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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated

January 2000
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74LVT16646 • 74LVTH16646
Low Voltage 16-Bit Transceiver/Register with 3-STATE Outputs

General Description

The LVT16646 and LVTH16646 contains sixteen non-inverting bidirectional registered bus transceivers providing multiplexed transmission of data directly from the input bus or from the internal storage registers. Each byte has separate control inputs which can be shorted together for full

Connection Diagram

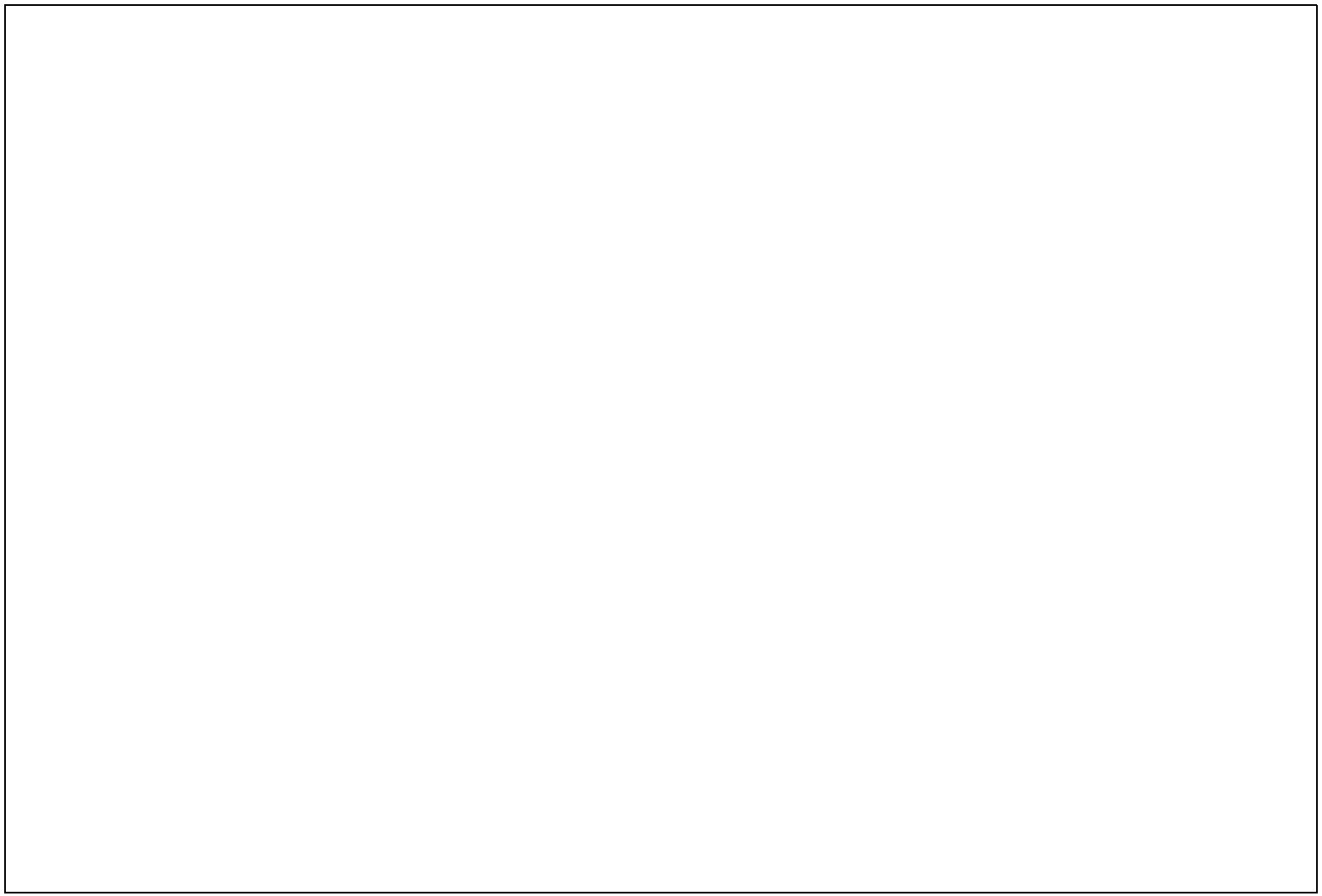
Pin Descriptions

Truth Table

(Note 1)

H = HIGH Voltage Level
X = Immaterial
L = LOW Voltage Level
⌐ = LOW-to-HIGH Transition.

Note 1:



Logic Diagrams

Absolute Maximum Ratings(Note 2)

Symbol	Parameter	Value	Conditions	Units
V_{CC}	Supply Voltage	–0.5 to +4.6		V
V_I	DC Input Voltage	–0.5 to +7.0		V
V_O	DC Output Voltage	–0.5 to +7.0	Output in 3-STATE	V
		–0.5 to +7.0	Output in HIGH or LOW State (Note 3)	V
I_{IK}	DC Input Diode Current	–50	V_I < GND	mA
I_{OK}	DC Output Diode Current	–50	V_O < GND	mA
I_O	DC Output Current	64	$V_O > V_{CC}$ Output at HIGH State	mA
		128	$V_O > V_{CC}$ Output at LOW State	
I_{CC}	DC Supply Current per Supply Pin	±64		mA
I_{GND}	DC Ground Current per Ground Pin	±128		mA
T_{STG}	Storage Temperature	–65 to +150		°C

Recommended Operating Conditions

Symbol	Parameter	Min	Max	Units
V_{CC}	Supply Voltage	2.7	3.6	V
V_I	Input Voltage	0	5.5	V
I_{OH}	HIGH-Level Output Current		–32	mA
I_{OL}	LOW-Level Output Current		64	
T_A	Free-Air Operating Temperature	–40	85	°C
$\Delta t/\Delta V$	Input Edge Rate, V_{IN} = 0.8V–2.0V, V_{CC} = 3.0V	0	10	ns/V

Note 2: Absolute Maximum continuous ratings are those values beyond which damage to the device may occur. Exposure to these conditions or conditions beyond those indicated may adversely affect device reliability. Functional operation under absolute maximum rated conditions is not implied.

Note 3: I_O Absolute Maximum Rating must be observed.

DC Electrical Characteristics

Note 4: Applies to bushold version only (74LVTH16646)

Note 5: An external driver must source at least the specified current to switch from LOW-to-HIGH.

Note 6:

AC Electrical Characteristics

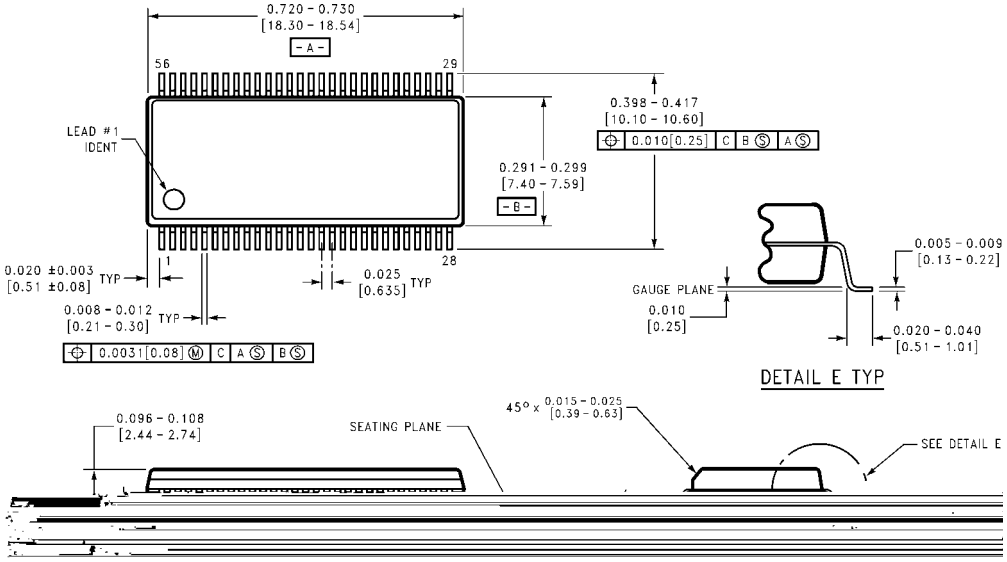
Symbol	Parameter	$T_A = -40°C$ to $+85°C$ $C_L = 50$ pF, $R_L =$	Units

Note 10: Skew is defined as the absolute value of the difference between the actual propagation delay for any two separate outputs of the same device. The specification applies to any outputs switching in the same direction, either HIGH-to-LOW (t_{OSHL}) or LOW-to-HIGH (t_{OSLH}).

Capacitance (Note 11)

Note 11: Capacitance is measured at frequency f = 1 MHz, per MIL-STD-883, Method 3012.

Physical Dimensions inches (millimeters) unless otherwise noted



56-Lead Shrink Small Outline Package (SSOP), JEDEC MO-118, 0.300" Wide
Package Number MS56A