

4-to-16 Line Decoder/Demultiplexer

CJ74HC/HCT154 Logic

1 Introduction

The CJ74HC/HCT154 is a 4-to-16 line decoder/demultiplexer.

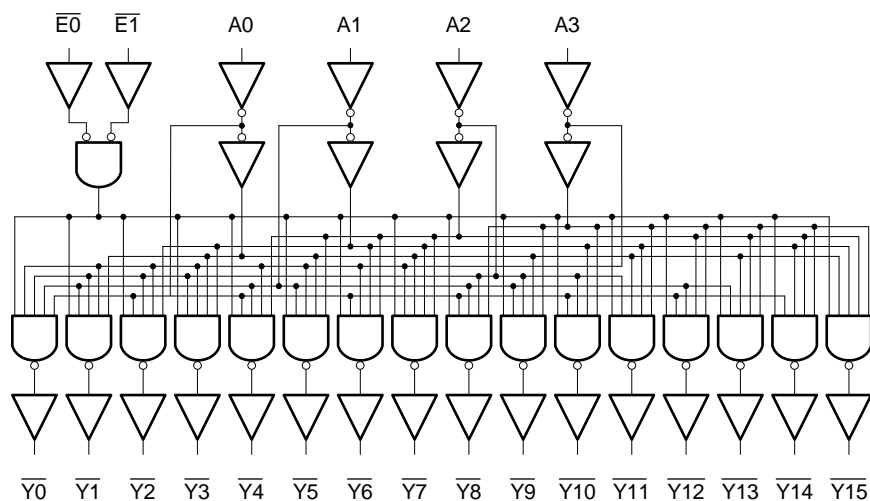
2 Available Packages

| PART NUMBER | PACKAGE |
|-------------|----------------|
| CJ74HC154 | SOP24 |
| | SSOP24 |
| | TSSOP24 |
| | QFN5.5x3.5-24L |
| CJ74HCT154 | SOP24 |
| | SSOP24 |
| | TSSOP24 |
| | QFN5.5x3.5-24L |

Note: For all available packages, please refer to the part Orderable Information.

3 Features

- Supply voltage range:
 - CJ74HC154: 2V to 6V
 - CJ74HCT154: 4.5 V to 5.5V
- Input levels:
 - CJ74HC154: CMOS level
 - CJ74HCT154: TTL level
- Temperature range: -40°C to +125°C



Functional diagram

4 Orderable Information

| DEVICE | PACKAGE | OP TEMP | ECO PLAN | MSL | PACKING OPTION | SORT |
|---------------|----------------|-----------|--------------|------------------|------------------------------------|--------|
| CJ74HC154AHN | SOP24 | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 1000 Units / Reel | Active |
| CJ74HCT154AHN | SOP24 | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 1000 Units / Reel | Active |
| CJ74HC154SHN | SSOP24 | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 2500 Units / Reel | Active |
| CJ74HCT154SHN | SSOP24 | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 2500 Units / Reel | Active |
| CJ74HC154BHN | TSSOP24 | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 4000 Units / Reel | Active |
| CJ74HCT154BHN | TSSOP24 | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 4000 Units / Reel | Active |
| CJ74HC154QFN | QFN5.5x3.5-24L | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 3000 Units / Reel | Active |
| CJ74HCT154QFN | QFN5.5x3.5-24L | -40~125°C | RoHS & Green | Level 3 168HR | Tape and Reel 3000 Units / Reel | Active |

Note:

ECO PLAN: For the RoHS and Green certification standards of this product, please refer to the official report provided by JSCJ.

MSL: Moisture Sensitivity Level. Determined according to JEDEC industry standard classification.

SORT: Specifically defined as follows:

Active: Recommended for new products;

Customized: Products manufactured to meet the specific needs of customers;

Preview: The device has been released and has not been fully mass produced. The sample may or may not be available;

NoRD: It is not recommended to use the device for new design. The device is only produced for the needs of existing customers;

Obsolete: The device has been discontinued.

5 Pin Configuration and Marking Information

5.1 Pin Configuration

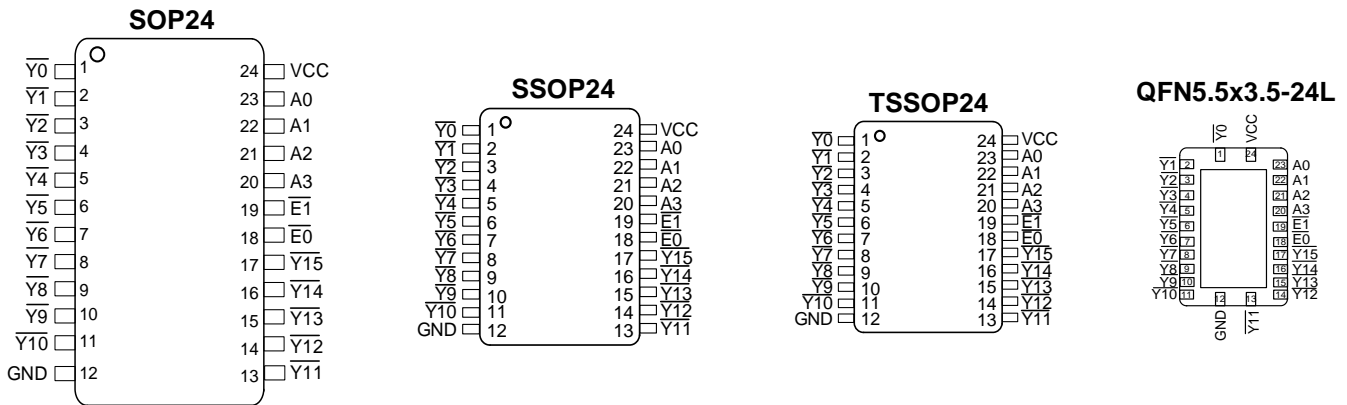


Figure 5-1 Pin configuration

5.2 Pin Function

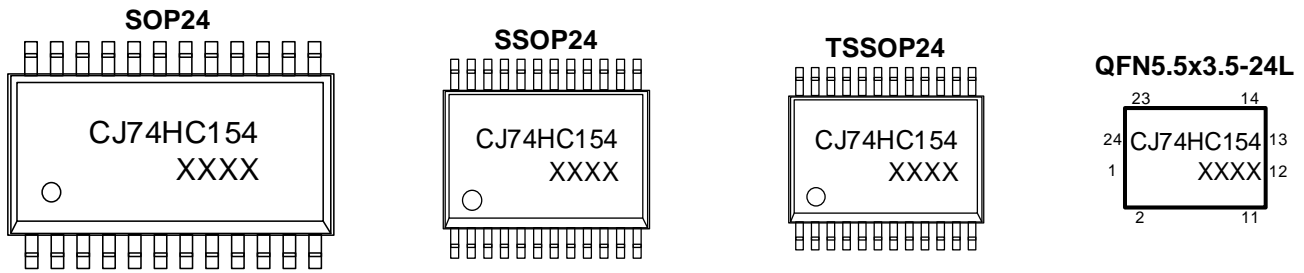
| PIN | | I/O | DESCRIPTION |
|-----|------------------|-----|---------------------------|
| No. | NAME | | |
| 1 | $\overline{Y0}$ | O | Data output (active LOW) |
| 2 | $\overline{Y1}$ | O | Data output (active LOW) |
| 3 | $\overline{Y2}$ | O | Data output (active LOW) |
| 4 | $\overline{Y3}$ | O | Data output (active LOW) |
| 5 | $\overline{Y4}$ | O | Data output (active LOW) |
| 6 | $\overline{Y5}$ | O | Data output (active LOW) |
| 7 | $\overline{Y6}$ | O | Data output (active LOW) |
| 8 | $\overline{Y7}$ | O | Data output (active LOW) |
| 9 | $\overline{Y8}$ | O | Data output (active LOW) |
| 10 | $\overline{Y9}$ | O | Data output (active LOW) |
| 11 | $\overline{Y10}$ | O | Data output (active LOW) |
| 12 | GND | G | Ground (0V) |
| 13 | $\overline{Y11}$ | O | Data output (active LOW) |
| 14 | $\overline{Y12}$ | O | Data output (active LOW) |
| 15 | $\overline{Y13}$ | O | Data output (active LOW) |
| 16 | $\overline{Y14}$ | O | Data output (active LOW) |
| 17 | $\overline{Y15}$ | O | Data output (active LOW) |
| 18 | $\overline{E0}$ | I | Enable input (active LOW) |
| 19 | $\overline{E1}$ | I | Enable input (active LOW) |
| 20 | A3 | I | Address input |
| 21 | A2 | I | Address input |
| 22 | A1 | I | Address input |
| 23 | A0 | I | Address input |

| PIN | | I/O | DESCRIPTION |
|-----|------|-----|----------------|
| No. | NAME | | |
| 24 | VCC | P | Supply voltage |

(1) I-Input, O-Output, P-Power, G-Ground

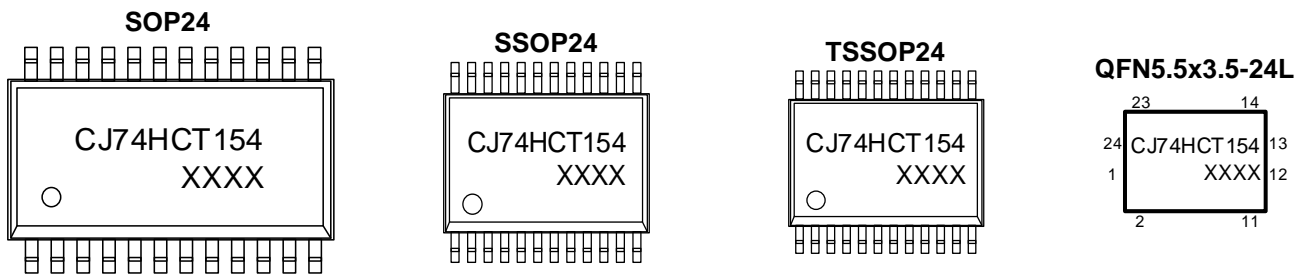
5.3 Marking Information

5.3.1 CJ74HC154



XXXX: Code, indicates weekly record information.

5.3.2 CJ74HCT154



XXXX: Code, indicates weekly record information.

6 Specifications

6.1 Absolute Maximum Ratings

$T_{amb}=25^{\circ}\text{C}$, unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------|--|------|----------|--------------------|
| V_{CC} | Supply voltage | - | -0.5 | +7 | V |
| I_{CC} | Supply current | - | - | 50 | mA |
| I_{GND} | Ground current | - | -50 | - | mA |
| I_{IK} | Input clamping current | $V_I < -0.5\text{V}$ or $V_I > V_{CC}+0.5\text{V}$ | - | ± 20 | mA |
| I_{OK} | Output clamping current | $V_O < -0.5\text{V}$ or $V_O > V_{CC}+0.5\text{V}$ | - | ± 20 | mA |
| I_O | Output current | $-0.5\text{V} < V_O < V_{CC}+0.5\text{V}$ | - | ± 25 | mA |
| T_{stg} | Storage temperature | - | -65 | +150 | $^{\circ}\text{C}$ |
| T_L | Soldering temperature | 10s | - | 260 | $^{\circ}\text{C}$ |

Note: Absolute maximum ratings indicate sustained limits beyond which damage to the device may occur. All voltage parameters are absolute voltages referenced to GND. The thermal resistance and power dissipation ratings are measured under board mounted and still air conditions.

6.2 Recommended Operating Conditions

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------------|---------------------|------------|------|------|----------|--------------------|
| CJ74HC154 | | | | | | |
| V_{CC} | Supply voltage | - | 2.0 | 5.0 | 6.0 | V |
| V_I | Input voltage | - | 0 | - | V_{CC} | V |
| V_O | Output voltage | - | 0 | - | V_{CC} | V |
| T_{amb} | Ambient temperature | - | -40 | - | +125 | $^{\circ}\text{C}$ |
| CJ74HCT154 | | | | | | |
| V_{CC} | Supply voltage | - | 4.5 | 5.0 | 5.5 | V |
| V_I | Input voltage | - | 0 | - | V_{CC} | V |
| V_O | Output voltage | - | 0 | - | V_{CC} | V |
| T_{amb} | Ambient temperature | - | -40 | - | +125 | $^{\circ}\text{C}$ |

6.3 ESD Ratings

| SYMBOL | ESD RATINGS | | VALUE | UNIT |
|---------------|-------------------------|---------------------------------------|------------|------|
| $V_{ESD-HBM}$ | Electrostatic discharge | Human body model (HBM) ⁽¹⁾ | ± 1000 | V |

(1) JEDEC document JEP155 states that 500-V H1BM allows safe manufacturing with a standard ESD control process.

6.4 Electrical Characteristics
6.4.1 DC Characteristics 1
 $T_{amb} = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------------|---------------------------|--|------|------|----------|---------------|
| CJ74HC154 | | | | | | |
| V_{IH} | HIGH-level input voltage | $V_{CC}=2.0\text{V}$ | 1.5 | - | - | V |
| | | $V_{CC}=4.5\text{V}$ | 3.15 | - | - | V |
| | | $V_{CC}=6.0\text{V}$ | 4.2 | - | - | V |
| V_{IL} | LOW-level input voltage | $V_{CC}=2.0\text{V}$ | - | - | 0.5 | V |
| | | $V_{CC}=4.5\text{V}$ | - | - | 1.35 | V |
| | | $V_{CC}=6.0\text{V}$ | - | - | 1.8 | V |
| V_{OH} | HIGH-level output voltage | $V_{CC}=2.0\text{V}; I_o=-20\mu\text{A}$ | 1.9 | 2.0 | - | V |
| | | $V_{CC}=4.5\text{V}; I_o=-20\mu\text{A}$ | 4.4 | 4.5 | - | V |
| | | $V_{CC}=6.0\text{V}; I_o=-20\mu\text{A}$ | 5.9 | 6.0 | - | V |
| | | $V_{CC}=4.5\text{V}; I_o=-4.0\text{mA}$ | 3.84 | 4.32 | - | V |
| | | $V_{CC}=6.0\text{V}; I_o=-5.2\text{mA}$ | 5.34 | 5.81 | - | V |
| V_{OL} | LOW-level output voltage | $V_{CC}=2.0\text{V}; I_o=20\mu\text{A}$ | - | 0 | 0.1 | V |
| | | $V_{CC}=4.5\text{V}; I_o=20\mu\text{A}$ | - | 0 | 0.1 | V |
| | | $V_{CC}=6.0\text{V}; I_o=20\mu\text{A}$ | - | 0 | 0.1 | V |
| | | $V_{CC}=4.5\text{V}; I_o=4.0\text{mA}$ | - | 0.15 | 0.33 | V |
| | | $V_{CC}=6.0\text{V}; I_o=5.2\text{mA}$ | - | 0.16 | 0.33 | V |
| I_I | Input leakage current | $V_{CC}=6.0\text{V}; V_I=V_{CC}$ or GND | - | - | ± 10 | μA |
| I_{CC} | Supply current | $V_{CC}=6.0\text{V}; V_I=V_{CC}$ or GND; $I_o=0\text{A}$ | - | - | 80 | μA |
| CJ74HCT154 | | | | | | |
| V_{IH} | HIGH-level input voltage | $V_{CC}=4.5\text{V}$ to 5.5V | 2.0 | - | - | V |
| V_{IL} | LOW-level input voltage | $V_{CC}=4.5\text{V}$ to 5.5V | - | - | 0.8 | V |
| V_{OH} | HIGH-level output voltage | $V_{CC}=4.5\text{V}; I_o=-20\mu\text{A}$ | 4.4 | 4.5 | - | V |
| | | $V_{CC}=4.5\text{V}; I_o=-4.0\text{mA}$ | 3.84 | 4.32 | - | V |
| V_{OL} | LOW-level output voltage | $V_{CC}=4.5\text{V}; I_o=20\mu\text{A}$ | - | 0 | 0.1 | V |
| | | $V_{CC}=4.5\text{V}; I_o=4.0\text{mA}$ | - | 0.15 | 0.33 | V |
| I_I | Input leakage current | $V_{CC}=5.5\text{V}; V_I=V_{CC}$ or GND | - | - | ± 10 | μA |
| I_{CC} | Supply current | $V_{CC}=6.0\text{V}; V_I=V_{CC}$ or GND; $I_o=0\text{A}$ | - | - | 80 | μA |
| ΔI_{CC} | Additional supply current | $V_{CC}=4.5\text{V}$ to 5.5V ; One input at $V_I=V_{CC}-2.1\text{V}$; Other inputs at V_{CC} or GND; $I_o=0\text{A}$ | - | - | 135 | μA |

6.4.2 DC Characteristics 2
 $T_{amb} = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$, voltages are referenced to V_{SS} (ground=0V), unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------------|---------------------------|--|------|------|----------|---------|
| CJ74HC154 | | | | | | |
| V_{IH} | HIGH-level input voltage | $V_{CC}=2.0V$ | 1.5 | - | - | V |
| | | $V_{CC}=4.5V$ | 3.15 | - | - | V |
| | | $V_{CC}=6.0V$ | 4.2 | - | - | V |
| V_{IL} | LOW-level input voltage | $V_{CC}=2.0V$ | - | - | 0.5 | V |
| | | $V_{CC}=4.5V$ | - | - | 1.35 | V |
| | | $V_{CC}=6.0V$ | - | - | 1.8 | V |
| V_{OH} | HIGH-level output voltage | $V_{CC}=2.0V; I_o=-20\mu A$ | 1.9 | - | - | V |
| | | $V_{CC}=4.5V; I_o=-20\mu A$ | 4.4 | - | - | V |
| | | $V_{CC}=6.0V; I_o=-20\mu A$ | 5.9 | - | - | V |
| | | $V_{CC}=4.5V; I_o=-4.0mA$ | 3.7 | - | - | V |
| | | $V_{CC}=6.0V; I_o=-5.2mA$ | 5.2 | - | - | V |
| V_{OL} | LOW-level output voltage | $V_{CC}=2.0V; I_o=20\mu A$ | - | - | 0.1 | V |
| | | $V_{CC}=4.5V; I_o=20\mu A$ | - | - | 0.1 | V |
| | | $V_{CC}=6.0V; I_o=20\mu A$ | - | - | 0.1 | V |
| | | $V_{CC}=4.5V; I_o=4.0mA$ | - | - | 0.4 | V |
| | | $V_{CC}=6.0V; I_o=5.2mA$ | - | - | 0.4 | V |
| I_I | Input leakage current | $V_{CC}=6.0V; V_I=V_{CC}$ or GND | - | - | ± 20 | μA |
| I_{CC} | Supply current | $V_{CC}=6.0V; V_I=V_{CC}$ or GND; $I_o=0A$ | - | - | 160 | μA |
| CJ74HCT154 | | | | | | |
| V_{IH} | HIGH-level input voltage | $V_{CC}=4.5V$ to $5.5V$ | 2.0 | - | - | V |
| V_{IL} | LOW-level input voltage | $V_{CC}=4.5V$ to $5.5V$ | - | - | 0.8 | V |
| V_{OH} | HIGH-level output voltage | $V_{CC}=4.5V; I_o=-20\mu A$ | 4.4 | - | - | V |
| | | $V_{CC}=4.5V; I_o=-4.0mA$ | 3.7 | - | - | V |
| V_{OL} | LOW-level output voltage | $V_{CC}=4.5V; I_o=20\mu A$ | - | - | 0.1 | V |
| | | $V_{CC}=4.5V; I_o=4.0mA$ | - | - | 0.4 | V |
| I_I | Input leakage current | $V_{CC}=5.5V; V_I=V_{CC}$ or GND | - | - | ± 20 | μA |
| I_{CC} | Supply current | $V_{CC}=6.0V; V_I=V_{CC}$ or GND; $I_o=0A$ | - | - | 160 | μA |
| ΔI_{CC} | Additional supply current | $V_{CC}=4.5V$ to $5.5V$; One input at $V_I=V_{CC}-2.1V$; Other inputs at V_{CC} or GND; $I_o=0A$ | - | - | 147 | μA |

6.4.3 AC Characteristics 1

T_{amb}=-40°C to +85°C, unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT | |
|-------------------------------------|--|---|---|------|------|------|----|
| CJ74HC154 | | | | | | | |
| t _{PLH} , t _{PHL} | An to \bar{Y}_n propagation delay | See Figure 7-3 | V _{CC} =2.0V; C _L =50pF | - | 36 | 190 | ns |
| | | | V _{CC} =4.5V; C _L =50pF | - | 13 | 38 | ns |
| | | | V _{CC} =5.0V; C _L =15pF | - | 11 | - | ns |
| | | | V _{CC} =6.0V; C _L =50pF | - | 10 | 33 | ns |
| | \bar{E}_n to \bar{Y}_n propagation delay | | V _{CC} =2.0V; C _L =50pF | - | 39 | 190 | ns |
| | | | V _{CC} =4.5V; C _L =50pF | - | 14 | 38 | ns |
| | | | V _{CC} =5.0V; C _L =15pF | - | 11 | - | ns |
| | | | V _{CC} =6.0V; C _L =50pF | - | 11 | 33 | ns |
| t _{THL} , t _{TLH} | Transition time | V _{CC} =2.0V; C _L =50pF | - | 19 | 95 | ns | |
| | | V _{CC} =4.5V; C _L =50pF | - | 7 | 19 | ns | |
| | | V _{CC} =6.0V; C _L =50pF | - | 6 | 16 | ns | |
| CJ74HCT154 | | | | | | | |
| t _{PLH} , t _{PHL} | An to \bar{Y}_n propagation delay | See Figure 7-3 | V _{CC} =4.5V; C _L =50pF | - | 16 | 44 | ns |
| | | | V _{CC} =5.0V; C _L =15pF | - | 13 | - | ns |
| | \bar{E}_n to \bar{Y}_n propagation delay | | V _{CC} =4.5V; C _L =50pF | - | 15 | 40 | ns |
| | | | V _{CC} =5.0V; C _L =15pF | - | 13 | - | ns |
| t _{THL} , t _{TLH} | Transition time | V _{CC} =4.5V; C _L =50pF | - | 7 | 19 | ns | |

6.4.4 AC Characteristics 2

T_{amb}=-40°C to +125°C, unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT | |
|-------------------------------------|--|---|---|------|------|------|----|
| CJ74HC154 | | | | | | | |
| t _{PLH} , t _{PHL} | An to \bar{Y}_n propagation delay | See Figure 7-3 | V _{CC} =2.0V; C _L =50pF | - | - | 225 | ns |
| | | | V _{CC} =4.5V; C _L =50pF | - | - | 45 | ns |
| | | | V _{CC} =6.0V; C _L =50pF | - | - | 38 | ns |
| | \bar{E}_n to \bar{Y}_n propagation delay | | V _{CC} =2.0V; C _L =50pF | - | - | 225 | ns |
| | | | V _{CC} =4.5V; C _L =50pF | - | - | 45 | ns |
| | | | V _{CC} =6.0V; C _L =50pF | - | - | 38 | ns |
| t _{THL} , t _{TLH} | Transition time | V _{CC} =2.0V; C _L =50pF | - | - | 110 | ns | |
| | | V _{CC} =4.5V; C _L =50pF | - | - | 22 | ns | |
| | | V _{CC} =6.0V; C _L =50pF | - | - | 19 | ns | |
| CJ74HCT154 | | | | | | | |
| t _{PLH} , t _{PHL} | An to \bar{Y}_n propagation delay | See Figure 7-3 | V _{CC} =4.5V; C _L =50pF | - | - | 53 | ns |
| | \bar{E}_n to \bar{Y}_n propagation delay | | V _{CC} =4.5V; C _L =50pF | - | - | 48 | ns |
| t _{THL} , t _{TLH} | Transition time | | V _{CC} =4.5V; C _L =50pF | - | - | 22 | ns |

7 Detailed Description

7.1 Overview

The CJ74HC/HCT154 is a 4-to-16 line decoder/ demultiplexer.

7.2 Functional Block Diagram

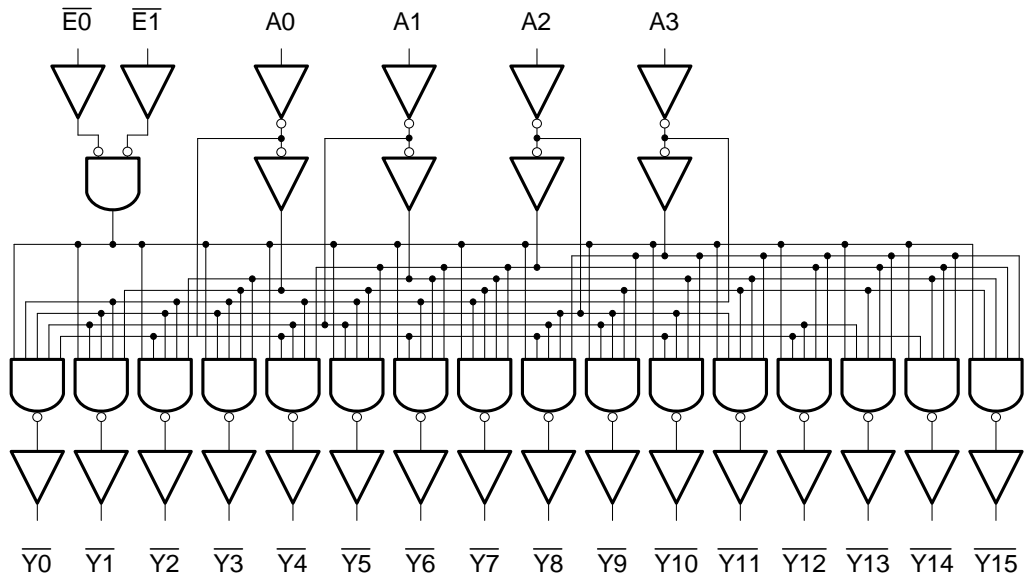


Figure 7-1 Functional diagram

7.3 Function Table

| INPUTS | | | | | | OUTPUTS | | | | | | | | | | | | | | | | | | |
|------------|------------|-----|-----|-----|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|---|---|---|
| $\bar{E}0$ | $\bar{E}1$ | A 0 | A 1 | A 2 | A 3 | $\bar{Y}0$ | $\bar{Y}1$ | $\bar{Y}2$ | $\bar{Y}3$ | $\bar{Y}4$ | $\bar{Y}5$ | $\bar{Y}6$ | $\bar{Y}7$ | $\bar{Y}8$ | $\bar{Y}9$ | $\bar{Y}10$ | $\bar{Y}11$ | $\bar{Y}12$ | $\bar{Y}13$ | $\bar{Y}14$ | $\bar{Y}15$ | | | |
| H | H | X | X | X | X | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | | |
| H | L | X | X | X | X | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | | |
| L | H | X | X | X | X | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | | |
| L | L | L | L | L | L | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | | |
| | | H | L | L | L | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| | | L | H | L | L | H | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| | | H | H | L | L | H | H | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| | | L | L | H | L | H | H | H | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H | |
| | | H | L | H | L | H | H | H | H | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H |
| | | L | H | H | L | H | H | H | H | H | H | L | H | H | H | H | H | H | H | H | H | H | H | H |
| | | H | H | H | L | H | H | H | H | H | H | H | L | H | H | H | H | H | H | H | H | H | H | H |
| | | L | L | L | H | H | H | H | H | H | H | H | H | H | L | H | H | H | H | H | H | H | H | H |
| | | H | L | L | H | H | H | H | H | H | H | H | H | H | H | L | H | H | H | H | H | H | H | H |
| | | L | H | L | H | H | H | H | H | H | H | H | H | H | H | H | L | H | H | H | H | H | H | H |
| | | H | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H | L | H | H | H | H | H | H |
| | | L | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | L | H | H | H | H | H |
| | | H | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | L | H | H | H |
| | | L | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | L | H | H |
| | | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | L |

Note: H=HIGH voltage level; L=LOW voltage level; X=don't care.

7.4 Testing Circuit

7.4.1 AC Testing Circuit

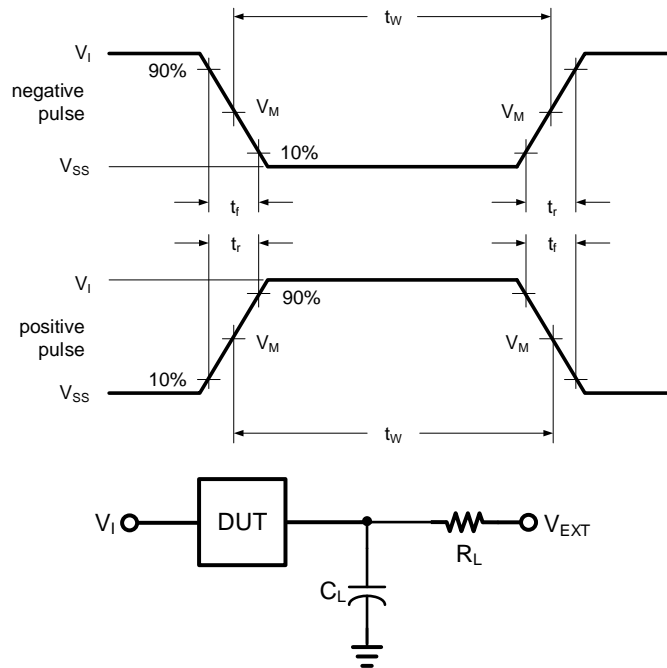


Figure 7-2 Test circuit for measuring switching times

Definitions for test circuit:

C_L includes probe and jig capacitance.

7.4.2 AC Testing Waveforms

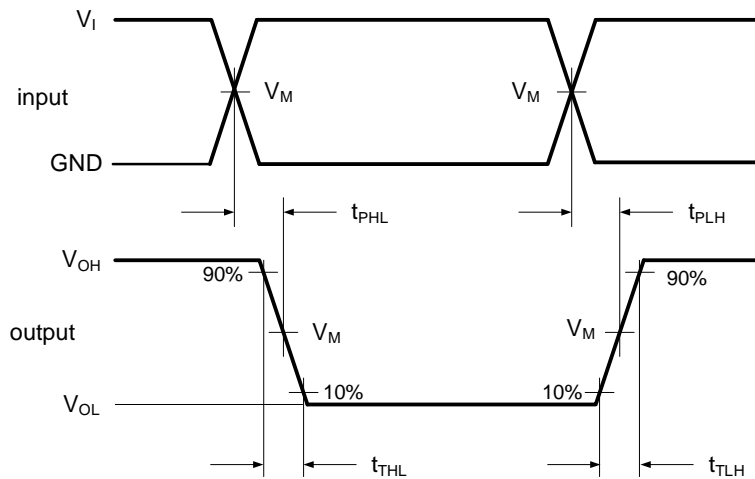


Figure 7-3 Propagation delay, output transition time

7.4.3 Measurement Points

| TYPE | INPUT | OUTPUT |
|------------|---------------------|---------------------|
| | V_M | V_M |
| CJ74HC154 | $0.5 \times V_{CC}$ | $0.5 \times V_{CC}$ |
| CJ74HCT154 | 1.3V | 1.3V |

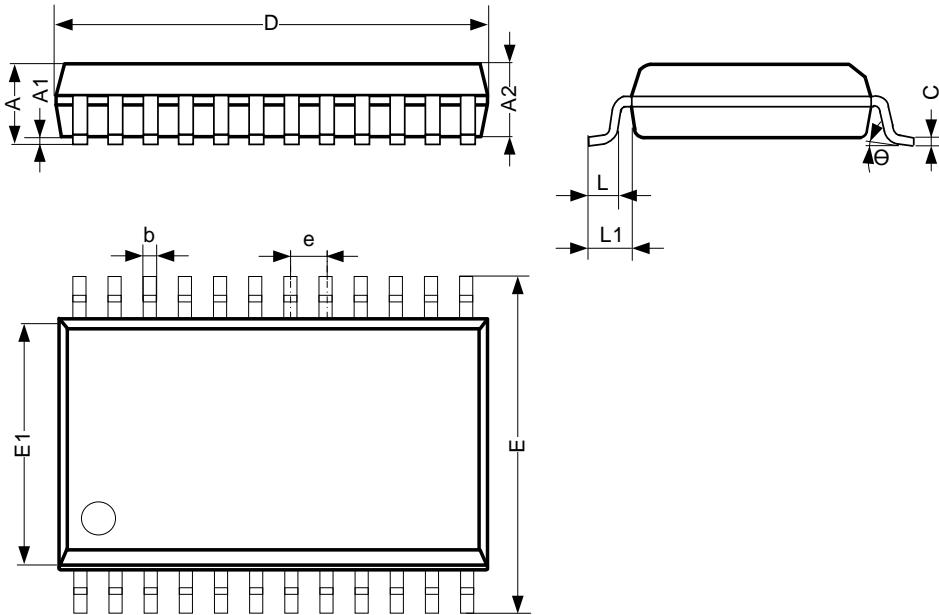
7.4.4 Test Data

| TYPE | INPUT | | LOAD | | V_{EXT} | | |
|------------|----------|-------------|------------|-------------|-------------------|-------------------|-------------------|
| | V_I | $t_r = t_f$ | C_L | R_L | t_{PLH}/t_{PHL} | t_{PLZ}/t_{PZL} | t_{PHZ}/t_{PZH} |
| CJ74HC154 | V_{CC} | 3.0ns | 15pF, 50pF | 1k Ω | Open | V_{CC} | GND |
| CJ74HCT154 | 3.0V | 3.0ns | 15pF, 50pF | 1k Ω | Open | V_{CC} | GND |

8 Mechanical Information

8.1 SOP24 Mechanical Information

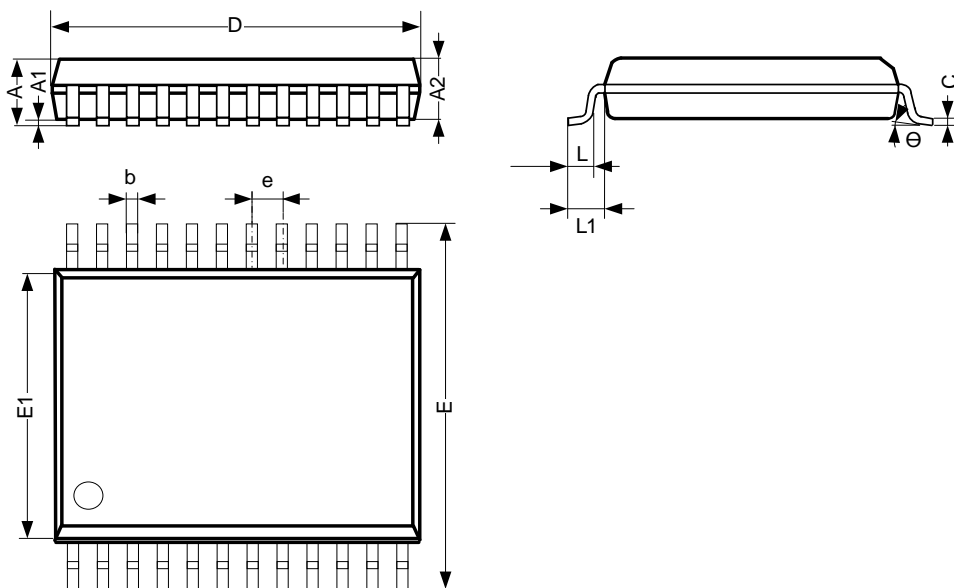
8.1.1 SOP24 Outline Dimensions



| SYMBOL | Dimensions In Millimeters | | |
|----------|---------------------------|------|-------|
| | Min. | Typ. | Max. |
| A | 2.35 | - | 2.65 |
| A1 | 0.10 | - | 0.30 |
| A2 | 2.13 | - | 2.44 |
| b | 0.39 | - | 0.47 |
| c | 0.25 | - | 0.30 |
| D | 15.19 | - | 15.55 |
| E | 10.10 | - | 10.57 |
| E1 | 7.40 | - | 7.62 |
| e | 1.27 BSC | | |
| L | 0.41 | - | 1.00 |
| L1 | 1.30 | - | 1.50 |
| Θ | 0° | - | 8° |
| Unit: mm | | | |

8.2 SSOP24 Mechanical Information

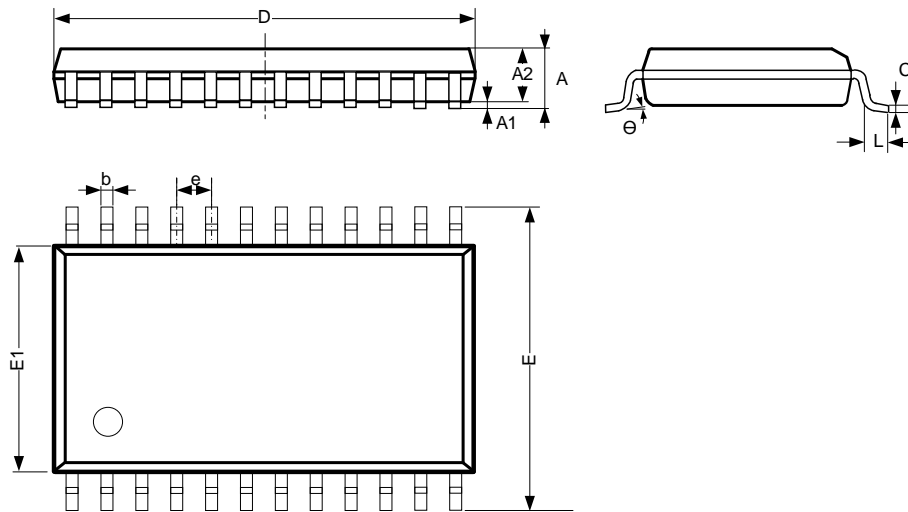
8.2.1 SSOP24 Outline Dimensions



| SYMBOL | Dimensions In Millimeters | | |
|----------|---------------------------|------|------|
| | Min. | Typ. | Max. |
| A | 1.60 | - | 2.00 |
| A1 | 0.05 | - | 0.25 |
| A2 | 1.40 | - | 1.85 |
| b | 0.28 | - | 0.37 |
| c | 0.15 | - | 0.20 |
| D | 8.00 | - | 8.40 |
| E | 7.60 | - | 8.00 |
| E1 | 5.10 | - | 5.50 |
| e | 0.65 BSC | | |
| L | 0.55 | - | 1.10 |
| L1 | 1.15 | - | 1.35 |
| θ | 0° | - | 8° |
| Unit: mm | | | |

8.3 TSSOP24 Mechanical Information

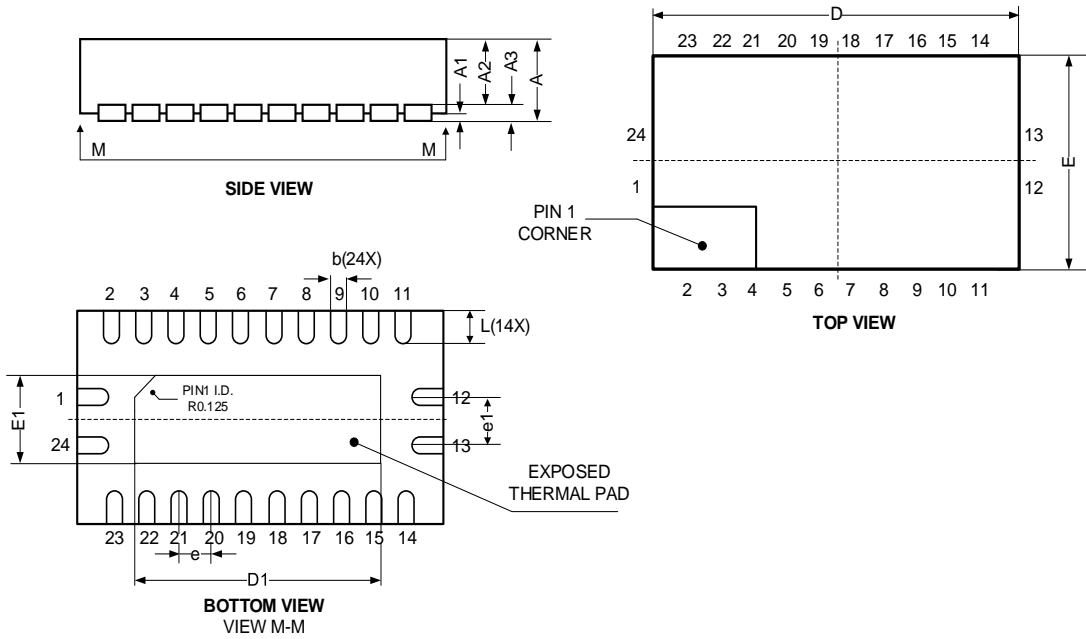
8.3.1 TSSOP24 Outline Dimensions



| SYMBOL | Dimensions In Millimeters | | |
|----------|---------------------------|------|------|
| | Min. | Typ. | Max. |
| A | - | - | 1.20 |
| A1 | 0.05 | - | 0.15 |
| A2 | 0.80 | - | 1.05 |
| b | 0.19 | - | 0.30 |
| c | 0.09 | - | 0.20 |
| D | 7.70 | - | 7.90 |
| E | 6.20 | - | 6.60 |
| E1 | 4.30 | - | 4.50 |
| e | 0.65 BSC | | |
| L | 0.45 | - | 0.75 |
| θ | 0° | - | 8° |
| Unit: mm | | | |

8.4 QFN5.5x3.5-24L Mechanical Information

8.4.1 QFN5.5x3.5-24L Outline Dimensions



| SYMBOL | Dimensions In Millimeters | | |
|----------|---------------------------|------|------|
| | Min. | Typ. | Max. |
| A | 0.80 | - | 1.00 |
| A1 | 0.00 | - | 0.05 |
| A2 | 0.60 | - | 0.70 |
| A3 | - | 0.20 | - |
| D | 5.40 | - | 5.60 |
| E | 3.40 | - | 3.60 |
| e | 0.50 BSC | | |
| e1 | - | 1.50 | - |
| b | 0.18 | - | 0.30 |
| L | 0.30 | - | 0.50 |
| D1 | 3.95 | - | 4.25 |
| E1 | 1.95 | - | 2.25 |
| Unit: mm | | | |

9 Notes and Revision History

9.1 Associated Product Family and Others

To view other products of the same type or IC products of other types, click the official website of JSCJ -- <https://www.jscj-elec.com> for more details.

9.2 Notes

Electrostatic Discharge Caution



This IC may be damaged by ESD. Relevant personnel shall comply with correct installation and use specifications to avoid ESD damage to the IC. If appropriate measures are not taken to prevent ESD damage, the hazards caused by ESD include but are not limited to degradation of integrated circuit performance or complete damage of integrated circuit. For some precision integrated circuits, a very small parameter change may cause the whole device to be inconsistent with its published specifications.

9.3 Revision History

October, 2025: rev - 1.1, Changed SOP24 package Packing Option from 1250 to 1000 Units/Reel.

DISCLAIMER

IMPORTANT NOTICE, PLEASE READ CAREFULLY

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Any person who purchases or uses JSCJ products for design shall: 1. Select products suitable for circuit application and design; 2. Design, verify and test the rationality of circuit design; 3. Procedures to ensure that the design complies with relevant laws and regulations and the requirements of such laws and regulations. JSCJ makes no warranty or representation as to the accuracy or completeness of the information contained in this data sheet and assumes no responsibility for the application or use of any of the products described in this data sheet.

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