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74LCX138
Low Voltage 1-of-8 Decoder/Demultiplexer
with 5V Tolerant Inputs

74LCX138 Low Voltage 1-of-8 Decoder/Demultiplexer with 5V Tolerant Inputs

Connection Diagrams

Pin Assignments for SOIC, SOP, and TSSOP

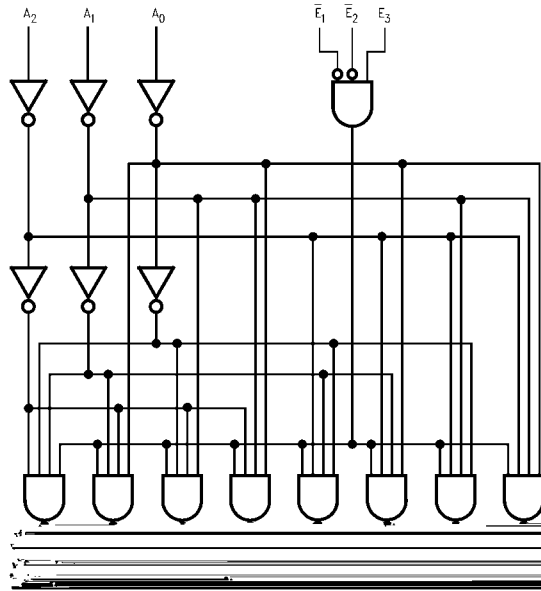
Pad Assignments for DQFN

(Top Through View)

Pin Descriptions**Functional Description**

The LCX138 high-speed 1-of-8 decoder/demultiplexer accepts three binary weighted inputs (A_0 , A_1 , A_2) and, when enabled, provides eight mutually exclusive active-LOW outputs (\bar{O}_0 – \bar{O}_7). The LCX138 features three Enable inputs, two active-LOW (\bar{E}_1 , \bar{E}_2) and one active-HIGH (E_3). All outputs will be HIGH unless \bar{E}_1 and \bar{E}_2 are LOW and E_3 is HIGH. The LCX138 can be used as an 8-output demultiplexer.

Logic Diagram



Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

Absolute Maximum Ratings (Note 3)

Symbol	Parameter	Value	Conditions	Units
V_{CC}	Supply Voltage	-0.5 to +7.0		V
V_I	DC Input Voltage	-0.5 to +7.0		V
V_O	DC Output Voltage	-0.5 to $V_{CC} + 0.5$	Output in HIGH or 7443(V)T0	V

Recommended Operating Conditions (Note 5)

Note 3: The Absolute Maximum Ratings are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the Electrical Characteristics tables are not guaranteed at the Absolute Maximum Ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

Note 4: I_O Absolute Maximum Rating must be observed.

Note 5: Unused inputs must be held HIGH or LOW. They may not float.

DC Electrical Characteristics

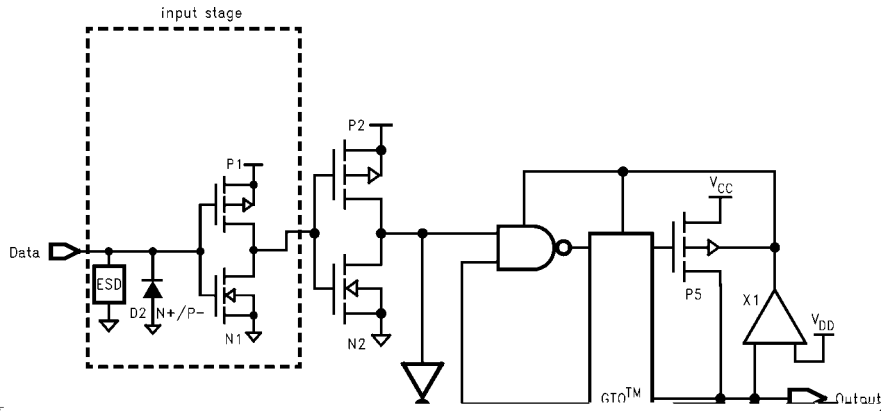
AC Loading and Waveforms Generic for LCX Family

FIGURE 1. AC Test Circuit
(C_L includes probe and jig capacitance)

Waveform for Inverting and Non-Inverting Functions

Propagation Delay, Pulse Width and t_{rec} Waveforms

Schematic Diagram Generic for LCX Family



74LCX138

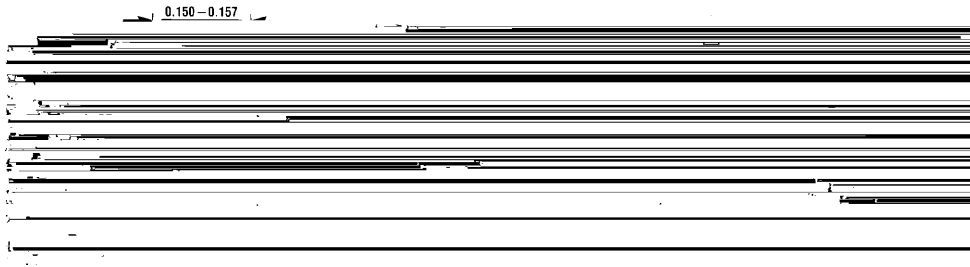
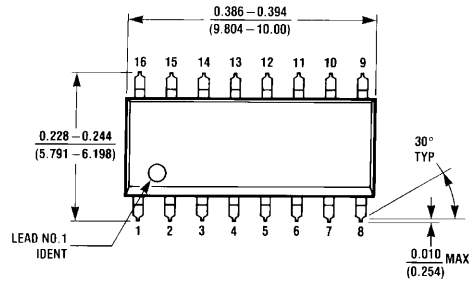
Tape and Reel Specification

Tape Format for DQFN

TAPE DIMENSIONS inches (millimeters)

REEL DIMENSIONS inches (millimeters)

Physical Dimensions inches (millimeters) unless otherwise noted



**16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow
Package Number M16A**

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Physical Dimensions inches (millimeters) unless otherwise noted (Continued)

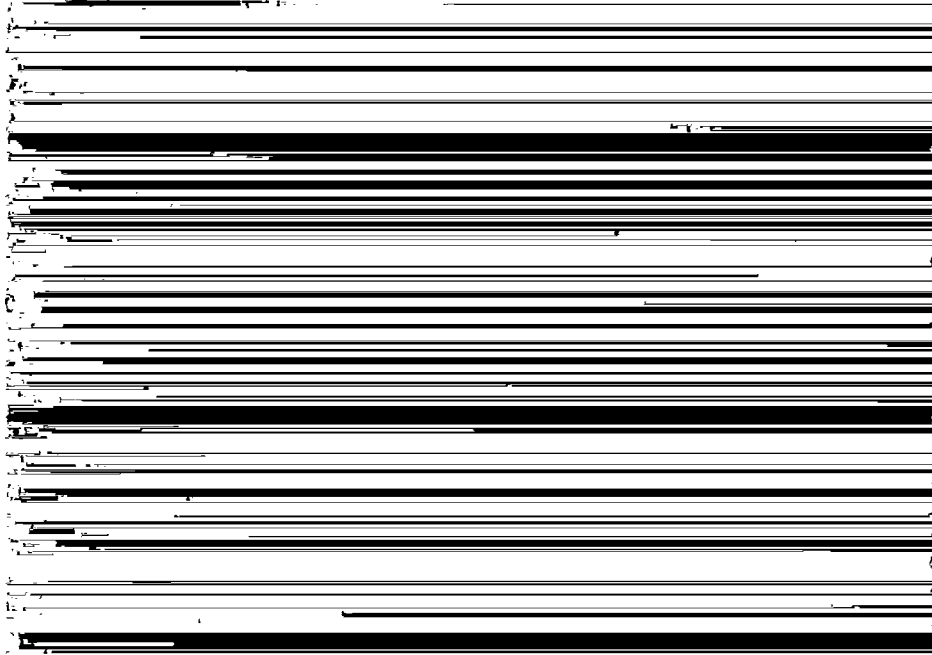
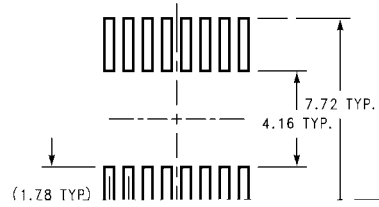
Physical Dimensions inches (millimeters) unless otherwise noted (Continued)

74LCX138

16-Terminal Depopulated Quad Very-Thin Flat Pack No Leads (DQFN), JEDEC MO-241, 2.5 x 3.5mm

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)

DIMENSIONS METRIC ONLY



16-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide
Package Number MTC16

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