

# Dual 4-Input Multiplexer

## MC74AC153, MC74ACT153

The MC74AC153/74ACT153 is a high-speed dual 4-input multiplexer with common select inputs and individual enable inputs for each section. It can select two lines of data from four sources. The two buffered outputs present data in the true (non-inverted) form. In addition to multiplexer operation, the MC74AC153/74ACT153 can act as a function generator and generate any two functions of three variables.

- Outputs Source/Sink 24 mA
- 'ACT153 Has TTL Compatible Inputs
- These are Pb-Free Devices

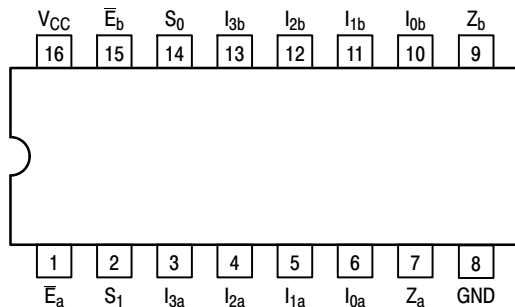


Figure 1. Pinout: 16-Lead Packages Conductors  
(Top View)

### PIN ASSIGNMENT

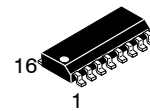
| PIN                              | FUNCTION             |
|----------------------------------|----------------------|
| I <sub>0a</sub> –I <sub>3a</sub> | Side A Data Inputs   |
| I <sub>0b</sub> –I <sub>3b</sub> | Side B Data Inputs   |
| S <sub>0</sub> , S <sub>1</sub>  | Common Select Inputs |
| $\bar{E}_a$                      | Side A Enable Input  |
| $\bar{E}_b$                      | Side B Enable Input  |
| Z <sub>a</sub>                   | Side A Output        |
| Z <sub>b</sub>                   | Side B Output        |

### TRUTH TABLE

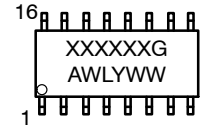
| Select Inputs  |                | Inputs (a or b) |                |                |                |                | Output |
|----------------|----------------|-----------------|----------------|----------------|----------------|----------------|--------|
| S <sub>0</sub> | S <sub>1</sub> | E               | I <sub>0</sub> | I <sub>1</sub> | I <sub>2</sub> | I <sub>3</sub> | Z      |
| X              | X              | H               | X              | X              | X              | X              | L      |
| L              | L              | L               | L              | X              | X              | X              | L      |
| L              | L              | L               | H              | X              | X              | X              | H      |
| H              | L              | L               | X              | L              | X              | X              | L      |
| H              | L              | L               | X              | H              | X              | X              | H      |
| L              | H              | L               | X              | X              | L              | X              | L      |
| L              | H              | L               | X              | X              | H              | X              | H      |
| H              | H              | L               | X              | X              | X              | L              | L      |
| H              | H              | L               | X              | X              | X              | H              | H      |

H = HIGH Voltage Level  
L = LOW Voltage Level  
X = Immaterial

### MARKING DIAGRAMS



SOIC-16  
D SUFFIX  
CASE 751B



XXX = Specific Device Code  
A = Assembly Location  
WL = Wafer Lot  
Y = Year  
WW = Work Week  
G = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 6 of this data sheet.

# MC74AC153, MC74ACT153

## FUNCTIONAL DESCRIPTION

The MC74AC153/74ACT153 is a dual 4-input multiplexer. It can select two bits of data from up to four sources under the control of the common Select inputs ( $S_0$ ,  $S_1$ ). The two 4-input multiplexer circuits have individual active-LOW Enables ( $\overline{E}_a, \overline{E}_b$ ) which can be used to strobe the outputs independently. When the Enables ( $\overline{E}_a, \overline{E}_b$ ) are HIGH, the corresponding outputs ( $Z_a, Z_b$ ) are forced LOW. The MC74AC153/74ACT153 is the logic implementation of a 2-pole, 4-position switch, where the position of the switch is determined by the logic levels supplied to the two Select inputs. The logic equations for the outputs are shown below.

$$Z_a = \overline{E}_a \cdot (I_{0a} \cdot \overline{S}_1 \cdot \overline{S}_0 + I_{1a} \cdot \overline{S}_1 \cdot S_0 + I_{2a} \cdot S_1 \cdot \overline{S}_0 + I_{3a} \cdot S_1 \cdot S_0)$$

$$Z_b = \overline{E}_b \cdot (I_{0b} \cdot \overline{S}_1 \cdot \overline{S}_0 + I_{1b} \cdot \overline{S}_1 \cdot S_0 + I_{2b} \cdot S_1 \cdot \overline{S}_0 + I_{3b} \cdot S_1 \cdot S_0)$$

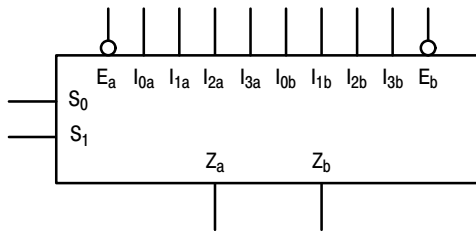
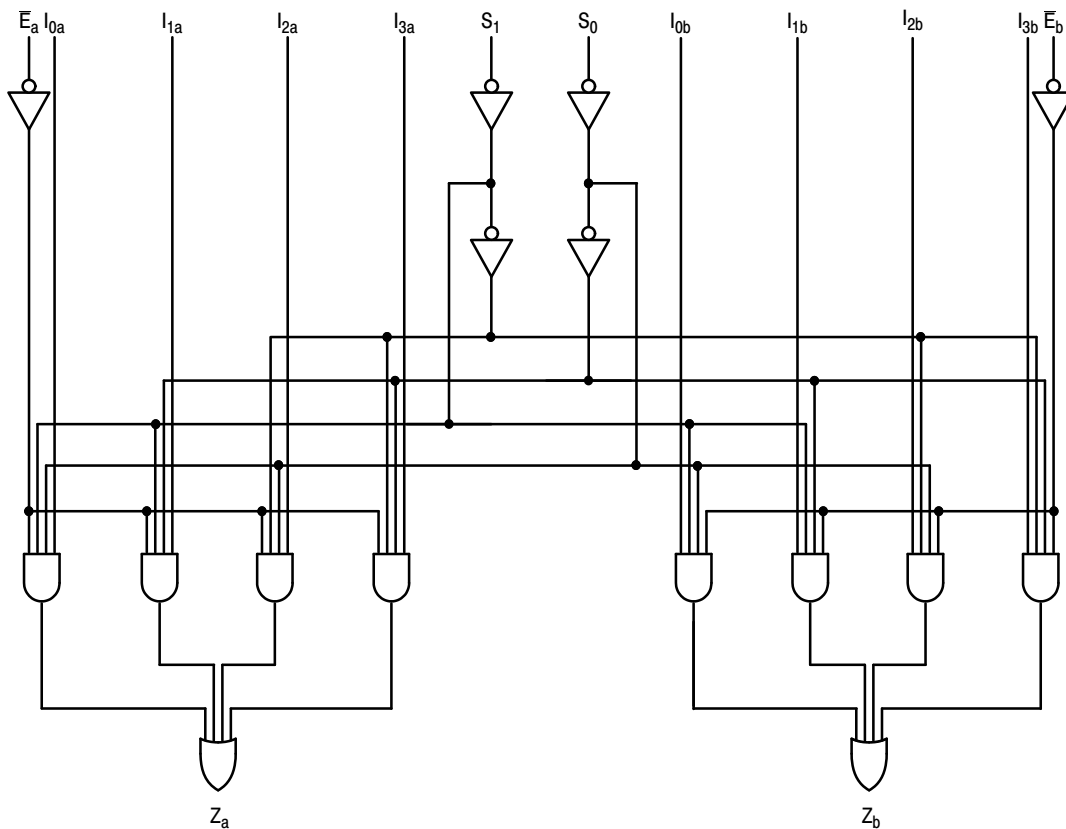


Figure 2. Logic Symbol



NOTE: This diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

Figure 3. Logic Diagram

# MC74AC153, MC74ACT153

## MAXIMUM RATINGS

| Symbol                | Parameter                                                                        | Value                                          | Unit |
|-----------------------|----------------------------------------------------------------------------------|------------------------------------------------|------|
| V <sub>CC</sub>       | DC Supply Voltage                                                                | − 0.5 to +6.5                                  | V    |
| V <sub>I</sub>        | DC Input Voltage                                                                 | − 0.5 ≤ V <sub>I</sub> ≤ V <sub>CC</sub> + 0.5 | V    |
| V <sub>O</sub>        | DC Output Voltage (Note 1)                                                       | − 0.5 ≤ V <sub>O</sub> ≤ V <sub>CC</sub> + 0.5 | V    |
| I <sub>IK</sub>       | DC Input Diode Current                                                           | ± 20                                           | mA   |
| I <sub>OK</sub>       | DC Output Diode Current                                                          | ± 50                                           | mA   |
| I <sub>O</sub>        | DC Output Sink/Source Current                                                    | ± 50                                           | mA   |
| I <sub>CC</sub>       | DC Supply Current per Output Pin                                                 | ± 50                                           | mA   |
| I <sub>GND</sub>      | DC Ground Current per Output Pin                                                 | ± 50                                           | mA   |
| T <sub>STG</sub>      | Storage Temperature Range                                                        | − 65 to + 150                                  | °C   |
| T <sub>L</sub>        | Lead temperature, 1 mm from Case for 10 Seconds                                  | 260                                            | °C   |
| T <sub>J</sub>        | Junction temperature under Bias                                                  | + 150                                          | °C   |
| θ <sub>JA</sub>       | Thermal Resistance (Note 2) SOIC                                                 | 126                                            | °C/W |
| P <sub>D</sub>        | Power Dissipation in Still Air at 25°C (Note 3) SOIC                             | 995                                            | mW   |
| MSL                   | Moisture Sensitivity                                                             | Level 1                                        |      |
| F <sub>R</sub>        | Flammability Rating Oxygen Index: 30% – 35%                                      | UL 94 V-0 @ 0.125 in                           |      |
| V <sub>ESD</sub>      | ESD Withstand Voltage Human Body Model (Note 4)<br>Charged Device Model (Note 5) | > 2000<br>> 1000                               | V    |
| I <sub>Latch-Up</sub> | Latch-Up Performance Above V <sub>CC</sub> and Below GND at 85°C (Note 6)        | ± 100                                          | mA   |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. I<sub>O</sub> absolute maximum rating must be observed.
2. The package thermal impedance is calculated in accordance with JESD51-7.
3. 500 mW at 65°C; derate to 300 mW by 10 mW/°C from 65°C to 85°C.
4. Tested to EIA/JESD22-A114-A.
5. Tested to JESD22-C101-A.
6. Tested to EIA/JESD78.

## RECOMMENDED OPERATING CONDITIONS

| Symbol                             | Parameter                                                               | Min                     | Typ | Max             | Unit |
|------------------------------------|-------------------------------------------------------------------------|-------------------------|-----|-----------------|------|
| V <sub>CC</sub>                    | Supply Voltage                                                          | 'AC                     | 2.0 | 5.0             | V    |
|                                    |                                                                         | 'ACT                    | 4.5 | 5.0             |      |
| V <sub>IN</sub> , V <sub>OUT</sub> | DC Input Voltage, Output Voltage (Ref. to GND)                          | 0                       | –   | V <sub>CC</sub> | V    |
| t <sub>r</sub> , t <sub>f</sub>    | Input Rise and Fall Time (Note 1)<br>'AC Devices except Schmitt Inputs  | V <sub>CC</sub> @ 3.0 V | –   | 150             | ns/V |
|                                    |                                                                         | V <sub>CC</sub> @ 4.5 V | –   | 40              |      |
|                                    |                                                                         | V <sub>CC</sub> @ 5.5 V | –   | 25              |      |
| t <sub>r</sub> , t <sub>f</sub>    | Input Rise and Fall Time (Note 2)<br>'ACT Devices except Schmitt Inputs | V <sub>CC</sub> @ 4.5 V | –   | 10              | ns/V |
|                                    |                                                                         | V <sub>CC</sub> @ 5.5 V | –   | 8.0             |      |
| T <sub>A</sub>                     | Operating Ambient Temperature Range                                     | –40                     | 25  | 85              | °C   |
| I <sub>OH</sub>                    | Output Current – High                                                   | –                       | –   | –24             | mA   |
| I <sub>OL</sub>                    | Output Current – Low                                                    | –                       | –   | 24              | mA   |

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

1. V<sub>IN</sub> from 30% to 70% V<sub>CC</sub>; see individual Data Sheets for devices that differ from the typical input rise and fall times.
2. V<sub>IN</sub> from 0.8 V to 2.0 V; see individual Data Sheets for devices that differ from the typical input rise and fall times.

# MC74AC153, MC74ACT153

## DC CHARACTERISTICS

| Symbol           | Parameter                            | V <sub>CC</sub><br>(V) | 74AC                   |                   | 74AC                               |  | Unit | Conditions                                                                                          |
|------------------|--------------------------------------|------------------------|------------------------|-------------------|------------------------------------|--|------|-----------------------------------------------------------------------------------------------------|
|                  |                                      |                        | T <sub>A</sub> = +25°C |                   | T <sub>A</sub> =<br>-40°C to +85°C |  |      |                                                                                                     |
|                  |                                      |                        | Typ                    | Guaranteed Limits |                                    |  |      |                                                                                                     |
| V <sub>IH</sub>  | Minimum High Level<br>Input Voltage  | 3.0                    | 1.5                    | 2.1               | 2.1                                |  | V    | V <sub>OUT</sub> = 0.1 V<br>or V <sub>CC</sub> - 0.1 V                                              |
|                  |                                      | 4.5                    | 2.25                   | 3.15              | 3.15                               |  |      |                                                                                                     |
|                  |                                      | 5.5                    | 2.75                   | 3.85              | 3.85                               |  |      |                                                                                                     |
| V <sub>IL</sub>  | Maximum Low Level<br>Input Voltage   | 3.0                    | 1.5                    | 0.9               | 0.9                                |  | V    | V <sub>OUT</sub> = 0.1 V<br>or V <sub>CC</sub> - 0.1 V                                              |
|                  |                                      | 4.5                    | 2.25                   | 1.35              | 1.35                               |  |      |                                                                                                     |
|                  |                                      | 5.5                    | 2.75                   | 1.65              | 1.65                               |  |      |                                                                                                     |
| V <sub>OH</sub>  | Minimum High Level<br>Output Voltage | 3.0                    | 2.99                   | 2.9               | 2.9                                |  | V    | I <sub>OUT</sub> = -50 μA                                                                           |
|                  |                                      | 4.5                    | 4.49                   | 4.4               | 4.4                                |  |      |                                                                                                     |
|                  |                                      | 5.5                    | 5.49                   | 5.4               | 5.4                                |  |      |                                                                                                     |
|                  |                                      | 3.0                    | -                      | 2.56              | 2.46                               |  | V    | *V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub><br>-12 mA<br>I <sub>OH</sub> -24 mA<br>-24 mA |
|                  |                                      | 4.5                    | -                      | 3.86              | 3.76                               |  |      |                                                                                                     |
|                  |                                      | 5.5                    | -                      | 4.86              | 4.76                               |  |      |                                                                                                     |
| V <sub>OL</sub>  | Maximum Low Level<br>Output Voltage  | 3.0                    | 0.002                  | 0.1               | 0.1                                |  | V    | I <sub>OUT</sub> = 50 μA                                                                            |
|                  |                                      | 4.5                    | 0.001                  | 0.1               | 0.1                                |  |      |                                                                                                     |
|                  |                                      | 5.5                    | 0.001                  | 0.1               | 0.1                                |  |      |                                                                                                     |
|                  |                                      | 3.0                    | -                      | 0.36              | 0.44                               |  | V    | *V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub><br>12 mA<br>I <sub>OL</sub> 24 mA<br>24 mA    |
|                  |                                      | 4.5                    | -                      | 0.36              | 0.44                               |  |      |                                                                                                     |
|                  |                                      | 5.5                    | -                      | 0.36              | 0.44                               |  |      |                                                                                                     |
| I <sub>IN</sub>  | Maximum Input<br>Leakage Current     | 5.5                    | -                      | ±0.1              | ±1.0                               |  | μA   | V <sub>I</sub> = V <sub>CC</sub> , GND                                                              |
| I <sub>OLD</sub> | †Minimum Dynamic<br>Output Current   | 5.5                    | -                      | -                 | 75                                 |  | mA   | V <sub>OLD</sub> = 1.65 V Max                                                                       |
| I <sub>OHD</sub> |                                      | 5.5                    | -                      | -                 | -75                                |  | mA   | V <sub>OHD</sub> = 3.85 V Min                                                                       |
| I <sub>CC</sub>  | Maximum Quiescent<br>Supply Current  | 5.5                    | -                      | 8.0               | 80                                 |  | μA   | V <sub>IN</sub> = V <sub>CC</sub> or GND                                                            |

\*All outputs loaded; thresholds on input associated with output under test.

†Maximum test duration 2.0 ms, one output loaded at a time.

NOTE: I<sub>IN</sub> and I<sub>CC</sub> @ 3.0 V are guaranteed to be less than or equal to the respective limit @ 5.5 V V<sub>CC</sub>.

## AC CHARACTERISTICS

| Symbol           | Parameter                                             | V <sub>CC</sub> *<br>(V) | 74AC                                             |            |              | 74AC                                                      |              | Unit |
|------------------|-------------------------------------------------------|--------------------------|--------------------------------------------------|------------|--------------|-----------------------------------------------------------|--------------|------|
|                  |                                                       |                          | T <sub>A</sub> = +25°C<br>C <sub>L</sub> = 50 pF |            |              | T <sub>A</sub> = −40°C to +85°C<br>C <sub>L</sub> = 50 pF |              |      |
|                  |                                                       |                          | Min                                              | Typ        | Max          | Min                                                       | Max          |      |
| t <sub>PLH</sub> | Propagation Delay<br>S <sub>n</sub> to Z <sub>n</sub> | 3.3<br>5.0               | 2.5<br>2.0                                       | 9.5<br>6.5 | 15.0<br>11.0 | 2.5<br>2.0                                                | 17.5<br>12.5 | ns   |
| t <sub>PHL</sub> | Propagation Delay<br>S <sub>n</sub> to Z <sub>n</sub> | 3.3<br>5.0               | 3.0<br>2.5                                       | 8.5<br>6.5 | 14.5<br>11.0 | 2.5<br>2.0                                                | 16.5<br>12.0 | ns   |
| t <sub>PLH</sub> | Propagation Delay<br>E <sub>n</sub> to Z <sub>n</sub> | 3.3<br>5.0               | 2.5<br>1.5                                       | 8.0<br>5.5 | 13.5<br>9.5  | 2.0<br>1.5                                                | 16.0<br>11.0 | ns   |
| t <sub>PHL</sub> | Propagation Delay<br>E <sub>n</sub> to Z <sub>n</sub> | 3.3<br>5.0               | 2.5<br>2.0                                       | 7.0<br>5.0 | 11.0<br>8.0  | 2.0<br>1.5                                                | 12.5<br>9.0  | ns   |
| t <sub>PLH</sub> | Propagation Delay<br>I <sub>n</sub> to Z <sub>n</sub> | 3.3<br>5.0               | 2.5<br>1.5                                       | 7.5<br>5.5 | 12.5<br>9.0  | 2.0<br>1.5                                                | 14.5<br>10.5 | ns   |
| t <sub>PHL</sub> | Propagation Delay<br>I <sub>n</sub> to Z <sub>n</sub> | 3.3<br>5.0               | 1.5<br>1.5                                       | 7.0<br>5.0 | 11.5<br>8.5  | 1.5<br>1.5                                                | 13.0<br>10.0 | ns   |

\*Voltage Range 3.3 V is 3.3 V ±0.3 V.

\*Voltage Range 5.0 V is 5.0 V ±0.5 V.

# MC74AC153, MC74ACT153

## DC CHARACTERISTICS

| Symbol            | Parameter                              | V <sub>CC</sub><br>(V) | 74ACT                  |                   | 74ACT                              |    | Unit                                                                                      | Conditions |
|-------------------|----------------------------------------|------------------------|------------------------|-------------------|------------------------------------|----|-------------------------------------------------------------------------------------------|------------|
|                   |                                        |                        | T <sub>A</sub> = +25°C |                   | T <sub>A</sub> =<br>-40°C to +85°C |    |                                                                                           |            |
|                   |                                        |                        | Typ                    | Guaranteed Limits |                                    |    |                                                                                           |            |
| V <sub>IH</sub>   | Minimum High Level Input Voltage       | 4.5<br>5.5             | 1.5<br>1.5             | 2.0<br>2.0        | 2.0<br>2.0                         | V  | V <sub>OUT</sub> = 0.1 V<br>or V <sub>CC</sub> - 0.1 V                                    |            |
| V <sub>IL</sub>   | Maximum Low Level Input Voltage        | 4.5<br>5.5             | 1.5<br>1.5             | 0.8<br>0.8        | 0.8<br>0.8                         | V  | V <sub>OUT</sub> = 0.1 V<br>or V <sub>CC</sub> - 0.1 V                                    |            |
| V <sub>OH</sub>   | Minimum High Level Output Voltage      | 4.5<br>5.5             | 4.49<br>5.49           | 4.4<br>5.4        | 4.4<br>5.4                         | V  | I <sub>OUT</sub> = -50 μA                                                                 |            |
|                   |                                        | 4.5<br>5.5             | -<br>-                 | 3.86<br>4.86      | 3.76<br>4.76                       | V  | *V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub><br>-24 mA<br>I <sub>OH</sub> -24 mA |            |
| V <sub>OL</sub>   | Maximum Low Level Output Voltage       | 4.5<br>5.5             | 0.001<br>0.001         | 0.1<br>0.1        | 0.1<br>0.1                         | V  | I <sub>OUT</sub> = 50 μA                                                                  |            |
|                   |                                        | 4.5<br>5.5             | -<br>-                 | 0.36<br>0.36      | 0.44<br>0.44                       | V  | *V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub><br>24 mA<br>I <sub>OL</sub> 24 mA   |            |
| I <sub>IN</sub>   | Maximum Input Leakage Current          | 5.5                    | -                      | ±0.1              | ±1.0                               | μA | V <sub>I</sub> = V <sub>CC</sub> , GND                                                    |            |
| ΔI <sub>CCT</sub> | Additional Max. I <sub>CC</sub> /Input | 5.5                    | 0.6                    | -                 | 1.5                                | mA | V <sub>I</sub> = V <sub>CC</sub> - 2.1 V                                                  |            |
| I <sub>OLD</sub>  | †Minimum Dynamic Output Current        | 5.5                    | -                      | -                 | 75                                 | mA | V <sub>OLD</sub> = 1.65 V Max                                                             |            |
| I <sub>OHD</sub>  |                                        | 5.5                    | -                      | -                 | -75                                | mA | V <sub>OHD</sub> = 3.85 V Min                                                             |            |
| I <sub>CC</sub>   | Maximum Quiescent Supply Current       | 5.5                    | -                      | 8.0               | 80                                 | μA | V <sub>IN</sub> = V <sub>CC</sub> or GND                                                  |            |

\*All outputs loaded; thresholds on input associated with output under test.

†Maximum test duration 2.0 ms, one output loaded at a time.

## AC CHARACTERISTICS

| Symbol           | Parameter                                             | V <sub>CC</sub> *<br>(V) | 74ACT                                            |     |      | 74ACT                                                     |      | Unit |
|------------------|-------------------------------------------------------|--------------------------|--------------------------------------------------|-----|------|-----------------------------------------------------------|------|------|
|                  |                                                       |                          | T <sub>A</sub> = +25°C<br>C <sub>L</sub> = 50 pF |     |      | T <sub>A</sub> = -40°C to +85°C<br>C <sub>L</sub> = 50 pF |      |      |
|                  |                                                       |                          | Min                                              | Typ | Max  | Min                                                       | Max  |      |
| t <sub>PLH</sub> | Propagation Delay<br>S <sub>n</sub> to Z <sub>n</sub> | 5.0                      | 3.0                                              | 7.0 | 11.5 | 2.0                                                       | 13.5 | ns   |
| t <sub>PHL</sub> | Propagation Delay<br>S <sub>n</sub> to Z <sub>n</sub> | 5.0                      | 3.0                                              | 7.0 | 11.5 | 2.5                                                       | 13.5 | ns   |
| t <sub>PLH</sub> | Propagation Delay<br>E <sub>n</sub> to Z <sub>n</sub> | 5.0                      | 2.0                                              | 6.5 | 10.5 | 2.0                                                       | 12.5 | ns   |
| t <sub>PHL</sub> | Propagation Delay<br>E <sub>n</sub> to Z <sub>n</sub> | 5.0                      | 3.0                                              | 6.0 | 9.5  | 2.5                                                       | 11.0 | ns   |
| t <sub>PLH</sub> | Propagation Delay<br>I <sub>n</sub> to Z <sub>n</sub> | 5.0                      | 2.5                                              | 5.5 | 9.5  | 2.0                                                       | 11.0 | ns   |
| t <sub>PHL</sub> | Propagation Delay<br>I <sub>n</sub> to Z <sub>n</sub> | 5.0                      | 2.0                                              | 5.5 | 9.5  | 2.0                                                       | 11.0 | ns   |

\*Voltage Range 5.0 V is 5.0 V ±0.5 V.

## CAPACITANCE

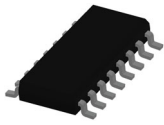
| Symbol          | Parameter                     | Value<br>Typ | Unit | Test Conditions         |
|-----------------|-------------------------------|--------------|------|-------------------------|
| C <sub>IN</sub> | Input Capacitance             | 4.5          | pF   | V <sub>CC</sub> = 5.0 V |
| C <sub>PD</sub> | Power Dissipation Capacitance | 65           | pF   | V <sub>CC</sub> = 5.0 V |

## MC74AC153, MC74ACT153

### ORDERING INFORMATION

| Device Order Number | Marking | Package              | Shipping <sup>†</sup> |
|---------------------|---------|----------------------|-----------------------|
| MC74ACT153DG        | ACT153  | SOIC-16<br>(Pb-Free) | 48 Units / Rail       |
| MC74ACT153DR2G      | ACT153  | SOIC-16<br>(Pb-Free) | 2500 Tape & Reel      |

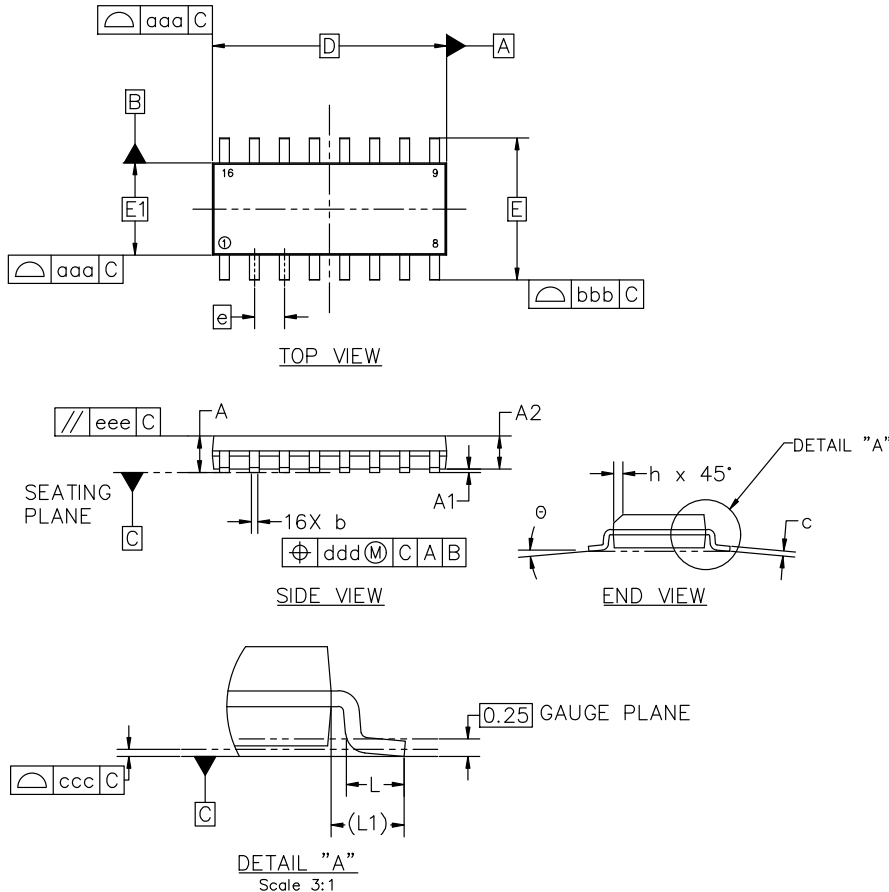
<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.


**SOIC-16 9.90x3.90x1.37 1.27P**  
**CASE 751B**  
**ISSUE M**

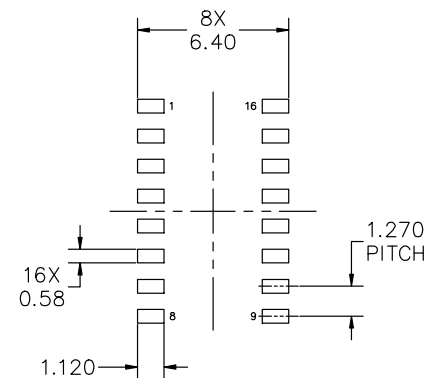
DATE 18 OCT 2024

## NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. DIMENSION IN MILLIMETERS. ANGLE IN DEGREES.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15mm PER SIDE.
5. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127mm TOTAL IN EXCESS OF THE b DIMENSION AT MAXIMUM MATERIAL CONDITION.



| MILLIMETERS                    |          |      |      |
|--------------------------------|----------|------|------|
| DIM                            | MIN      | NOM  | MAX  |
| A                              | 1.35     | 1.55 | 1.75 |
| A1                             | 0.10     | 0.18 | 0.25 |
| A2                             | 1.25     | 1.37 | 1.50 |
| b                              | 0.35     | 0.42 | 0.49 |
| c                              | 0.19     | 0.22 | 0.25 |
| D                              | 9.90 BSC |      |      |
| E                              | 6.00 BSC |      |      |
| E1                             | 3.90 BSC |      |      |
| e                              | 1.27 BSC |      |      |
| h                              | 0.25     | ---  | 0.50 |
| L                              | 0.40     | 0.83 | 1.25 |
| L1                             | 1.05 REF |      |      |
| θ                              | 0°       | ---  | 7°   |
| TOLERANCE OF FORM AND POSITION |          |      |      |
| aaa                            | 0.10     |      |      |
| bbb                            | 0.20     |      |      |
| ccc                            | 0.10     |      |      |
| ddd                            | 0.25     |      |      |
| eee                            | 0.10     |      |      |



\*FOR ADDITIONAL INFORMATION ON OUR PB-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE onsemi SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERM/D

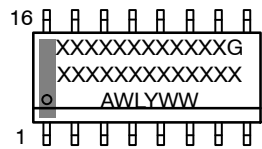
|                         |                                     |                                                                                                                                                                                  |
|-------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| <b>DESCRIPTION:</b>     | <b>SOIC-16 9.90X3.90X1.37 1.27P</b> | <b>PAGE 1 OF 2</b>                                                                                                                                                               |

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SOIC-16 9.90x3.90x1.37 1.27P  
CASE 751B  
ISSUE M

DATE 18 OCT 2024

GENERIC  
MARKING DIAGRAM\*



XXXXX = Specific Device Code  
A = Assembly Location  
WL = Wafer Lot  
Y = Year  
WW = Work Week  
G = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

|                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STYLE 1:<br>PIN 1. COLLECTOR<br>2. BASE<br>3. EMITTER<br>4. NO CONNECTION<br>5. EMITTER<br>6. BASE<br>7. COLLECTOR<br>8. COLLECTOR<br>9. BASE<br>10. EMITTER<br>11. NO CONNECTION<br>12. EMITTER<br>13. BASE<br>14. COLLECTOR<br>15. EMITTER<br>16. COLLECTOR                           | STYLE 2:<br>PIN 1. CATHODE<br>2. ANODE<br>3. NO CONNECTION<br>4. CATHODE<br>5. CATHODE<br>6. NO CONNECTION<br>7. ANODE<br>8. CATHODE<br>9. CATHODE<br>10. ANODE<br>11. NO CONNECTION<br>12. CATHODE<br>13. CATHODE<br>14. NO CONNECTION<br>15. ANODE<br>16. CATHODE | STYLE 3:<br>PIN 1. COLLECTOR, DYE #1<br>2. BASE, #1<br>3. EMITTER, #1<br>4. COLLECTOR, #1<br>5. COLLECTOR, #2<br>6. BASE, #2<br>7. EMITTER, #2<br>8. COLLECTOR, #2<br>9. COLLECTOR, #3<br>10. BASE, #3<br>11. EMITTER, #3<br>12. COLLECTOR, #3<br>13. COLLECTOR, #4<br>14. BASE, #4<br>15. EMITTER, #4<br>16. COLLECTOR, #4                                                                                         | STYLE 4:<br>PIN 1. COLLECTOR, DYE #1<br>2. COLLECTOR, #1<br>3. COLLECTOR, #2<br>4. COLLECTOR, #2<br>5. COLLECTOR, #3<br>6. COLLECTOR, #3<br>7. COLLECTOR, #4<br>8. COLLECTOR, #4<br>9. BASE, #4<br>10. EMITTER, #4<br>11. BASE, #3<br>12. EMITTER, #3<br>13. BASE, #2<br>14. EMITTER, #2<br>15. BASE, #1<br>16. EMITTER, #1 |
| STYLE 5:<br>PIN 1. DRAIN, DYE #1<br>2. DRAIN, #1<br>3. DRAIN, #2<br>4. DRAIN, #2<br>5. DRAIN, #3<br>6. DRAIN, #3<br>7. DRAIN, #4<br>8. DRAIN, #4<br>9. GATE, #4<br>10. SOURCE, #4<br>11. GATE, #3<br>12. SOURCE, #3<br>13. GATE, #2<br>14. SOURCE, #2<br>15. GATE, #1<br>16. SOURCE, #1 | STYLE 6:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. CATHODE<br>4. CATHODE<br>5. CATHODE<br>6. CATHODE<br>7. CATHODE<br>8. CATHODE<br>9. ANODE<br>10. ANODE<br>11. ANODE<br>12. ANODE<br>13. ANODE<br>14. ANODE<br>15. ANODE<br>16. ANODE                                 | STYLE 7:<br>PIN 1. SOURCE N-CH<br>2. COMMON DRAIN (OUTPUT)<br>3. COMMON DRAIN (OUTPUT)<br>4. GATE P-CH<br>5. COMMON DRAIN (OUTPUT)<br>6. COMMON DRAIN (OUTPUT)<br>7. COMMON DRAIN (OUTPUT)<br>8. SOURCE P-CH<br>9. SOURCE P-CH<br>10. COMMON DRAIN (OUTPUT)<br>11. COMMON DRAIN (OUTPUT)<br>12. COMMON DRAIN (OUTPUT)<br>13. GATE N-CH<br>14. COMMON DRAIN (OUTPUT)<br>15. COMMON DRAIN (OUTPUT)<br>16. SOURCE N-CH |                                                                                                                                                                                                                                                                                                                             |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                                                                                                     |
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