

# CDx4HC251、CDx4HCT251 ハイスピード CMOS ロジック、8 入力マルチプレクサ、スリー・ステート

## 1 特長

- 8 つのバイナリ・データ入力のいずれかを選択
- スリー・ステート出力能力
- 真および補数出力
- 14ns の伝搬遅延 (出力データ標準値、 $V_{CC} = 5V$ 、 $C_L = 15pF$ 、 $T_A = 25^\circ C$ )
- ファンアウト (全温度範囲にわたって)
  - 標準出力: 10 の LSTTL 負荷
  - バス・ドライバ出力: 15 の LSTTL 負荷
- 広い動作温度範囲:  $-55^\circ C \sim 125^\circ C$
- 平衡な伝搬遅延と遷移時間
- LSTTL ロジック IC に比べて消費電力を大幅削減
- Philips 社製品を代替
- HC タイプ
  - 2V~6V で動作
  - 優れたノイズ耐性:  $V_{CC}$  の  $N_{IL} = 30\%$ 、 $N_{IH} = 30\%$  ( $V_{CC} = 5V$  時)
- HCT タイプ
  - 4.5V~5.5V で動作
  - LSTTL 入力ロジックと直接互換、 $V_{IL} = 0.8V$  (最大値)、 $V_{IH} = 2V$  (最小値)
  - CMOS 入力互換、 $V_{OL}$ 、 $V_{OH}$  で  $I_I \leq 1\mu A$

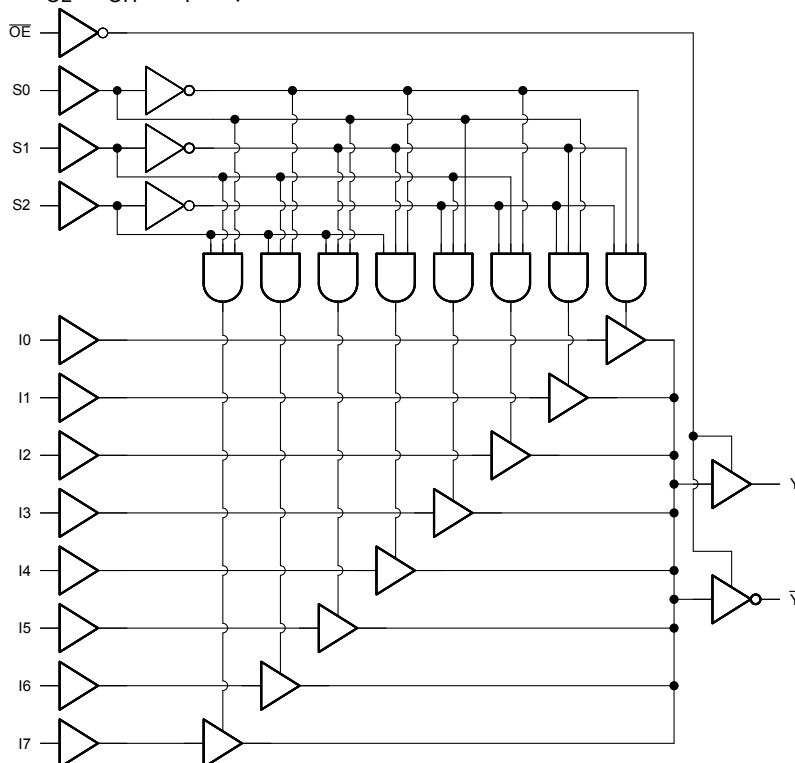
## 2 説明

HC251 および HCT251 は、スリー・ステート出力を備えた 8 チャンネルのデジタル・マルチプレクサで、高速シリコンゲート CMOS テクノロジーを使用して製造されています。標準 CMOS IC の低消費電力と、10 個の LSTTL 負荷に耐える駆動能力とを合わせ持っています。スリー・ステート機能を備えているため、バス指向システムでのバス・ラインとのインターフェイスに最適です。

### デバイス情報

部品番号	パッケージ <sup>(1)</sup>	本体サイズ (公称)
CD54HC251F	CDIP (16)	24.38mm × 6.92mm
CD54HCT251F	CDIP (16)	24.38mm × 6.92mm
CD74HC251M	SOIC (16)	9.90mm × 3.90mm
CD74HCT251M	SOIC (16)	9.90mm × 3.90mm
CD74HC251E	PDIP (16)	19.31mm × 6.35mm
CD74HCT251E	PDIP (16)	19.31mm × 6.35mm

(1) 利用可能なパッケージについては、このデータシートの末尾にある注文情報を参照してください。



機能ブロック図



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### 3 Revision History

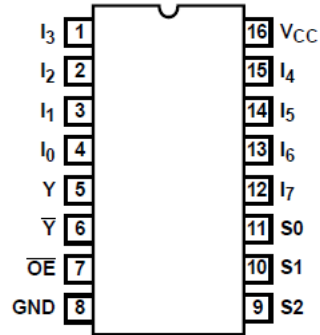
資料番号末尾の英字は改訂を表しています。その改訂履歴は英語版に準じています。

#### Changes from Revision C (October 2003) to Revision D (March 2022)

Page

- 最新のデータシート規格を反映するように、文書全体の表、図、相互参照の採番と書式設定を更新..... 1

## 4 Pin Configuration and Functions



**J, N, or D Package**  
**16-Pin CDIP, PDIP, or SOIC**  
**Top View**

## 5 Specifications

### 5.1 Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)<sup>(1)</sup>

		MIN	MAX	UNIT
$V_{CC}$	Supply voltage range	-0.5	7	V
$I_{IK}$	Input diode current <sup>(2)</sup>	$V_I < 0.5\text{ V}$ or $V_I > V_{CC} + 0.5\text{ V}$		±20 mA
$I_{OK}$	Output diode current <sup>(2)</sup>	$V_O < -0.5\text{ V}$ or $V_O > V_{CC} + 0.5\text{ V}$		±20 mA
$I_O$	Drain current, per output	$-0.5\text{ V} < V_O < V_{CC} + 0.5\text{ V}$		±25 mA
$I_O$	Output source or sink current per output pin	$V_O > -0.5\text{ V}$ or $V_O < V_{CC} + 0.5\text{ V}$		±25 mA
	Continuous current through $V_{CC}$ or GND		±50	mA
$T_J$	Junction temperature		150	°C
$T_{stg}$	Storage temperature	-65	150	°C
	Lead temperature (Soldering 10s) (SOIC - lead tips only)		300	°C

- (1) Stresses beyond those listed under *absolute maximum ratings* may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under *recommended operating conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- (2) The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

### 5.2 Recommended Operating Conditions<sup>(1)</sup>

		MIN	MAX	UNIT	
$V_{CC}$	Supply voltage range	HC Types	2	6	V
		HCT Types	4.5	5.5	V
$V_I, V_O$	DC input or output voltage	0	$V_{CC}$	V	
$t_t$	Input rise and fall time	2 V	1000	ns	
		4.5 V	500		
		6 V	400		
$T_A$	Temperature range	- 55	125	°C	

- (1) All unused inputs of the device must be held at  $V_{CC}$  or GND to ensure proper device operation. Refer to the TI application report Implications of Slow or Floating SMOS Inputs, literature number [SCBA004](#).

### 5.3 Thermal Information

THERMAL METRIC		D (SOIC)	N (PDIP)	UNIT
		16 PINS	16 PINS	
$R_{\theta JA}$	Junction-to-ambient thermal resistance <sup>(1)</sup>	67	73	°C/W

- (1) For more information about traditional and new thermal metrics, see the [Semiconductor and IC package thermal metrics](#) application report.

## 5.4 Electrical Characteristics

PARAMETER		TEST CONDITIONS <sup>(1)</sup>	V <sub>CC</sub> (V)	25°C			–40°C to 85°C		–55°C to 125°C		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
<b>HC TYPES</b>											
V <sub>IH</sub>	High-level input voltage		2	1.5		1.5		1.5		V	
			4.5	3.15		3.15		3.15		V	
			6	4.2		4.2		4.2		V	
V <sub>IL</sub>	Low-level input voltage		2		0.5		0.5		0.5	V	
			4.5		1.35		1.35		1.35	V	
			6		1.8		1.8		1.8	V	
V <sub>OH</sub>	High-level output voltage CMOS loads	I <sub>OH</sub> = –20μA	2	1.9		1.9		1.9		V	
		I <sub>OH</sub> = –20μA	4.5	4.4		4.4		4.4		V	
		I <sub>OH</sub> = –20μA	6	5.9		5.9		5.9		V	
	High-level output voltage TTL loads	I <sub>OH</sub> = –6mA	4.5	3.98		3.84		3.7		V	
		I <sub>OH</sub> = –7.8mA	6	5.48		5.34		5.2		V	
V <sub>OL</sub>	Low-level output voltage CMOS loads	I <sub>OL</sub> = 20μA	2		0.1		0.1		0.1	V	
		I <sub>OL</sub> = 20μA	4.5		0.1		0.1		0.1	V	
		I <sub>OL</sub> = 20μA	6		0.1		0.1		0.1	V	
	Low-level output voltage TTL loads	I <sub>OL</sub> = 6mA	4.5		0.26		0.33		0.4	V	
		I <sub>OL</sub> = 7.8mA	6		0.26		0.33		0.4	V	
I <sub>I</sub>	Input leakage current	V <sub>CC</sub> or GND	6		±0.1		±1		±1	μA	
I <sub>CC</sub>	Supply current	V <sub>CC</sub> or GND	6		8		80		160	μA	
I <sub>OZ</sub>	Three-state leakage current		6		±0.5		±0.5		±10	μA	
<b>HCT TYPES</b>											
V <sub>IH</sub>	High-level input voltage		4.5 to 5.5	2		2		2		V	
V <sub>IL</sub>	Low-level input voltage		4.5 to 5.5		0.8		0.8		0.8	V	
V <sub>OH</sub>	High-level output voltage CMOS loads	I <sub>OH</sub> = –20μA	4.5	4.4		4.4		4.4		V	
	High-level output voltage TTL loads	I <sub>OH</sub> = –6mA	4.5	3.98		3.84		3.7		V	
V <sub>OL</sub>	Low-level output voltage CMOS loads	I <sub>OL</sub> = 20μA	4.5		0.1		0.1		0.1	V	
	Low-level output voltage TTL loads	I <sub>OL</sub> = 6mA	4.5		0.26		0.33		0.4	V	
I <sub>I</sub>	Input leakage current	V <sub>CC</sub> and GND	5.5		±0.1		±1		±1	μA	
I <sub>CC</sub>	Supply Current	V <sub>CC</sub> and GND	5.5		8		80		160	μA	
I <sub>OZ</sub>	Three-state leakage current		6		±0.5		±5.0		±10	μA	
ΔI <sub>CC</sub> <sup>(2) (3)</sup>	Additional supply current per input pin	S0, S1, S2	4.5 to 5.5		55 198		247.5		269.5	μA	
		I0 - I7	4.5 to 5.5		50 180		225		245	μA	
		$\overline{OE}$	4.5 to 5.5		265 954		1192.5		1298.5	μA	

(1) V<sub>I</sub> = V<sub>IH</sub> or V<sub>IL</sub>, unless otherwise noted.

(2) For dual-supply systems theoretical worst case (V<sub>I</sub> = 2.4 V, V<sub>CC</sub> = 5.5 V) specification is 1.8 mA..

(3) Inputs held at V<sub>CC</sub> – 2.1.

## 5.5 Switching Characteristics

Input  $t_f = 6\text{ns}$ . Unless otherwise specified,  $C_L = 50\text{pF}$

PARAMETER		$V_{CC}$ (V)	25°C		-40°C to 85°C	-55°C to 125°C	UNIT
			TYP	MAX	MAX	MAX	
<b>HC TYPES</b>							
$t_{pd}$	Select to outputs	2		245	305	370	ns
		4.5	21 <sup>(1)</sup>	49	61	74	
		6		42	52	63	
$t_{pd}$	Data to outputs	2		175	220	265	ns
		4.5	12 <sup>(1)</sup>	35	44	53	
		6		30	37	45	
$t_{pd}$	Enable to high Z and enable from high Z	2		140	175	210	ns
		4.5	11 <sup>(1)</sup>	28	35	42	
		6		24	30	36	
$t_t$	Output transition times	2		75	95	110	ns
		4.5		15	19	22	
		6		13	16	19	
$C_i$	Input capacitance			10	10	10	pF
$C_O$	Three-state output capacitance			15	15	15	pF
$C_{pd}$ <sup>(3) (4)</sup>	Power dissipation capacitance	5	60 <sup>(2)</sup>				pF
<b>HCT TYPES</b>							
$t_{pd}$	Select to outputs	4.5	18 <sup>(1)</sup>	42	53	63	ns
$t_{pd}$	Data to outputs	4.5	12 <sup>(1)</sup>	35	44	53	ns
$t_{pd}$	Enable to high Z and enable from high Z	4.5	12 <sup>(1)</sup>	30	38	45	ns
$t_t$	Output transition times	4.5		15	19	22	ns
$C_i$	Input capacitance			10	10	10	pF
$C_{pd}$ <sup>(3) (4)</sup>	Power dissipation capacitance	5	60 <sup>(2)</sup>				pF

(1) Typical value tested at 5V,  $C_L = 15\text{pF}$ .

(2) Typical value tested at 5V.

(3)  $C_{PD}$  is used to determine the dynamic power consumption, per channel.

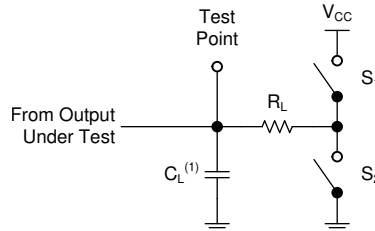
(4)  $P_D = V_{CC}^2 f_i (C_{PD} + C_L)$  where  $f_i$  = input frequency,  $C_L$  = output load capacitance,  $V_{CC}$  = supply voltage.

## 6 Parameter Measurement Information

Phase relationships between waveforms were chosen arbitrarily. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1 \text{ MHz}$ ,  $Z_O = 50 \Omega$ ,  $t_t < 6 \text{ ns}$ .

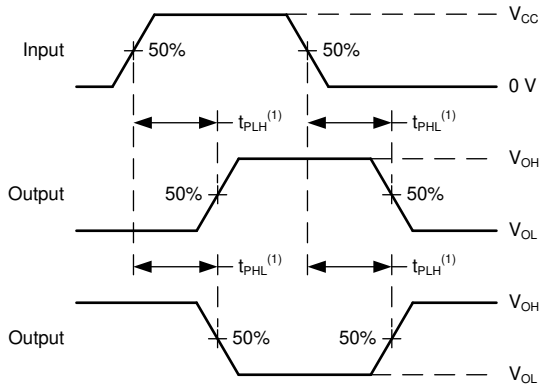
For clock inputs,  $f_{max}$  is measured when the input duty cycle is 50%.

The outputs are measured one at a time with one input transition per measurement.



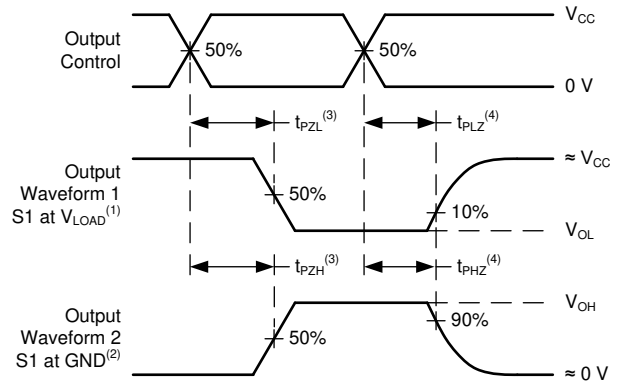
(1)  $C_L$  includes probe and test-fixture capacitance.

**6-1. Load Circuit for 3-State Outputs**



(1) The greater between  $t_{PLH}$  and  $t_{PHL}$  is the same as  $t_{pd}$ .

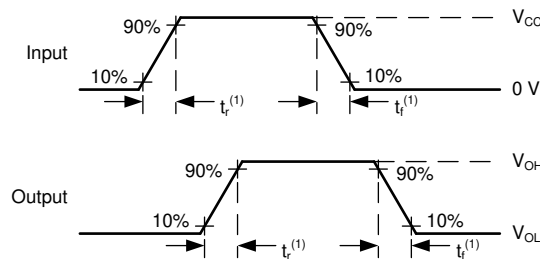
**6-2. Voltage Waveforms, Propagation Delays for Standard CMOS Inputs**



(1)  $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .

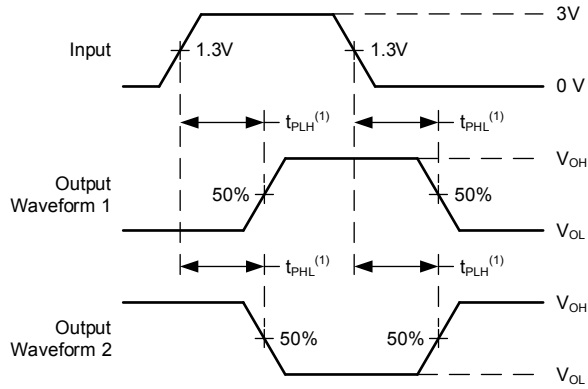
(2)  $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .

**6-3. Voltage Waveforms, Standard CMOS Inputs Propagation Delays**



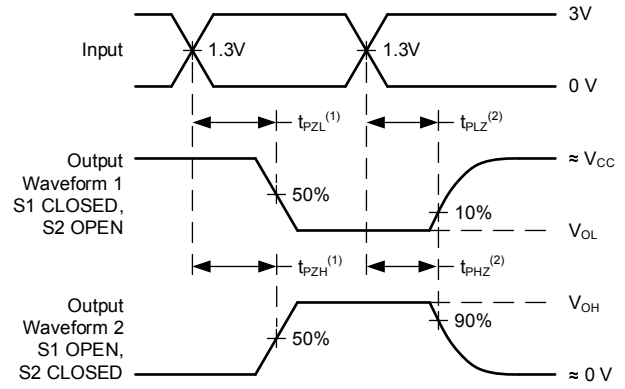
(1) The greater between  $t_r$  and  $t_f$  is the same as  $t_t$ .

**6-4. Voltage Waveforms, Input and Output Transition Times for Standard CMOS Inputs**



(1) The greater between  $t_{PLH}$  and  $t_{PHL}$  is the same as  $t_{pd}$ .

**6-5. Voltage Waveforms, Propagation Delays for TTL-Compatible Inputs**



(1)  $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .

(2)  $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .

**6-6. Voltage Waveforms, TTL-Compatible CMOS Inputs Propagation Delays**

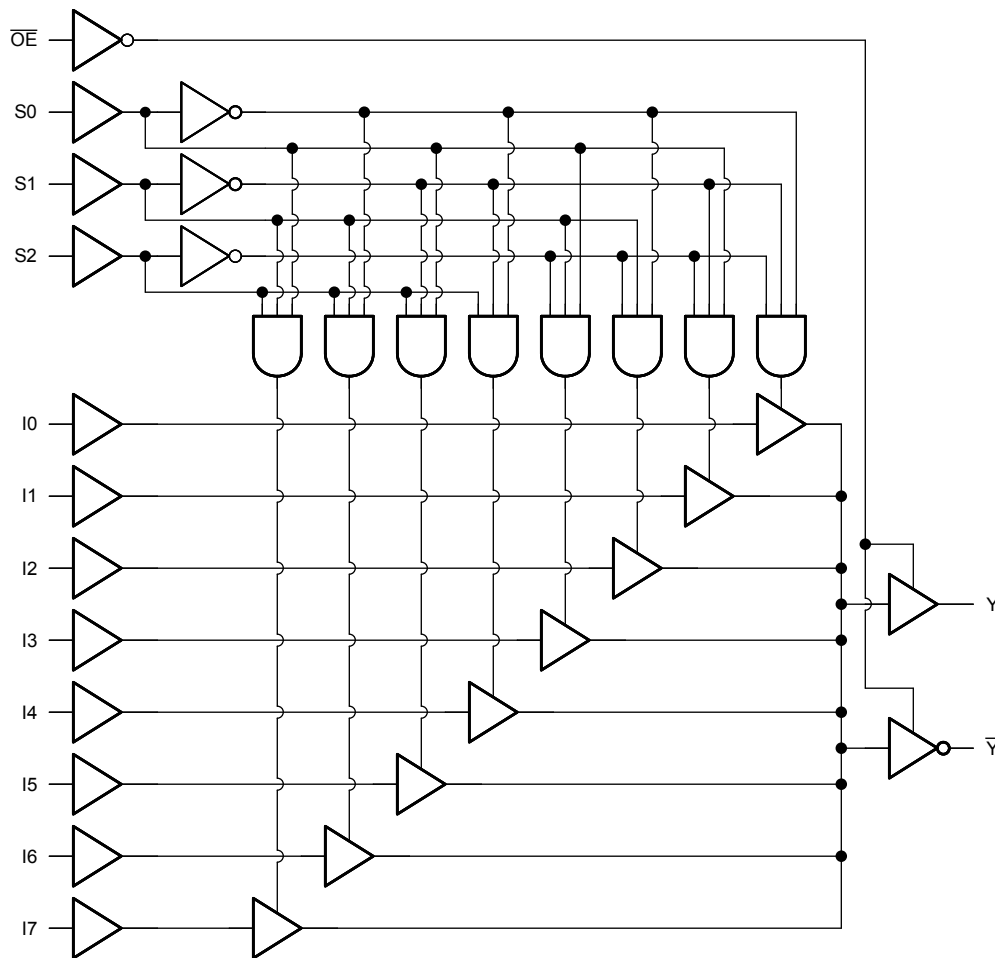
## 7 Detailed Description

### 7.1 Overview

The 'HC251 and 'HCT251 are 8-channel digital multiplexers with three-state outputs, fabricated with high-speed silicongate CMOS technology. Together with the low power consumption of standard CMOS integrated circuits, they possess the ability to drive 10 LSTTL loads. The three-state feature makes them ideally suited for interfacing with bus lines in a bus-oriented system.

This multiplexer features both true ( $Y$ ) and complement ( $\bar{Y}$ ) outputs as well as an output enable ( $\overline{OE}$ ) input. The  $\overline{OE}$  must be at a low logic level to enable this device. When the  $\overline{OE}$  input is high, both outputs are in the high-impedance state. When enabled, address information on the data select inputs determines which data input is routed to the  $Y$  and  $\bar{Y}$  outputs. The 'HCT251 logic family is speed, function, and pin-compatible with the standard 'LS251.

### 7.2 Functional Block Diagram



### 7.3 Device Functional Modes

表 7-1. Truth Table<sup>(1)</sup>

INPUTS				OUTPUT	
SELECT			OUTPUT CONTROL OE	Y	Ȳ
S2	S1	S0			
X	X	X	H	Z	Z
L	L	L	L	I <sub>0</sub>	Ȫ <sub>0</sub>
L	L	H	L	I <sub>1</sub>	Ȫ <sub>1</sub>
L	H	L	L	I <sub>2</sub>	Ȫ <sub>2</sub>
L	H	H	L	I <sub>3</sub>	Ȫ <sub>3</sub>
H	L	L	L	I <sub>4</sub>	Ȫ <sub>4</sub>
H	L	H	L	I <sub>5</sub>	Ȫ <sub>5</sub>
H	H	L	L	I <sub>6</sub>	Ȫ <sub>6</sub>
H	H	H	L	I <sub>7</sub>	Ȫ <sub>7</sub>

- (1) H = High voltage level.  
 L = Low voltage level.  
 X = Dont care.  
 Z = High impedance (Off).  
 I<sub>0</sub>, I<sub>1</sub>... I<sub>7</sub> = The level of the respective input.

## 8 Power Supply Recommendations

The power supply can be any voltage between the minimum and maximum supply voltage rating located in the *Recommended Operating Conditions*. Each  $V_{CC}$  terminal should have a good bypass capacitor to prevent power disturbance. A 0.1- $\mu\text{F}$  capacitor is recommended for this device. It is acceptable to parallel multiple bypass caps to reject different frequencies of noise. The 0.1- $\mu\text{F}$  and 1- $\mu\text{F}$  capacitors are commonly used in parallel. The bypass capacitor should be installed as close to the power terminal as possible for best results.

## 9 Layout

### 9.1 Layout Guidelines

When using multiple-input and multiple-channel logic devices inputs must not ever be left floating. In many cases, functions or parts of functions of digital logic devices are unused; for example, when only two inputs of a triple-input AND gate are used or only 3 of the 4 buffer gates are used. Such unused input pins must not be left unconnected because the undefined voltages at the outside connections result in undefined operational states. All unused inputs of digital logic devices must be connected to a logic high or logic low voltage, as defined by the input voltage specifications, to prevent them from floating. The logic level that must be applied to any particular unused input depends on the function of the device. Generally, the inputs are tied to GND or  $V_{CC}$ , whichever makes more sense for the logic function or is more convenient.

## 10 Device and Documentation Support

TI offers an extensive line of development tools. Tools and software to evaluate the performance of the device, generate code, and develop solutions are listed below.

### 10.1 Documentation Support

#### 10.1.1 Related Documentation

### 10.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on [ti.com](https://www.ti.com). Click on *Subscribe to updates* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

### 10.3 サポート・リソース

TI E2E™ サポート・フォーラムは、エンジニアが検証済みの回答と設計に関するヒントをエキスパートから迅速かつ直接得ることができる場所です。既存の回答を検索したり、独自の質問をしたりすることで、設計に必要な支援を迅速に得ることができます。

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### 10.4 Trademarks

TI E2E™ is a trademark of Texas Instruments.

すべての商標は、それぞれの所有者に帰属します。

### 10.5 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

### 10.6 Glossary

[TI Glossary](#) This glossary lists and explains terms, acronyms, and definitions.

## 11 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

**PACKAGING INFORMATION**

Orderable part number	Status (1)	Material type (2)	Package   Pins	Package qty   Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
<a href="#">5962-9052401MEA</a>	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9052401ME A CD54HCT251F3A
<a href="#">CD54HC251F</a>	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	CD54HC251F
CD54HC251F.A	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	CD54HC251F
<a href="#">CD54HC251F3A</a>	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	8512501EA CD54HC251F3A
CD54HC251F3A.A	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	8512501EA CD54HC251F3A
<a href="#">CD54HCT251F3A</a>	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9052401ME A CD54HCT251F3A
CD54HCT251F3A.A	Active	Production	CDIP (J)   16	25   TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9052401ME A CD54HCT251F3A
<a href="#">CD74HC251E</a>	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	-55 to 125	CD74HC251E
CD74HC251E.A	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	-55 to 125	CD74HC251E
<a href="#">CD74HC251M</a>	Obsolete	Production	SOIC (D)   16	-	-	Call TI	Call TI	-55 to 125	HC251M
<a href="#">CD74HC251M96</a>	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-55 to 125	HC251M
CD74HC251M96.A	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-55 to 125	HC251M
<a href="#">CD74HC251MT</a>	Obsolete	Production	SOIC (D)   16	-	-	Call TI	Call TI	-55 to 125	HC251M
<a href="#">CD74HCT251E</a>	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	-55 to 125	CD74HCT251E
CD74HCT251E.A	Active	Production	PDIP (N)   16	25   TUBE	Yes	NIPDAU	N/A for Pkg Type	-55 to 125	CD74HCT251E
<a href="#">CD74HCT251M</a>	Obsolete	Production	SOIC (D)   16	-	-	Call TI	Call TI	-55 to 125	HCT251M
<a href="#">CD74HCT251M96</a>	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU   SN	Level-1-260C-UNLIM	-55 to 125	HCT251M
CD74HCT251M96.A	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-55 to 125	HCT251M
CD74HCT251M96G4	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-55 to 125	HCT251M
CD74HCT251M96G4.A	Active	Production	SOIC (D)   16	2500   LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-55 to 125	HCT251M
<a href="#">CD74HCT251MT</a>	Obsolete	Production	SOIC (D)   16	-	-	Call TI	Call TI	-55 to 125	HCT251M

<sup>(1)</sup> **Status:** For more details on status, see our [product life cycle](#).

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

(4) **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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**OTHER QUALIFIED VERSIONS OF CD54HC251, CD54HCT251, CD74HC251, CD74HCT251 :**

● Catalog : [CD74HC251](#), [CD74HCT251](#)

● Military : [CD54HC251](#), [CD54HCT251](#)

**NOTE: Qualified Version Definitions:**

- Catalog - TI's standard catalog product
- Military - QML certified for Military and Defense Applications

## TAPE AND REEL INFORMATION



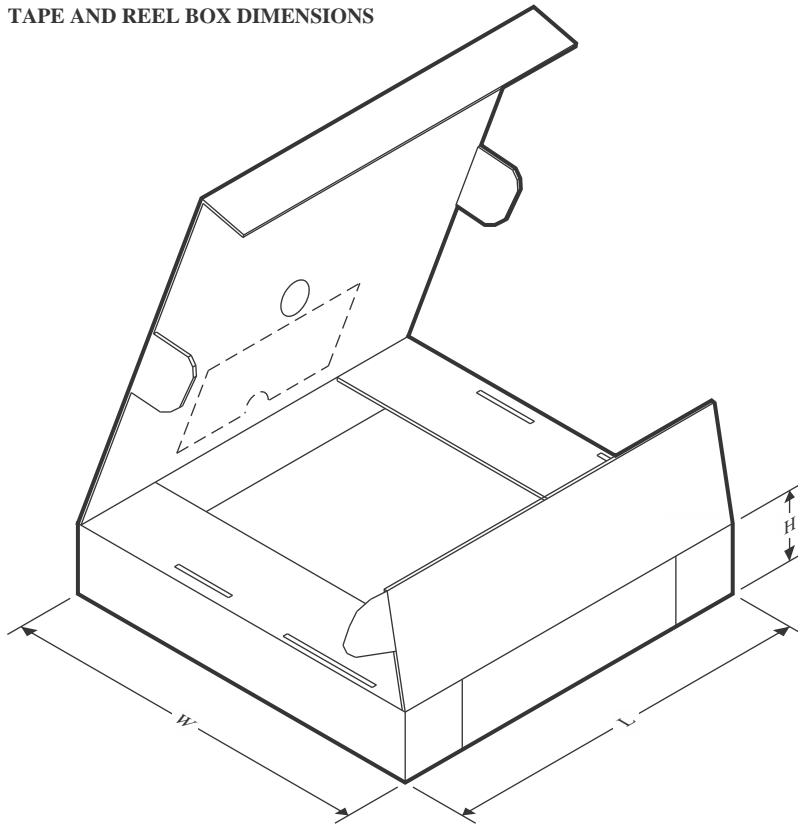
### QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



\*All dimensions are nominal

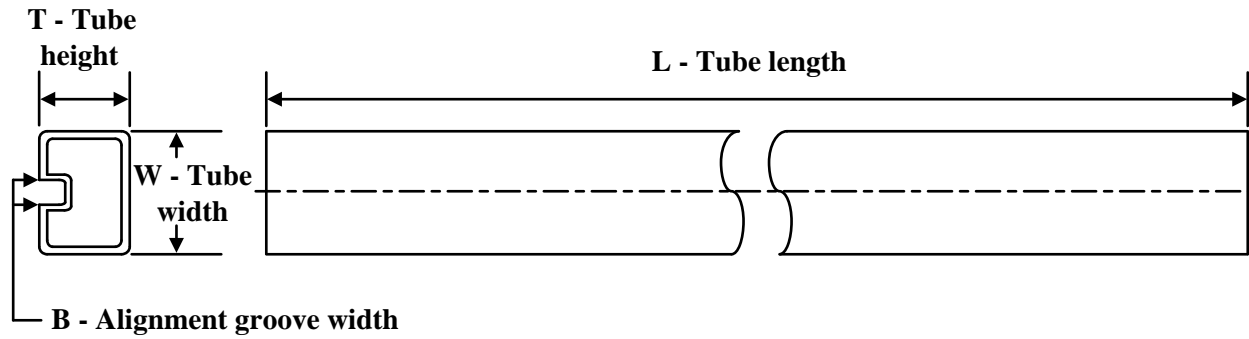
Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
CD74HC251M96	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
CD74HCT251M96	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
CD74HCT251M96G4	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1

## TAPE AND REEL BOX DIMENSIONS



\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
CD74HC251M96	SOIC	D	16	2500	353.0	353.0	32.0
CD74HCT251M96	SOIC	D	16	2500	353.0	353.0	32.0
CD74HCT251M96G4	SOIC	D	16	2500	353.0	353.0	32.0

**TUBE**


\*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
CD74HC251E	N	PDIP	16	25	506	13.97	11230	4.32
CD74HC251E	N	PDIP	16	25	506	13.97	11230	4.32
CD74HC251E.A	N	PDIP	16	25	506	13.97	11230	4.32
CD74HC251E.A	N	PDIP	16	25	506	13.97	11230	4.32
CD74HCT251E	N	PDIP	16	25	506	13.97	11230	4.32
CD74HCT251E	N	PDIP	16	25	506	13.97	11230	4.32
CD74HCT251E.A	N	PDIP	16	25	506	13.97	11230	4.32
CD74HCT251E.A	N	PDIP	16	25	506	13.97	11230	4.32



J (R-GDIP-T\*\*)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



DIM \ PINS **	14	16	18	20
A	0.300 (7,62) BSC	0.300 (7,62) BSC	0.300 (7,62) BSC	0.300 (7,62) BSC
B MAX	0.785 (19,94)	.840 (21,34)	0.960 (24,38)	1.060 (26,92)
B MIN	—	—	—	—
C MAX	0.300 (7,62)	0.300 (7,62)	0.310 (7,87)	0.300 (7,62)
C MIN	0.245 (6,22)	0.245 (6,22)	0.220 (5,59)	0.245 (6,22)



4040083/F 03/03

- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package is hermetically sealed with a ceramic lid using glass frit.
  - Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
  - Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.



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