



Description

The FXMA108 is a configurable dual-voltage supply translator designed for both uni-directional and bidirectional voltage translation between two logic levels. The device allows translation between voltages as high as 5.5 V to as low as 1.65 V. The A port tracks the V_{CCA} level and the B port tracks the V_{CCB} level. This allows for bi-directional voltage translation over a variety of voltage levels: 1.8 V, 2.5 V, 3.3 V, and 5.0 V.

The device remains in 3-state until both V_{CCs} reach active levels,

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FUNCTIONAL DIAGRAM

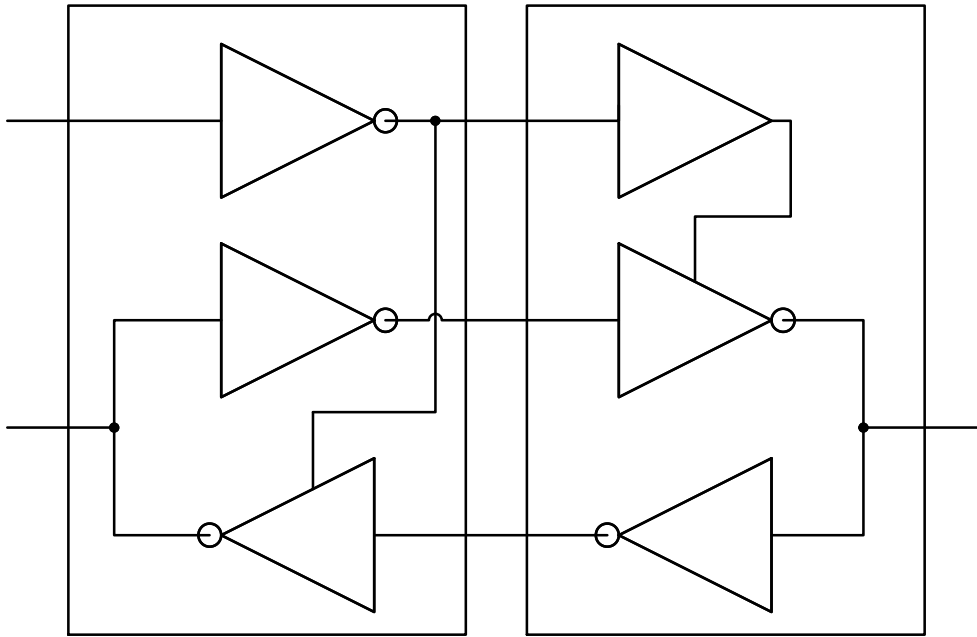


Figure 1. Block Diagram

FUNCTIONAL TABLE

Control	Outputs

FXMA108

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Condition	Min	Max	Unit
			-		
			-		
			-		

Power-

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DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CCA} (V)	V _{CCB} (V)	Min	Max	Unit
			-	-			

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AC CHARACTERISTICS

See Table 2

Symbol	Parameter	$T_A = -40^\circ\text{C to } +85^\circ\text{C}$								Unit
		$V_{CCB} = 4.5\text{ V to } 5.5\text{ V}$		$V_{CCB} = 3.0\text{ V to } 3.6\text{ V}$		$V_{CCB} = 2.3\text{ V to } 2.7\text{ V}$		$V_{CCB} = 1.65\text{ V to } 1.95\text{ V}$		
		Min	Max	Min	Max	Min	Max	Min	Max	
	--									
	--									
	-- --									μ

(see Figure 11).

AC CHARACTERISTICS

See Table 2

Symbol	Parameter	$T_A = -40^\circ\text{C to } +85^\circ\text{C}$								Unit
		$V_{CCB} = 4.5\text{ V to } 5.5\text{ V}$		$V_{CCB} = 3.0\text{ V to } 3.6\text{ V}$		$V_{CCB} = 2.3\text{ V to } 2.7\text{ V}$		$V_{CCB} = 1.65\text{ V to } 1.95\text{ V}$		
		Min	Max	Min	Max	Min	Max	Min	Max	
	--									
	--									
	-- --									μ

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MAXIMUM DATA RATE For output load, see Table 2.

V_{CCA}	Direction	$T_A = -40^{\circ}\text{C to } +85^{\circ}\text{C}$				Unit
		$V_{CCB} = 4.5\text{ V to } 5.5\text{ V}$	$V_{CCB} = 3.0\text{ V to } 3.6\text{ V}$	$V_{CCB} = 2.3\text{ V to } 2.7\text{ V}$	$V_{CCB} = 1.65\text{ V to } 1.95\text{ V}$	
		Min	Min	Min	Min	
	--					
	--					
	--					
	--					
	--					
	--					
	--					

(see Figure 10).

CAPACITANCE \pm $^{\circ}$

Symbol	Parameter	Conditions	Typical	Unit

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AC TESTS AND WAVEFORMS

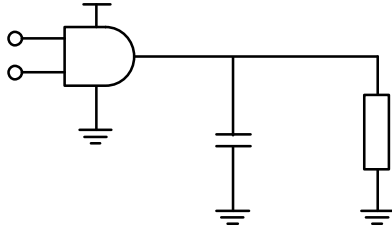


Figure 4. AC Test Circuit

Table 1. TEST CIRCUIT PARAMETERS

Test	Input Signal	Output Enable Control
		- -
		- -

Table 2. AC LOAD TABLE

V _{CCO}	C1	R1
±		Ω
±		Ω
±		Ω
±		Ω

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AC TESTS AND WAVEFORMS

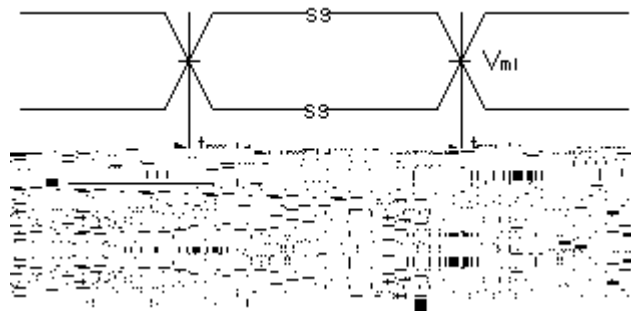


Figure 5. Waveform for Inverting and Non-Inverting Functions

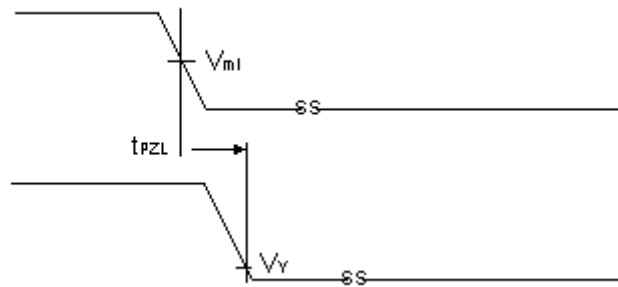


Figure 6. 3-State Output Low Enable Time for Low Voltage Logic

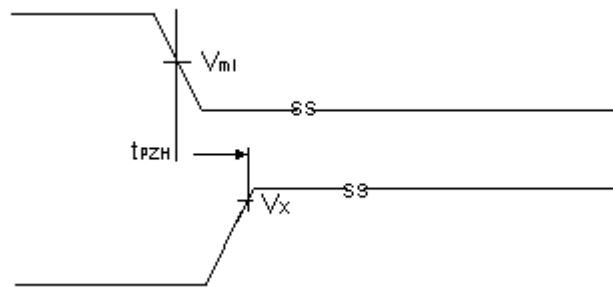


Figure 7. 3-State Output High Enable Time for Low Voltage Logic

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AC TESTS AND WAVEFORMS

Symbol	V _{CC}

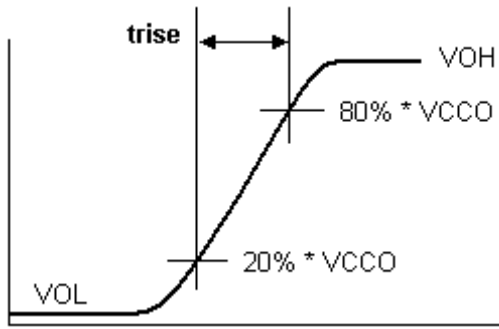


Figure 8. Active Output Rise Time

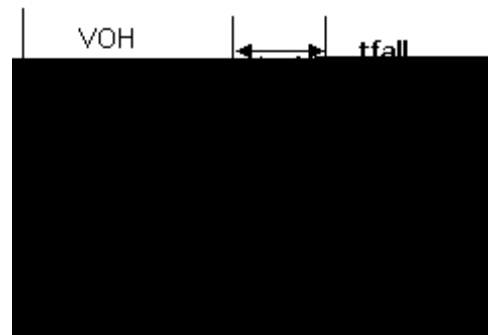


Figure 9. Active Output Fall Time

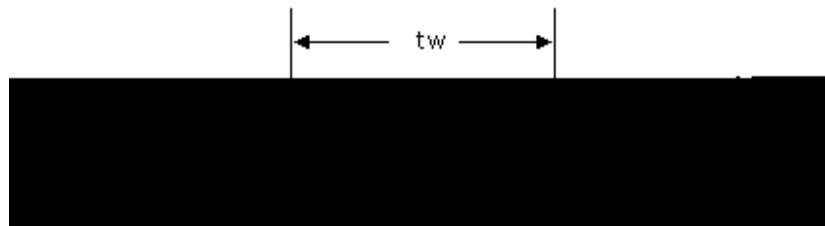


Figure 10. Maximum Data Rate

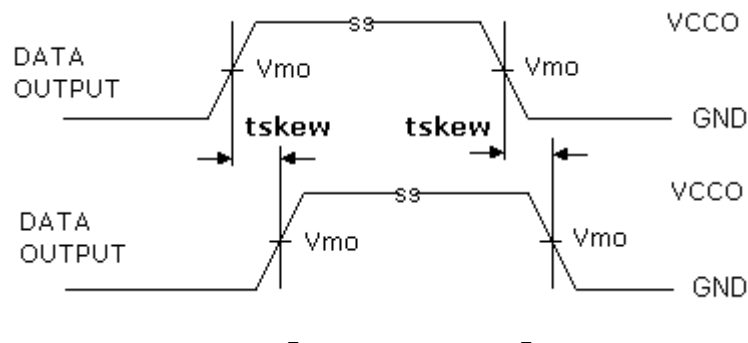


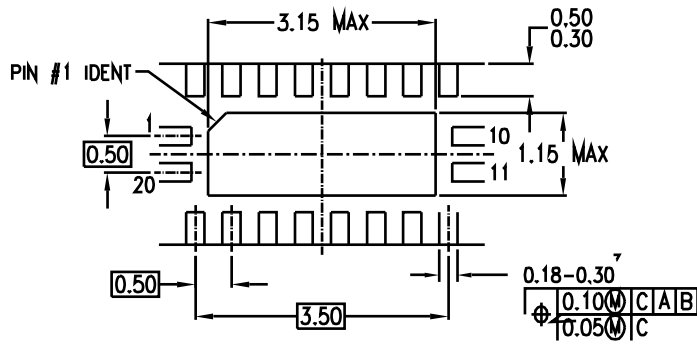
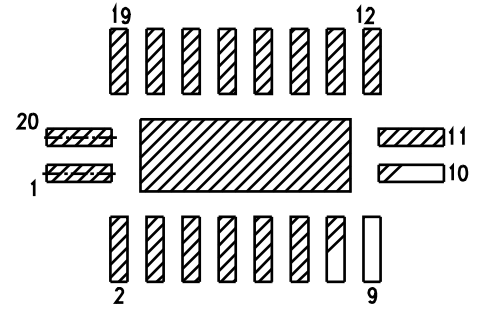
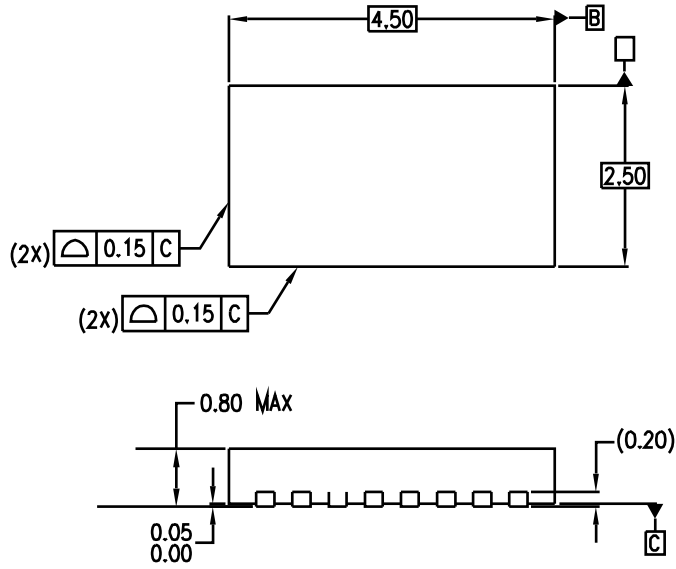
Figure 11. Output Skew Time

FXMA108

ORDERING INFORMATION

Part Number	Operating Temperature Range	Package	Shipping
	-	-	

WQFN20 4.5x2.5, 0.5P



ON AC

ASME Y14.5M, 1994

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