

## Product Overview

### MC74LCX138: Low Voltage CMOS 3-to-8 Decoder/Demultiplexer

For complete documentation, see the data sheet.

The MC74LCX138 is a high performance, 3-to-8 decoder/demultiplexer operating from a 2.3 to 3.6 V supply. High impedance TTL compatible inputs significantly reduce current loading to input drivers while TTL compatible outputs offer improved switching noise performance. A VI specification of 5.5 V allows MC74LCX138 inputs to be safely driven from 5 V devices. The MC74LCX138 is suitable for memory address decoding and other TTL level bus-oriented applications. The MC74LCX138 high-speed 3-to-8 decoder/demultiplexer accepts three binary weighted inputs (A0, A1, A2) and, when enabled, provides eight mutually exclusive active-LOW outputs (O0-O7). The LCX138 features three Enable inputs, two active-LOW (E1, E2) and one active-HIGH (E3). All outputs will be HIGH unless E1 and E2 are LOW, and E3 is HIGH. This multiple enabled function allows easy parallel expansion of the device to a 1-of-32 (5 lines to 32 lines) decoder with just four LCX138 devices and one inverter (see Figure 1). The LCX138 can be used as an 8-output demultiplexer by using one of the active-LOW Enable inputs as the data input and the other Enable inputs as strobes. The Enable inputs which are not used must be permanently tied to their appropriate active-HIGH or active-LOW state.

### Features

- Designed for 2.3 V to 3.6 V VCC Operation
- 5V Tolerant Inputs - Interface Capability With 5V TTL Logic
- LVTTTL Compatible
- LVCMOS Compatible
- 24mA Balanced Output Sink and Source Capability
- Near Zero Static Supply Current (10mA) Substantially Reduces System Power Requirements
- Latchup Performance Exceeds 500mA
- ESD Performance: Human Body Model >2000V; Machine Model >200V
- Pb-Free Packages are Available\*

### Part Electrical Specifications

Product	Compliance	Status	Channels	V <sub>CC</sub> Min (V)	V <sub>CC</sub> Max (V)	t <sub>pd</sub> Max (ns)	I <sub>O</sub> Max (mA)	Package Type
MC74LCX138DR2G	Pb-free Halide free	Active	1	2	3.6	6	null	SOIC-16
MC74LCX138DTG	Pb-free Halide free	Active	1	2	3.6	6	null	TSSOP-16
MC74LCX138DTR2G	Pb-free Halide free	Active	1	2	3.6	6	null	TSSOP-16
NLV74LCX138DR2G	AEC Qualified PPAP Capable Pb-free Halide free	Active	1	2	3.6	6	null	SOIC-16

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