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June 1993  
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# 74LVX138

## Low Voltage 1-of-8 Decoder/Demultiplexer

### General Description

The LVX138 is a high-speed 1-of-8 decoder/demultiplexer. This device is ideally suited for high-speed bipolar memory chip select address decoding. The multiple input enables allow parallel expansion to a 1-of-24 decoder using just three LVX138 devices or a 1-of-32 decoder using four LVX138 devices.

74LVX138 Low Voltage 1-of-8 Decoder/Demultiplexer

## Functional Description

The LVX138 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 ( $\overline{O}_0$ – $\overline{O}_7$ ). The LVX138 features three Enable inputs, two active-LOW ( $\overline{E}_1$ ,  $\overline{E}_2$ ) and one active-HIGH ( $E_3$ ).

All outputs will be HIGH unless  $\overline{E}_1$  and  $\overline{E}_2$  are LOW and  $E_3$  is HIGH.

The LVX138 can be used as an 8-output demultiplexer by

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## AC Electrical Characteristics

Symbol	Parameter	V <sub>CC</sub> (V)	T <sub>A</sub> = +25°C			T <sub>A</sub> = -40°C to +85°C		Units	CL (pF)
			Min	Typ	Max	Min	Max		
t <sub>PLH</sub>	Propagation	2.7		7.1	13.8	1.0	16.5		15
t <sub>PHL</sub>	Delay Time			9.6	17.3	1.0	20.0	ns	50
	A <sub>n</sub> to $\overline{O}_n$	3.3 ± 0.3		5.5	8.8	1.0	10.5		15
				8.0	12.3	1.0	14.0		50

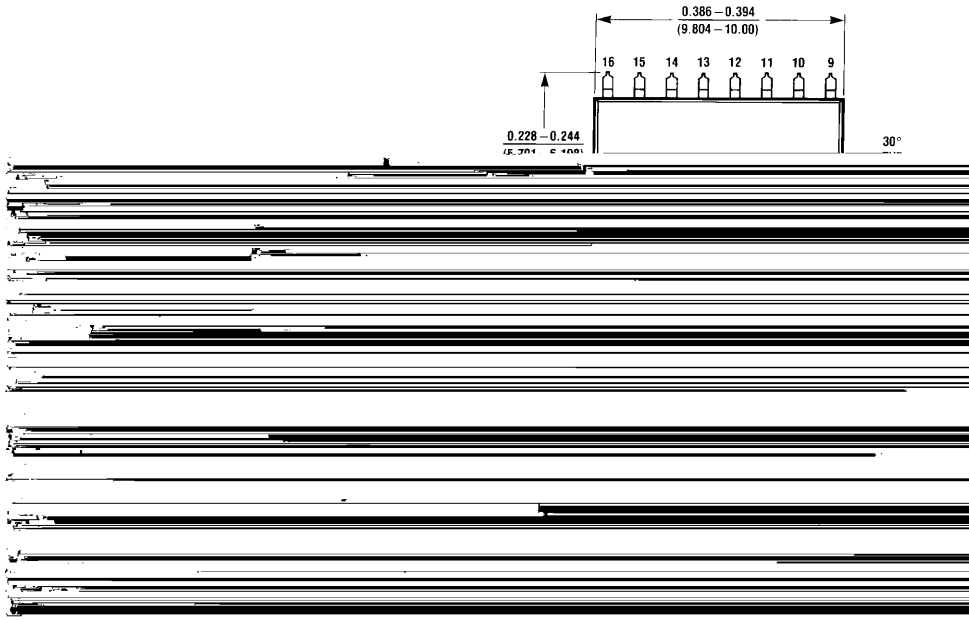
t<sub>50</sub> 049.977imm3552w 049.97 86354 TDe(i27)(17f6N(55 049.975 4.799,)5)-0.4(t)-11.e2.(n)-22(c)10..1 53.17fh.2m5 4(863no004 Tc (ns)TJ 7.98 2.5 TD (15)TJ -58.96)6 63rb15t4.0 503552w Tf 11 /F2

**Note 4:** Parameter guaranteed by design.  $t_{OSLH} = |t_{PLHm} - t_{PLHn}|$ ,  $t_{OSHL} = |t_{PHLm} - t_{PHLn}|$

## Capacitance

**Note 5:** C<sub>PD</sub> is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load. Average operating current can be obtained by the equation:  $C_{PD} \times V_{CC} \times I_N + I_{CC}$

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

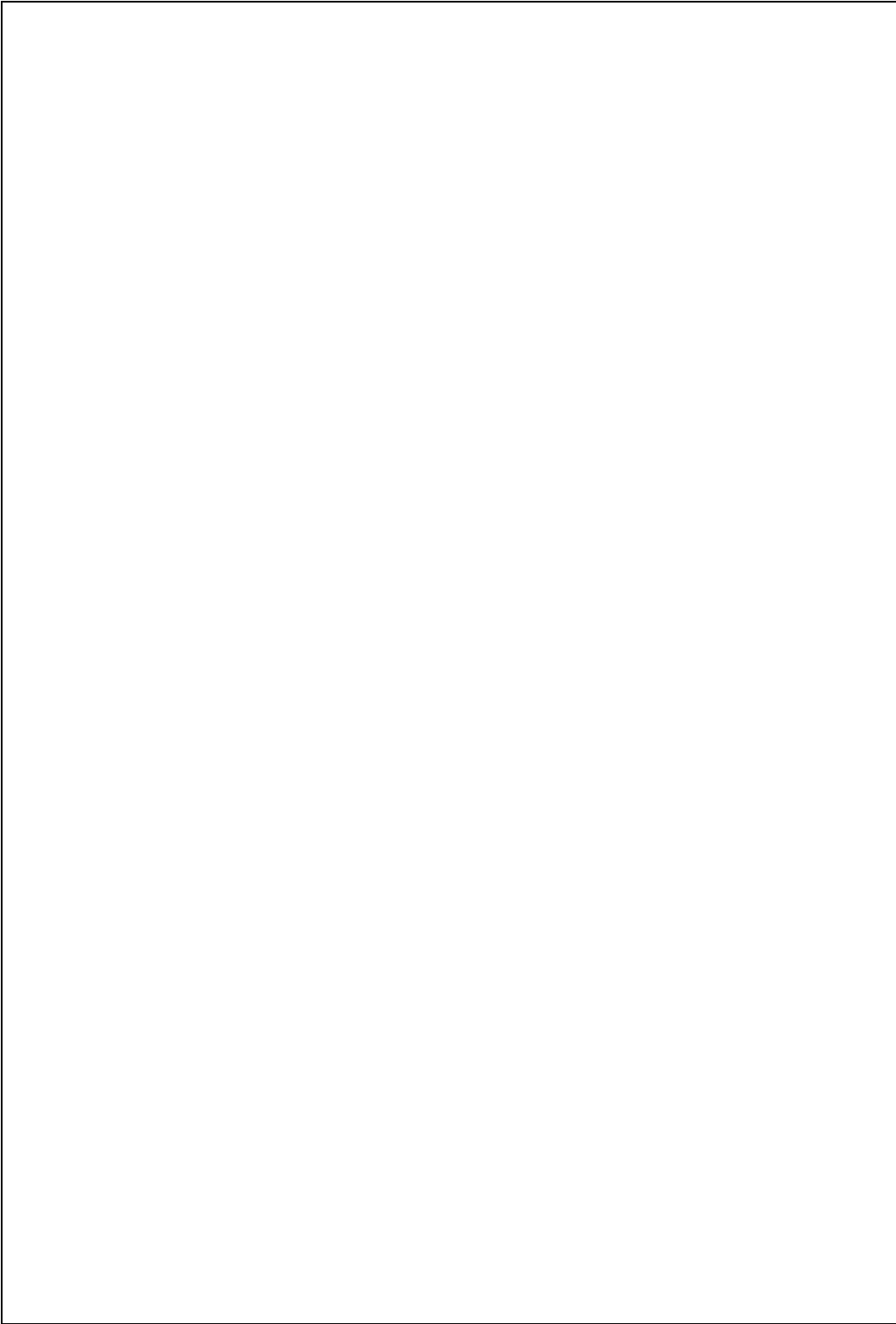


**16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow  
Package Number M16A**

74LVX138

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

16-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide





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