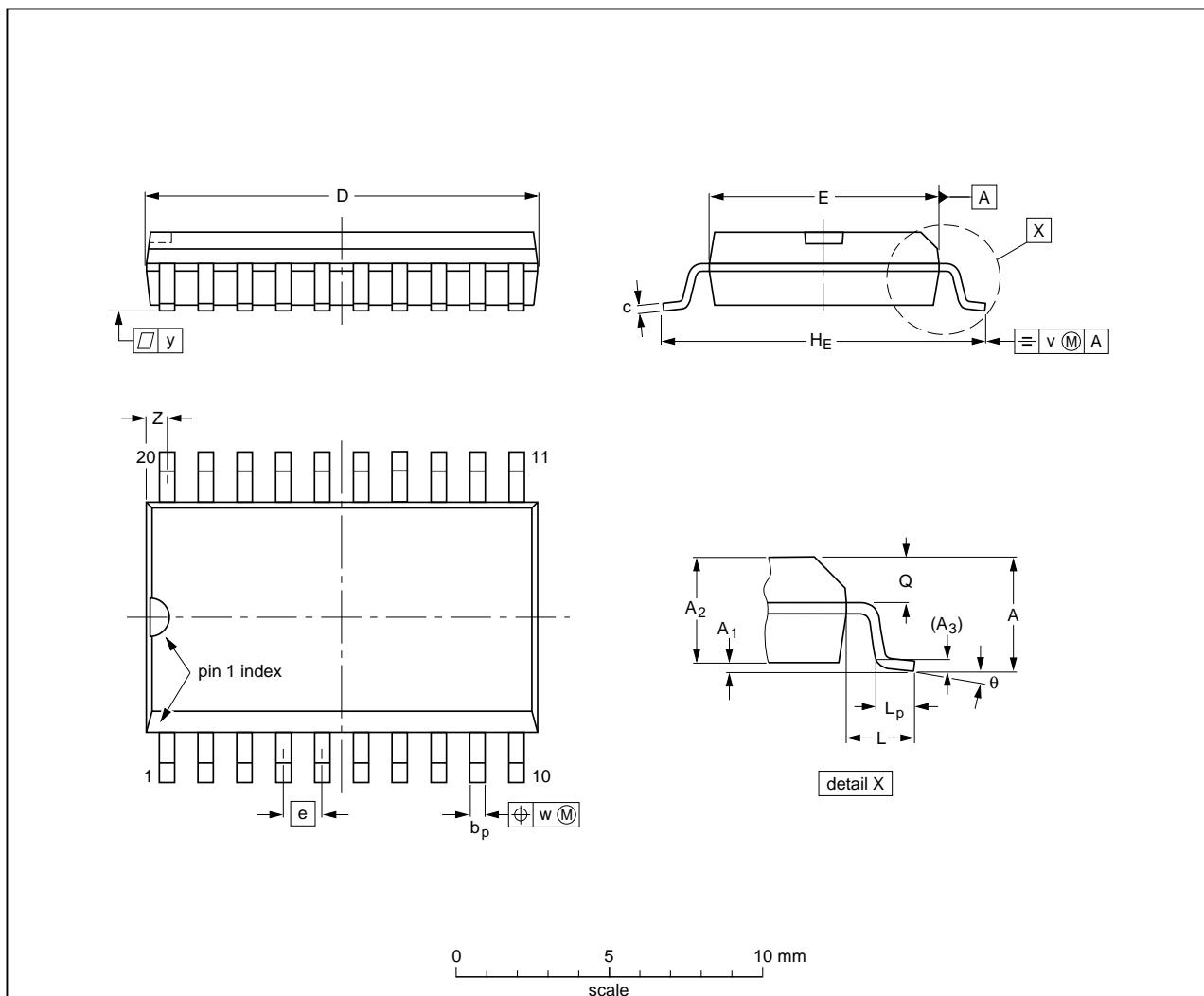
**Table 9. Test data**

Type	Input		Load		S1 position		
	$V_I$	$t_r, t_f$	$C_L$	$R_L$	$t_{PHL}, t_{PLH}$	$t_{PZH}, t_{PHZ}$	$t_{PZL}, t_{PLZ}$
74AHC573-Q100	$V_{CC}$	$\leq 3.0 \text{ ns}$	15 pF, 50 pF	1 k $\Omega$	open	GND	$V_{CC}$
74AHCT573-Q100	3.0 V	$\leq 3.0 \text{ ns}$	15 pF, 50 pF	1 k $\Omega$	open	GND	$V_{CC}$

## 12. Package outline

SO20: plastic small outline package; 20 leads; body width 7.5 mm

SOT163-1



### DIMENSIONS (inch dimensions are derived from the original mm dimensions)

UNIT	A max.	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	b <sub>p</sub>	c	D <sup>(1)</sup>	E <sup>(1)</sup>	e	H <sub>E</sub>	L	L <sub>p</sub>	Q	v	w	y	z <sup>(1)</sup>	θ
mm	2.65 0.1	0.3 2.25	2.45	0.25	0.49 0.36	0.32 0.23	13.0 12.6	7.6 7.4	1.27	10.65 10.00	1.4	1.1 0.4	1.1 1.0	0.25	0.25	0.1	0.9 0.4	8°
inches	0.1	0.012 0.004	0.096 0.089	0.01	0.019 0.014	0.013 0.009	0.51 0.49	0.30 0.29	0.05	0.419 0.394	0.055	0.043 0.016	0.043 0.039	0.01	0.01	0.004	0.035 0.016	0°

### Note

- Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT163-1	075E04	MS-013			-99-12-27 03-02-19

Fig 12. Package outline SOT163-1 (SO20)

TSSOP20: plastic thin shrink small outline package; 20 leads; body width 4.4 mm

SOT360-1

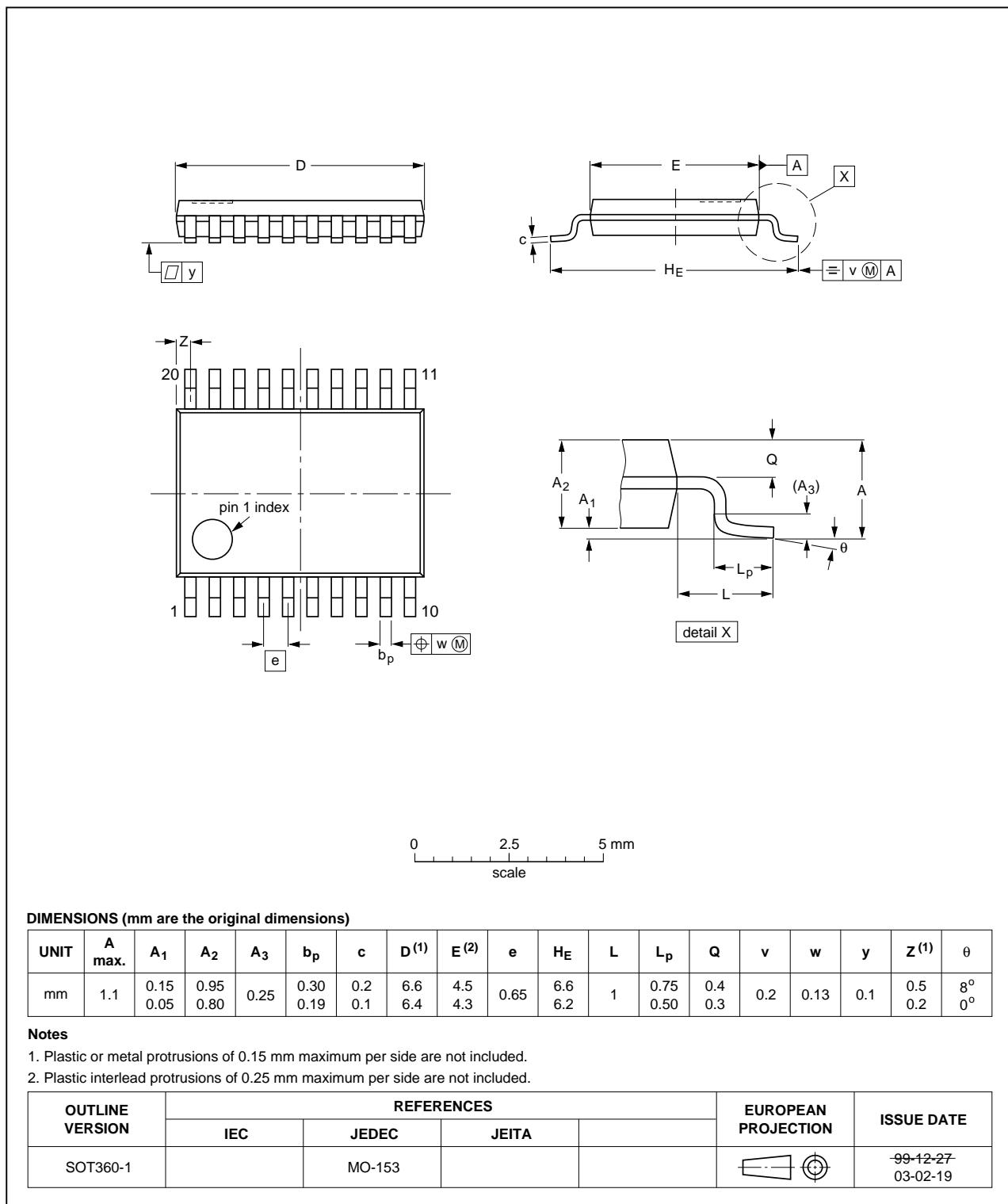


Fig 13. Package outline SOT360-1 (TSSOP20)

DHVQFN20: plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads;  
20 terminals; body 2.5 x 4.5 x 0.85 mm

SOT764-1

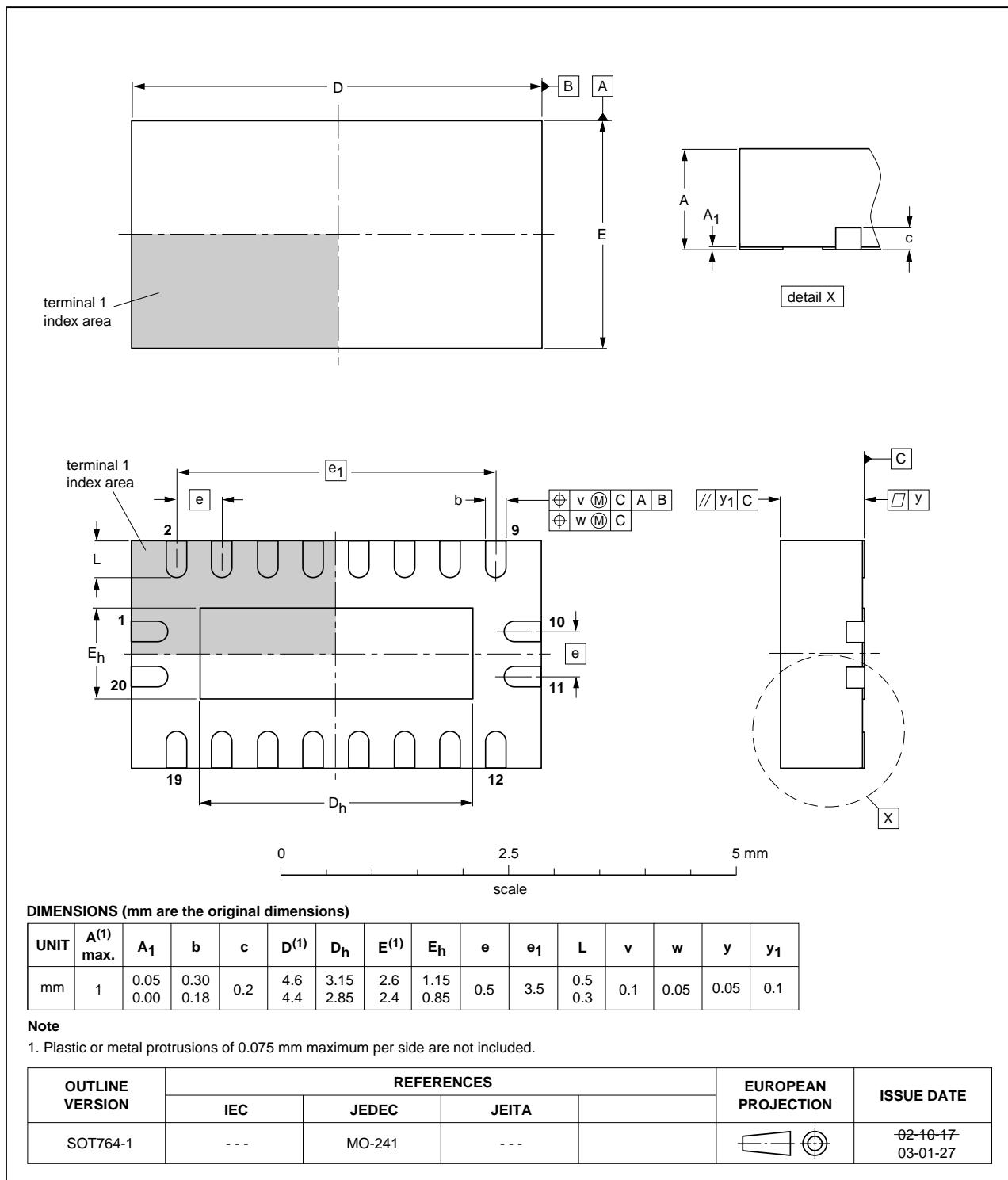


Fig 14. Package outline SOT764-1 (DHVQFN20)

## 13. Abbreviations

**Table 10. Abbreviations**

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

## 14. Revision history

**Table 11. Revision history**

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AHC_AHCT573_Q100 v.1	20130610	Product data sheet	-	-

## 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.

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[2] The term 'short data sheet' is explained in section "Definitions".

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

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