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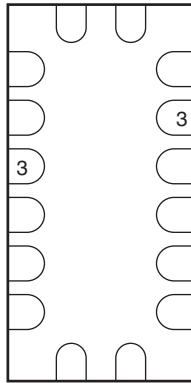
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## Connection Diagrams



DQFN Pad Assignments (Top Through View)



MicroMLP Pad Assignments (Top Through View)

## Top Mark

MicroMLP Top Mark (Top View)

## Pin Assignment

DQFN Pin #	$\mu$ MLP Pin #	Terminal Name	Description
1	3	$V_{CCA}$	Side A Power Supply
2	4	$\overline{T/R}_0$	Transmit/Receive Input
3–6	5–8	$A_0$ – $A_3$	Side A Inputs or 3-STATE Outputs
7	9	$\overline{T/R}_3$	Transmit/Receive Input
8	10	GND	Ground
9	11	$\overline{OE}$	Output Enable Input
10	12	$\overline{T/R}_2$	Transmit/Receive Input
11–14	13–16	$B_3$ – $B_0$	Side B Inputs or 3-STATE Outputs
15	1	$\overline{T/R}_1$	Transmit/Receive Input
16	2	$V_{CCB}$	Side B Power Supply

## Truth Table

H = HIGH Voltage Level  
 L = LOW Voltage Level  
 X = Don't Care

## Power-Up/Power-Down Sequencing

FXL translators offer an advantage in that either  $V_{CC}$  may be powered up first. This benefit derives from the chip design. When either  $V_{CC}$  is at 0 volts, outputs are in a HIGH-Impedance state. The control inputs ( $T/\overline{R}_n$  and  $\overline{OE}$ ) are designed to track the  $V_{CCA}$  supply. A pull-up resistor tying  $\overline{OE}$  to  $V_{CCA}$  should be used to ensure that bus contention, excessive currents, or oscillations do not occur during power-up/power-down. The size of the pull-up resistor is based upon the current-sinking capability of the  $\overline{OE}$  driver.

The recommended power-up sequence is the following:

1. Apply power to either  $V_{CC}$ .
2. Apply power to the  $T/\overline{R}_n$  inputs (Logic HIGH for A-to-B operation; Logic LOW for B-to-A operation) and to the respective data inputs (A Port or B Port). This may occur at the same time as Step 1.
3. Apply power to other  $V_{CC}$ .
4. Drive the  $\overline{OE}$  input LOW to enable the device.

The recommended power-down sequence is the following:

1. Drive  $\overline{OE}$  input HIGH to disable the device.
2. Remove power from either  $V_{CC}$ .
3. Remove power from other  $V_{CC}$ .

## Absolute Maximum Ratings

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.

## Recommended Operating Conditions<sup>(2)</sup>

The Recommended Operating Conditions table defines the conditions for actual device operation. Recommended operating conditions are specified to ensure optimal performance to the datasheet specifications. Fairchild does not recommend exceeding them or designing to Absolute Maximum Ratings.

### Notes:

1.  $I_O$  Absolute Maximum Rating must be observed.
2. All unused inputs and I/O pins must be held at  $V_{CCI}$ .

### DC Electrical Characteristics

Symbol	Parameter	Conditions	$V_{CCI}$ (V)	$V_{CCO}$ (V)	Min.	Max.	Units
$V_{IH}$	High Level Input Voltage <sup>(3)</sup>	Data Inputs $A_n, B_n$	2.7–3.6	1.1–3.6	2.0		V
			2.3–2.7		1.6		
			1.65–2.3		$0.65 \times V_{CCI}$		
			1.4–1.65		$0.65 \times V_{CCI}$		
			1.1–1.4		$0.9 \times V_{CCI}$		

$I_I$	Input Leakage Current. Control Pins	$V_I = V_{CCA}$ or GND	1.1–3.6	3.6	$\pm 1.0$	$\mu A$
$I_{OFF}$	Power Off Leakage Current	$A_n, V_I$ or $V_O = 0V$ to $3.6V$	0	3.6	$\pm 10.0$	$\mu A$
		$B_n, V_I$ or $V_O = 0V$ to $3.6V$	3.6	0	$\pm 10.0$	
$I_{OZ}$	3-STATE Output Leakage <sup>(5)</sup> $0 \leq V_O \leq 3.6V$ $V_I = V_{IH}$ or $V_{IL}$	$A_n, B_n$ $\overline{OE} = V_{IH}$	3.6	3.6	$\pm 10.0$	$\mu A$
		$B_n,$ $\overline{OE} = \text{Don't Care}$	0	3.6	+10.0	
		$A_n,$ $\overline{OE} = \text{Don't Care}$	3.6	0	+10.0	
$I_{CCA/B}$	Quiescent Supply Current <sup>(6)</sup>	$V_I = V_{CC1}$ or GND; $I_O = 0$	1.1–3.6	1.1–3.6	20.0	$\mu A$
$I_{CCZ}$	Quiescent Supply Current <sup>(6)</sup>	$V_I$				

**Notes:**

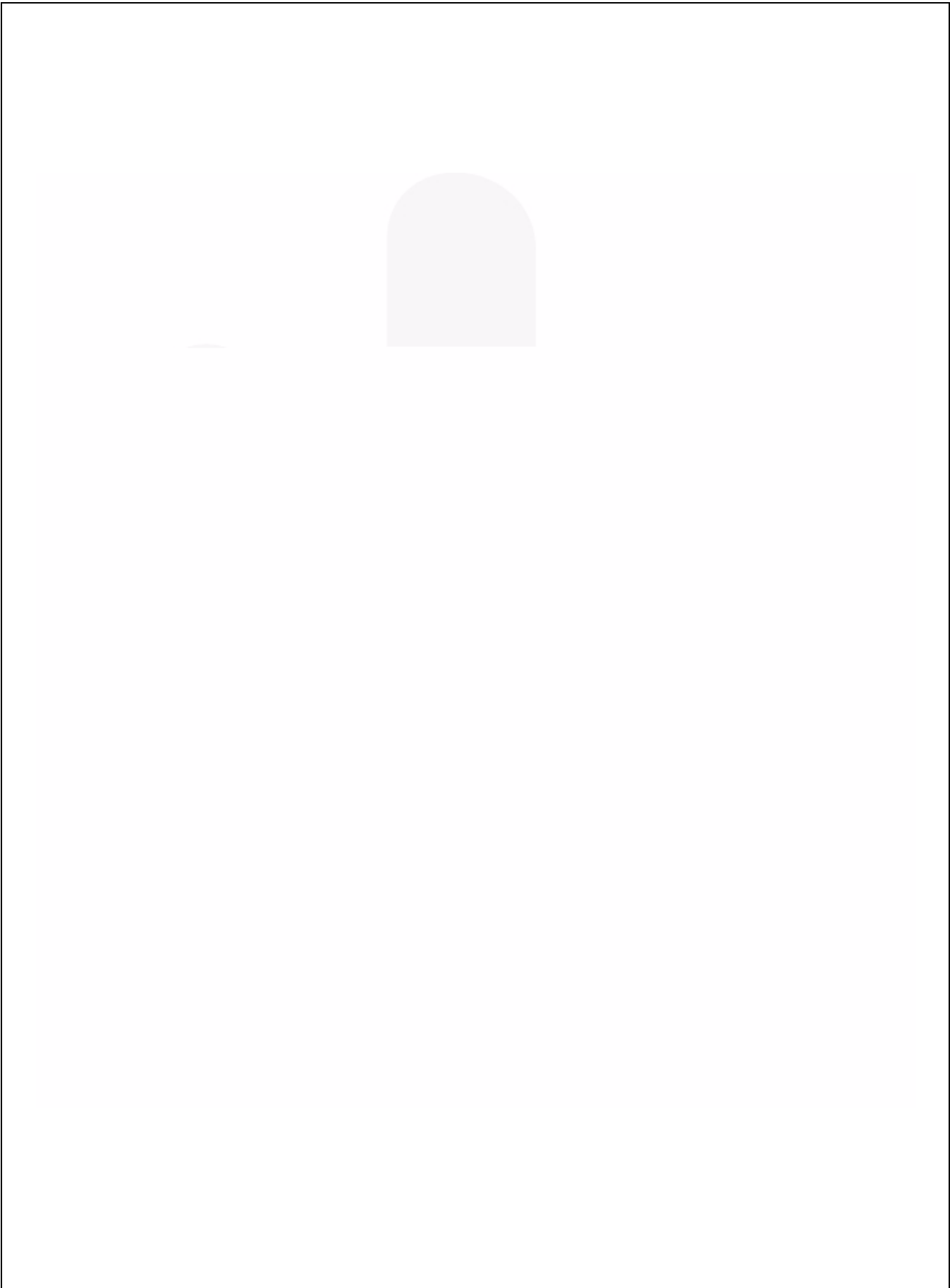
3.  $V_{CC1}$  = the  $V_{CC}$  associated with the data input under test.
4.  $V_{CC0}$  = the  $V_{CC}$  associated with the output under test.
5. Don't Care = Any valid logic level.
6. Reflects current per supply,  $V_{CCA}$  or  $V_{CCB}$ .









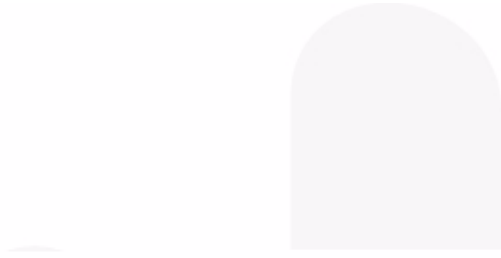


**Reel Dimensions** inches (millimeters)



Tape Size	A	B	C	D	N	W1	W2
12 mm	13.0 (330)	0.059 (1.50)	0.512 (13.00)	0.795 (20.20)	7.008 (178)	0.488 (12.4)	0.724 (18.4)

## Physical Dimensions



**Figure 5. 16-Terminal Depopulated Quad Very-Thin Flat Pack No Leads (DQFN), JEDEC MO-241 2.5 x 3.5mm**

*Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner*



**FXL4TD245 — Low-Voltage Dual-Supply 4-Bit Signal Translator with Configurable Voltage Supplies and Signal Levels and 3-STATE Outputs and Independent Direction Controls**

