

# CDx4AC257, CDx4ACT257, CD74ACT258 Quad 2-Input Multiplexer with Three-State Outputs

## 1 Features

- 'AC257, 'ACT257..... non-inverting outputs
- CD74ACT258 ..... inverting outputs
- Buffered inputs
- Typical propagation delay
  - 4.4ns at  $V_{CC} = 5V$ ,  $T_A = 25^\circ C$ ,  $C_L = 50pF$
- Exceeds 2kV ESD protection MIL-STD-883, method 3015
- SCR-latchup-resistant CMOS process and circuit design
- Speed of bipolar FAST™/AS/S with significantly reduced power consumption
- Balanced Propagation Delays
- AC types feature 1.5V to 5.5V operation and balanced noise immunity at 30% of the supply
- $\pm 24mA$  output drive current
  - Fanout to 15 FAST™ ICs
- Drives 50Ω transmission lines

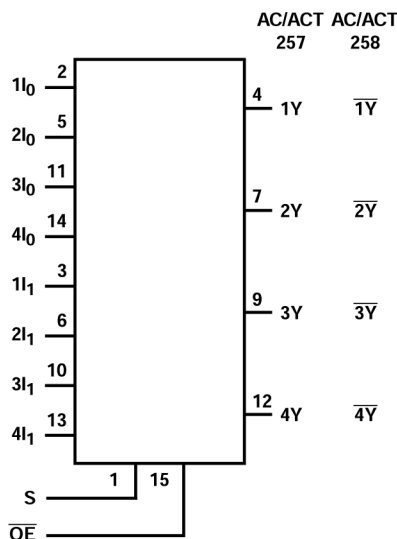
## 2 Description

The 'AC257, 'ACT257 and CD74ACT258 are quad 2-input multiplexers with three-state outputs that utilize Advanced CMOS Logic technology.

### Device Information

PART NUMBER	PACKAGE <sup>(1)</sup>	PACKAGE SIZE <sup>(2)</sup>	BODY SIZE <sup>(3)</sup>
CDx4AC257, CDx4ACT257, CD74ACT258	D (SOIC, 16)	9.9mm × 6mm	9.9mm × 3.9mm
	N (PDIP, 16)	19.3mm × 9.4mm	19.3mm × 6.35mm

- (1) For more information, see [Section 10](#).
- (2) The package size (length × width) is a nominal value and includes pins, where applicable.
- (3) The body size (length × width) is a nominal value and does not include pins.



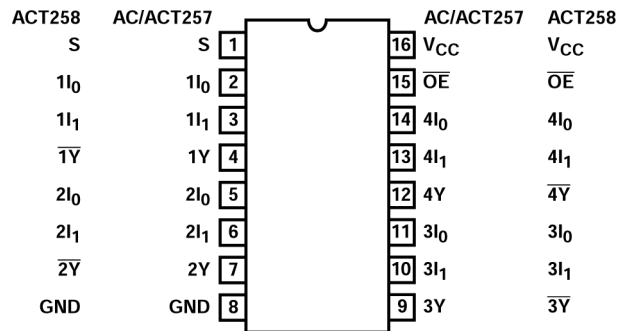
Functional Diagram



## Table of Contents

<b>1 Features</b> .....	1	<b>7 Application and Implementation</b> .....	11
<b>2 Description</b> .....	1	7.1 Power Supply Recommendations.....	11
<b>3 Pin Configuration and Functions</b> .....	3	7.2 Layout.....	11
<b>4 Specifications</b> .....	4	<b>8 Device and Documentation Support</b> .....	12
4.1 Absolute Maximum Ratings.....	4	8.1 Documentation Support (Analog).....	12
4.2 Recommended Operating Conditions.....	4	8.2 Receiving Notification of Documentation Updates....	12
4.3 Thermal Information.....	4	8.3 Support Resources.....	12
4.4 Electrical Characteristics.....	4	8.4 Trademarks.....	12
4.5 Switching Specifications.....	6	8.5 Electrostatic Discharge Caution.....	12
<b>5 Parameter Measurement Information</b> .....	8	8.6 Glossary.....	12
<b>6 Detailed Description</b> .....	10	<b>9 Revision History</b> .....	12
6.1 Overview.....	10	<b>10 Mechanical, Packaging, and Orderable Information</b> .....	12
6.2 Functional Block Diagram.....	10		
6.3 Device Functional Modes.....	10		

### 3 Pin Configuration and Functions



**Figure 3-1. CD54AC257, CD54ACT257 J Package; CD74AC257, CD74ACT257, CD74ACT258 N or D Package; 16-Pin CDIP, PDIP or SOIC (Top View)**

**Table 3-1. Pin Functions**

PIN		TYPE <sup>(1)</sup>	DESCRIPTION
NAME	NO.		
S	1	I	Select
1I <sub>0</sub>	2	I	Channel 1 Input 0
1I <sub>1</sub>	3	I	Channel 1 Input 1
1Y	4	O	Channel 1 Output
2I <sub>0</sub>	5	I	Channel 2 Input 0
2I <sub>1</sub>	6	I	Channel 2 Input 1
2Y	7	O	Channel 2 Output
GND	8	G	Ground
3Y	9	O	Channel 3 Output
3I <sub>1</sub>	10	I	Channel 3 Input 1
3I <sub>0</sub>	11	I	Channel 3 Input 0
4Y	12	O	Channel 4 Output
4I <sub>1</sub>	13	I	Channel 4 Input 1
4I <sub>0</sub>	14	I	Channel 4 Input 0
$\overline{OE}$	15	I	Output Enable
V <sub>CC</sub>	16	P	Positive Supply

(1) I = Input, O = Output, I/O = Input or Output, G = Ground, P = Power.

## 4 Specifications

### 4.1 Absolute Maximum Ratings

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

		MIN	MAX	UNIT
V <sub>CC</sub>	Supply voltage	-0.5	6	V
I <sub>IK</sub>	Input diode current	V <sub>I</sub> < -0.5V or V <sub>I</sub> > V <sub>CC</sub> + 0.5V		±20 mA
I <sub>OK</sub>	Output diode current	V <sub>O</sub> < -0.5V or V <sub>O</sub> > V <sub>CC</sub> + 0.5V		±50 mA
I <sub>O</sub>	Output source or sink current per output pin	V <sub>O</sub> > -0.5V or V <sub>O</sub> < V <sub>CC</sub> + 0.5V		±50 mA
I <sub>CC</sub> or I <sub>GND</sub> <sup>(2)</sup>	V <sub>CC</sub> or ground current			±100 mA
T <sub>stg</sub>	Maximum storage temperature	-65	150	°C

- (1) Stresses above those listed in “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.
- (2) For up to 4 outputs per device, add ±25mA for each additional output.

### 4.2 Recommended Operating Conditions

over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
T <sub>A</sub>	Temperature Range	-55	125	°C
V <sub>CC</sub> <sup>(1)</sup>	Supply Voltage Range			
	AC Types	1.5	5.5	V
	ACT Types	4.5	5.5	V
V <sub>I</sub> , V <sub>O</sub>	DC Input or Output Voltage	0	V <sub>CC</sub>	V
dt/dv	Input Rise and Fall Slew Rate			
1.5V to 3V	AC Types		50	ns
3.6V to 5.5V	AC Types		20	ns
4.5V to 5.5V	ACT Types		10	ns

- (1) Unless otherwise specified, all voltages are referenced to ground.

### 4.3 Thermal Information

THERMAL METRIC <sup>(1)</sup>		D	UNIT
		16 PINS	
R <sub>θJA</sub>	Junction-to-ambient thermal resistance	119.9	°C/W

- (1) θ<sub>JA</sub> is measured with the component mounted on an evaluation PC board in free air.

### 4.4 Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITIONS		V <sub>CC</sub> (V)	25°C		-40°C TO 85°C		-55°C TO 125°C		UNIT
		V <sub>I</sub> (V)	I <sub>O</sub> (mA)		MIN	MAX	MIN	MAX	MIN	MAX	
AC TYPES											
High Level Input Voltage	V <sub>IH</sub>	-	-	1.5	1.2	-	1.2	-	1.2	-	V
				3	2.1	-	2.1	-	2.1	-	V
				5.5	3.85	-	3.85	-	3.85	-	V

PARAMETER	SYMBOL	TEST CONDITIONS		V <sub>CC</sub> (V)	25°C		-40°C TO 85°C		-55°C TO 125°C		UNIT
		V <sub>I</sub> (V)	I <sub>O</sub> (mA)		MIN	MAX	MIN	MAX	MIN	MAX	
Low Level Input Voltage	V <sub>IL</sub>	-	-	1.5	-	0.3	-	0.3	-	0.3	V
				3	-	0.9	-	0.9	-	0.9	V
				5.5	-	1.65	-	1.65	-	1.65	V
High Level Output Voltage	V <sub>OH</sub>	V <sub>IH</sub> or V <sub>IL</sub>	-0.05	1.5	1.4	-	1.4	-	1.4	-	V
			-0.05	3	2.9	-	2.9	-	2.9	-	V
			-0.05	4.5	4.4	-	4.4	-	4.4	-	V
			-4	3	2.58	-	2.48	-	2.4	-	V
			-24	4.5	3.94	-	3.8	-	3.7	-	V
			-75 <sup>(1), (2)</sup>	5.5	-	-	3.85	-	-	-	V
			-50 <sup>(1), (2)</sup>	5.5	-	-	-	-	3.85	-	V
Low Level Output Voltage	V <sub>OL</sub>	V <sub>IH</sub> or V <sub>IL</sub>	0.05	1.5	-	0.1	-	0.1	-	0.1	V
			0.05	3	-	0.1	-	0.1	-	0.1	V
			0.05	4.5	-	0.1	-	0.1	-	0.1	V
			12	3	-	0.36	-	0.44	-	0.5	V
			24	4.5	-	0.36	-	0.44	-	0.5	V
			75 <sup>(1), (2)</sup>	5.5	-	-	-	1.65	-	-	V
			50 <sup>(1), (2)</sup>	5.5	-	-	-	-	-	1.65	V
Input Leakage Current	I <sub>I</sub>	V <sub>CC</sub> or GND	-	5.5	-	±0.1	-	±1	-	±1	µA
Three-State Leakage Current	I <sub>OZ</sub>	V <sub>IH</sub> or V <sub>IL</sub> V <sub>O</sub> = V <sub>CC</sub> or GND	-	5.5	-	±0.5	-	±5	-	±10	µA
Quiescent Supply Current MSI	I <sub>CC</sub>	V <sub>CC</sub> or GND	0	5.5	-	8	-	80	-	160	µA
ACT TYPES											
High Level Input Voltage	V <sub>IH</sub>	-	-	4.5 to 5.5	2	-	2	-	2	-	V
Low Level Input Voltage	V <sub>IL</sub>	-	-	4.5 to 5.5	-	0.8	-	0.8	-	0.8	V
High Level Output Voltage	V <sub>OH</sub>	V <sub>IH</sub> or V <sub>IL</sub>	-0.05	4.5	4.4	-	4.4	-	4.4	-	V
			-24	4.5	3.94	-	3.8	-	3.7	-	V
			-75 <sup>(1), (2)</sup>	5.5	-	-	3.85	-	-	-	V
			-50 <sup>(1), (2)</sup>	5.5	-	-	-	-	3.85	-	V
Low Level Output Voltage	V <sub>OL</sub>	V <sub>IH</sub> or V <sub>IL</sub>	0.05	4.5	-	0.1	-	0.1	-	0.1	V
			24	4.5	-	0.36	-	0.44	-	0.5	V
			75 <sup>(1), (2)</sup>	5.5	-	-	-	1.65	-	-	V
			50 <sup>(1), (2)</sup>	5.5	-	-	-	-	-	1.65	V
Input Leakage Current	I <sub>I</sub>	V <sub>CC</sub> or GND	-	5.5	-	±0.1	-	±1	-	±1	µA
Three-State or Leakage Current	I <sub>OZ</sub>	V <sub>IH</sub> or V <sub>IL</sub> V <sub>O</sub> = V <sub>CC</sub> or GND	-	5.5	-	±0.5	-	±5	-	±10	µA
Quiescent Supply Current MSI	I <sub>CC</sub>	V <sub>CC</sub> or GND	0	5.5	-	8	-	80	-	160	µA

PARAMETER	SYMBOL	TEST CONDITIONS		V <sub>CC</sub> (V)	25°C		-40°C TO 85°C		-55°C TO 125°C		UNIT
		V <sub>I</sub> (V)	I <sub>O</sub> (mA)		MIN	MAX	MIN	MAX	MIN	MAX	
Additional Supply Current per Input Pin TTL Inputs High 1 Unit Load	ΔI <sub>CC</sub>	V <sub>CC</sub> -2.1	-	4.5 to 5.5	-	2.4	-	2.8	-	3	mA

- Test one output at a time for a 1-second maximum duration. Measurement is made by forcing current and measuring voltage to minimize power dissipation.
- Test verifies a minimum 50Ω transmission-line-drive capability at 85°C, 75Ω at 125°C.

**Table 4-1. ACT Input Load Table**

INPUT	UNIT LOAD
Data	0.83
S	1.27
$\overline{OE}$	1.27

**Note**

Unit load is ΔI<sub>CC</sub> limit specified in DC Electrical Specifications Table, e.g., 2.4mA max at 25°C.

### 4.5 Switching Specifications

Input t<sub>r</sub>, t<sub>f</sub> = 3ns, C<sub>L</sub> = 50pF (Worst Case)

PARAMETER	SYMBOL	V <sub>CC</sub> (V)	-40°C TO 85°C			-55°C TO 125°C			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
AC TYPES									
Propagation Delay, In to Y AC/ACT257	t <sub>PLH</sub> , t <sub>PHL</sub>	1.5	-	-	106	-	-	117	ns
		3.3 <sup>(1)</sup>	3.3	-	11.8	3.3	-	13	ns
		5 <sup>(2)</sup>	2.4	-	8.5	2.3	-	9.3	ns
Propagation Delay, S to Y AC/ACT257	t <sub>PLH</sub> , t <sub>PHL</sub>	1.5	-	-	153	-	-	168	ns
		3.3	4.8	-	17.1	4.7	-	18.8	ns
		5	3.5	-	12.2	3.4	-	13.4	ns
Propagation Delay, $\overline{OE}$ to Y AC/ACT257	t <sub>PLZ</sub> , t <sub>PHZ</sub> , t <sub>PZL</sub> , t <sub>PZH</sub>	1.5	-	-	167	-	-	184	ns
		3.3	5.3	-	18.7	5.2	-	20.6	ns
		5	3.8	-	13.4	3.7	-	14.7	ns
Propagation Delay, In to $\overline{Y}$ 'AC/CD74ACT258	t <sub>PLH</sub> , t <sub>PHL</sub>	1.5	-	-	91	-	-	100	ns
		3.3	2.9	-	10.2	2.8	-	11.2	ns
		5	2.1	-	7.3	2	-	8	ns
Propagation Delay, S to $\overline{Y}$ 'AC/CD74ACT258	t <sub>PLH</sub> , t <sub>PHL</sub>	1.5	-	-	153	-	-	168	ns
		3.3	4.8	-	17.1	4.7	-	18.8	ns
		5	3.5	-	12.2	3.4	-	13.4	ns
Propagation Delay, $\overline{OE}$ to $\overline{Y}$ 'AC/CD74ACT258	t <sub>PLZ</sub> , t <sub>PHZ</sub> , t <sub>PZL</sub> , t <sub>PZH</sub>	1.5	-	-	167	-	-	184	ns
		3.3	5.3	-	18.7	5.2	-	20.6	ns
		5	3.8	-	13.4	3.7	-	14.7	ns
Three-State Output Capacitance	C <sub>O</sub>	-	-	-	15	-	-	15	pF
Input Capacitance	C <sub>I</sub>	-	-	-	10	-	-	10	pF
Power Dissipation Capacitance	C <sub>PD</sub> <sup>(3)</sup>	-	-	130	-	-	130	-	pF
ACT TYPES									
Propagation Delay, In to Y AC/ACT257	t <sub>PLH</sub> , t <sub>PHL</sub>	5 <sup>(2)</sup>	2.8	-	9.7	2.7	-	10.7	ns

Input  $t_r$ ,  $t_f = 3\text{ns}$ ,  $C_L = 50\text{pF}$  (Worst Case)

PARAMETER	SYMBOL	$V_{CC}$ (V)	-40°C TO 85°C			-55°C TO 125°C			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Propagation Delay, S to Y AC/ACT257	$t_{PLH}$ , $t_{PHL}$	5	4	-	14	3.9	-	15.4	ns
Propagation Delay, $\overline{OE}$ to Y AC/ACT257	$t_{PLZ}$ , $t_{PHZ}$ , $t_{PZL}$ , $t_{PZH}$	5	4.1	-	14.6	4	-	16.1	ns
Propagation Delay, In to $\overline{Y}$ AC/CD74ACT258	$t_{PLH}$ , $t_{PHL}$	5	2.4	-	8.5	2.3	-	9.3	ns
Propagation Delay, S to $\overline{Y}$ AC/CD74ACT258	$t_{PLH}$ , $t_{PHL}$	5	4	-	14	3.9	-	15.4	ns
Propagation Delay, $\overline{OE}$ to $\overline{Y}$ AC/CD74ACT258	$t_{PLZ}$ , $t_{PHZ}$ , $t_{PZL}$ , $t_{PZH}$	5	4.1	-	14.6	4	-	16.1	ns
Three-State Output Capacitance	$C_O$	-	-	-	15	-	-	15	pF
Input Capacitance	$C_I$	-	-	-	10	-	-	10	pF
Power Dissipation Capacitance	$C_{PD}$ <sup>(3)</sup>	-	-	130	-	-	130	-	pF

- (1) 3.3V Min is at 3.6V, Max is at 3V.  
 (2) 5V Min is at 5.5V, Max is at 4.5V.  
 (3)  $C_{PD}$  is used to determine the dynamic power consumption per multiplexer.

#### Note

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

$$\text{ACT: } P_D = C_{PD} V_{CC}^2 f_i + \sum (C_L V_{CC}^2 f_o) + V_{CC} \Delta I_{CC} \text{ where } f_i = \text{input frequency, } f_o = \text{output frequency, } C_L = \text{output load capacitance, } V_{CC} = \text{supply voltage.}$$

## 5 Parameter Measurement Information

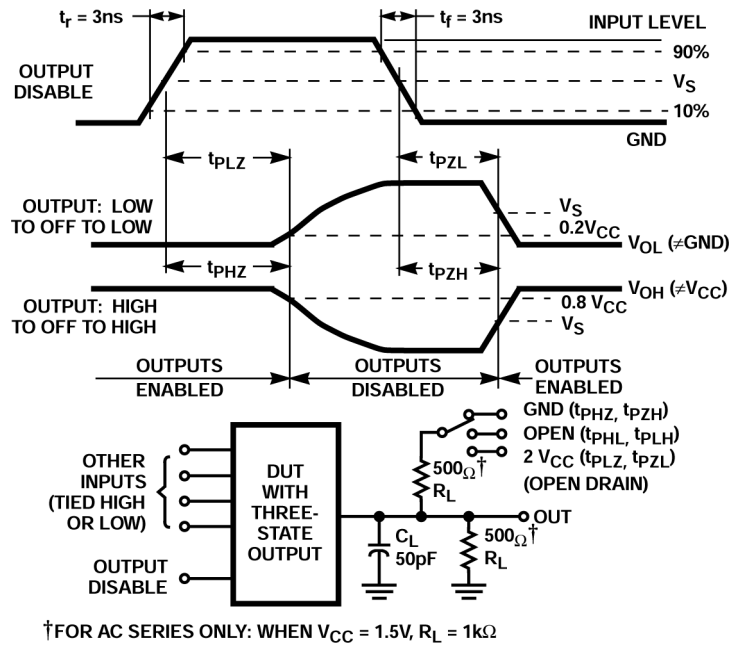


Figure 5-1. Three-State Propagation Delay Times and Test Circuit

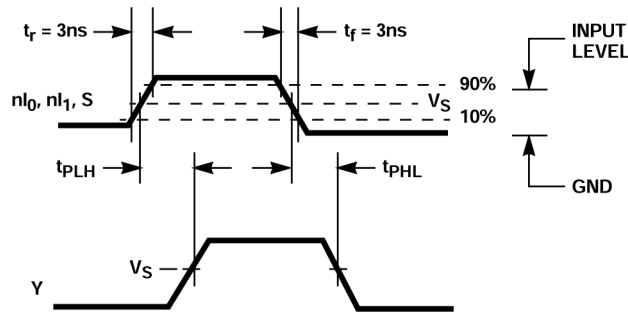


Figure 5-2. inputs or select to output propagation delays (ac/act257)

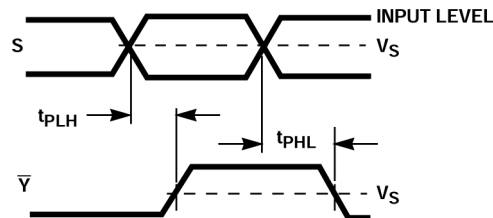


Figure 5-3. Select to Output Propagation Delays (CD74ACT258)

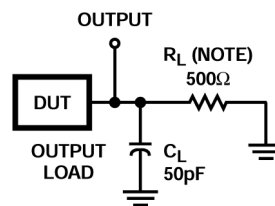


Figure 5-4.



For AC Series Only: When  $V_{CC} = 1.5V$ ,  $R_L = 1k\Omega$ .

TEST	S1
$t_{PLH}/t_{PHL}$	Open
$t_{PLZ}/t_{PZL}$	$2 \times V_{CC}$
$t_{PHZ}/t_{PZH}$	GND

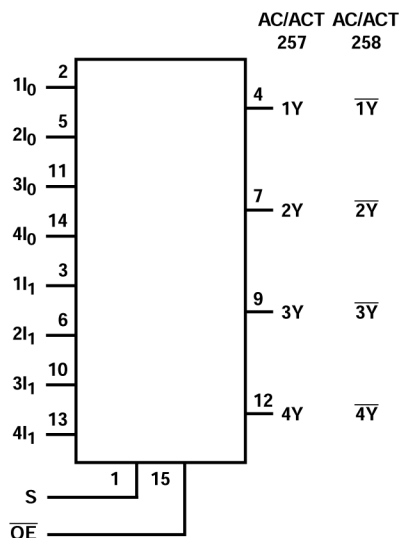
## 6 Detailed Description

### 6.1 Overview

Each of these devices selects four bits of data from two sources under the control of a common Select input (S). The Output Enable ( $\overline{OE}$ ) is active LOW. When  $\overline{OE}$  is HIGH, all of the outputs (Y or  $\overline{Y}$ ) are in the high-impedance state regardless of all other input conditions.

Moving data from two groups of registers to four common output buses is a common use of the 'AC257, 'ACT257, and CD74ACT258. The state of the Select input determines the particular register from which the data comes. The 'AC257, 'ACT257 and CD74ACT258 can also be used as function generators.

### 6.2 Functional Block Diagram



### 6.3 Device Functional Modes

Table 6-1. Truth Table

OUTPUT ENABLE	SELECT INPUT	DATA INPUTS		257 OUTPUTS	258 OUTPUTS
$\overline{OE}$	S	$I_0$	$I_1$	Y	$\overline{Y}$
H	X	X	X	Z	Z
L	L	L	X	L	H
L	L	H	X	H	L
L	H	X	L	L	H
L	H	X	H	H	L

## 7 Application and Implementation

---

### Note

Information in the following applications sections is not part of the TI component specification, and TI does not warrant its accuracy or completeness. TI's customers are responsible for determining suitability of components for their purposes, as well as validating and testing their design implementation to confirm system functionality.

---

### 7.1 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 $\mu$ F capacitor is recommended for this device. It is acceptable to parallel multiple bypass capacitors to reject different frequencies of noise. The 0.1 $\mu$ F and 1 $\mu$ F capacitors are commonly used in parallel. The bypass capacitor should be installed as close to the power terminal as possible for best results.

### 7.2 Layout

#### 7.2.1 Layout Guidelines

When using multiple-input and multiple-channel logic devices, inputs must never 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.

## 8 Device and Documentation Support

### 8.1 Documentation Support (Analog)

#### 8.1.1 Related Documentation

PARTS	PRODUCT FOLDER	SAMPLE & BUY	TECHNICAL DOCUMENTS	TOOLS & SOFTWARE	SUPPORT & COMMUNITY
CD54AC257	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>
CD54ACT257	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>
CD74AC257	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>
CD74ACT257	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>
CD74ACT258	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>	<a href="#">Click here</a>

### 8.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on [ti.com](http://ti.com). Click on *Notifications* 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.

### 8.3 Support Resources

[TI E2E™ support forums](#) are an engineer's go-to source for fast, verified answers and design help — straight from the experts. Search existing answers or ask your own question to get the quick design help you need.

Linked content is provided "AS IS" by the respective contributors. They do not constitute TI specifications and do not necessarily reflect TI's views; see TI's [Terms of Use](#).

### 8.4 Trademarks

TI E2E™ is a trademark of Texas Instruments.  
 All trademarks are the property of their respective owners.

### 8.5 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.

### 8.6 Glossary

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

## 9 Revision History

Changes from Revision A (May 2000) to Revision B (August 2024)	Page
• Added <i>Package Information</i> table, <i>Pin Functions</i> table, <i>ESD Ratings</i> table, <i>Thermal Information</i> table, <i>Device Functional Modes</i> , Application and Implementation section, <i>Device and Documentation Support</i> section, and <i>Mechanical, Packaging, and Orderable Information</i> section .....	1

## 10 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 Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
CD54AC257F3A	ACTIVE	CDIP	J	16	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	CD54AC257F3A	<a href="#">Samples</a>
CD54ACT257F3A	ACTIVE	CDIP	J	16	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	CD54ACT257F3A	<a href="#">Samples</a>
CD74AC257E	ACTIVE	PDIP	N	16	25	RoHS & Green	NIPDAU	N / A for Pkg Type	-55 to 125	CD74AC257E	<a href="#">Samples</a>
CD74AC257M	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI	-55 to 125	AC257M	
CD74AC257M96	ACTIVE	SOIC	D	16	2500	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-55 to 125	AC257M	<a href="#">Samples</a>
CD74ACT257E	ACTIVE	PDIP	N	16	25	RoHS & Green	NIPDAU	N / A for Pkg Type	-55 to 125	CD74ACT257E	<a href="#">Samples</a>
CD74ACT257EE4	ACTIVE	PDIP	N	16	25	RoHS & Green	NIPDAU	N / A for Pkg Type	-55 to 125	CD74ACT257E	<a href="#">Samples</a>
CD74ACT257M	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI	-55 to 125	ACT257M	
CD74ACT257M96	ACTIVE	SOIC	D	16	2500	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT257M	<a href="#">Samples</a>
CD74ACT258M	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI	-55 to 125	ACT258M	
CD74ACT258M96	ACTIVE	SOIC	D	16	2500	RoHS & Green	NIPDAU	Level-2-260C-1 YEAR	-55 to 125	ACT258M	<a href="#">Samples</a>

(1) The marketing status values are defined as follows:

**ACTIVE:** Product device recommended for new designs.

**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.

**OBSOLETE:** TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

**RoHS Exempt:** TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

**Green:** TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead finish/Ball material - Orderable Devices 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.

**Important Information and Disclaimer:**The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF CD54AC257, CD54ACT257, CD74AC257, CD74ACT257 :**

- Catalog : [CD74AC257](#), [CD74ACT257](#)
- Military : [CD54AC257](#), [CD54ACT257](#)

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
CD74AC257M96	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
CD74ACT257M96	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
CD74ACT257M96	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
CD74ACT258M96	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)
CD74AC257M96	SOIC	D	16	2500	353.0	353.0	32.0
CD74ACT257M96	SOIC	D	16	2500	340.5	336.1	32.0
CD74ACT257M96	SOIC	D	16	2500	356.0	356.0	35.0
CD74ACT258M96	SOIC	D	16	2500	340.5	336.1	32.0



**TUBE**


\*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
CD74AC257E	N	PDIP	16	25	506	13.97	11230	4.32
CD74AC257E	N	PDIP	16	25	506	13.97	11230	4.32
CD74ACT257E	N	PDIP	16	25	506	13.97	11230	4.32
CD74ACT257E	N	PDIP	16	25	506	13.97	11230	4.32
CD74ACT257EE4	N	PDIP	16	25	506	13.97	11230	4.32
CD74ACT257EE4	N	PDIP	16	25	506	13.97	11230	4.32

D (R-PDSO-G16)

PLASTIC SMALL OUTLINE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
  - D. Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
  - E. Reference JEDEC MS-012 variation AC.

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.

N (R-PDIP-T\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



4040049/E 12/2002

- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - (C) Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - (D) The 20 pin end lead shoulder width is a vendor option, either half or full width.

## IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to [TI's Terms of Sale](#) or other applicable terms available either on [ti.com](https://www.ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
Copyright © 2024, Texas Instruments Incorporated