

FXMA2102

Dual Supply, 2-Bit Voltage Translator / Buffer / Repeater / Isolator for I²C Applications

Features

- Bi-Directional Interface between Any Two Levels: 1.65V to 5.5V
- Direction Control not Needed
- System GPIO Resources Not Required when OE Tied to V_{CCA}
- I²C 400pF Buffer / Repeater
- I²C Bus Isolation
- A/B Port V_{OL} = 175mV (Typical), V_{IL} = 150mV, I_{OL} = 6mA
- Open-Drain Inputs / Outputs
- Accommodates Standard-Mode and Fast-Mode I²C-Bus Devices
- Supports I²C Clock Stretching & Multi-Master
- Fully Configurable: Inputs and Outputs Track V_{CC}
- Non-Preferential Power-Up; Either V_{CC} May Be Powered-Up First
- Outputs Switch to 3-State if Either V_{CC} is at GND
- Tolerant Output Enable: 5V
- Packaged in 8-Terminal Leadless MicroPak™ (1.6mm x 1.6mm) and Ultrathin MLP (1.2mm x 1.4m)
- ESD Protection Exceeds:
 - 8kV HBM ESD (per JESD22-A114)
 - 2kV CDM (per JESD22-C101)

Description

The FXMA2102 is a high-performance configurable dual-voltage-supply translator for bi-directional voltage translation over a wide range of input and output voltages levels.

Intended for use as a voltage translator in applications using the I²C bus interface, the input and output voltage levels are compatible with I²C device specification voltage levels. External pull-up resistors are required.

The device is designed so that the A port tracks the V_{CCA} level and the B port tracks the V_{CCB} level. This allows for bi-directional A/B port voltage translation between any two levels from 1.65V to 5.5V. V_{CCA} can equal V_{CCB} from 1.65V to 5.5V.

Either V_{CC} can be powered-up first. Internal power-down control circuits place the device in 3-state if either V_{CC} is removed.

The two ports of the device have automatic direction sense capability. Either port may sense an input signal and transfer it as an output signal to the other port.

Ordering Information

Part Number	Operating Temperature Range	Top Mark	Package	Packing Method
FXMA2102L8X	-40 to +85°C	XN	8-Lead MicroPak™, 1.6mm Wide	5000 Units on Tape and Reel
FXMA2102UMX			8-Lead Ultrathin MLP, 1.2mm x 1.4mm	

Pin Configuration

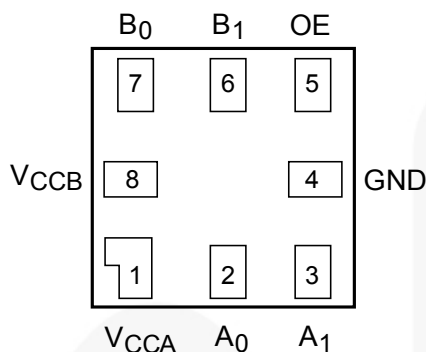


Figure 2. MicroPak™ (Top-Through View)

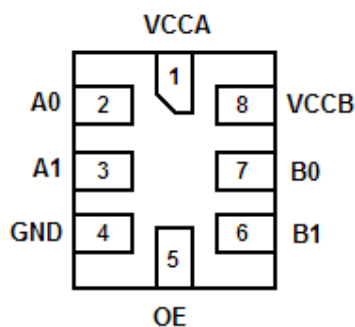


Figure 3. UMLP (Top-Through View)

Pin Definitions

Pin #	Name	Description
1	V _{CCA}	A-Side Power Supply
2, 3	A ₀ , A ₁	A-Side Inputs or 3-State Outputs
4	GND	Ground
5	OE	Output Enable Input
6, 7	B ₁ , B ₀	B-Side Inputs or 3-State Outputs
8	V _{CCB}	B-Side Power Supply

Truth Table

Control	Outputs
OE	
LOW Logic Level	
HIGH Logic Level	
	3-State
	Normal Operation

Note:

1. If the OE pin is driven LOW, the FXMA2102 is disabled and the A₀, A₁, B₀, and B₁ pins (including dynamic drivers) are forced into 3-state.



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