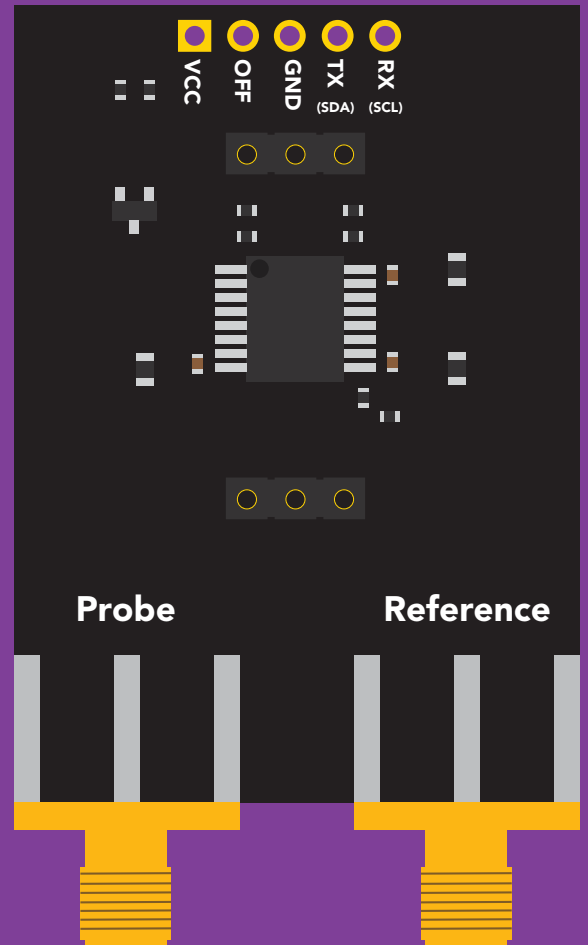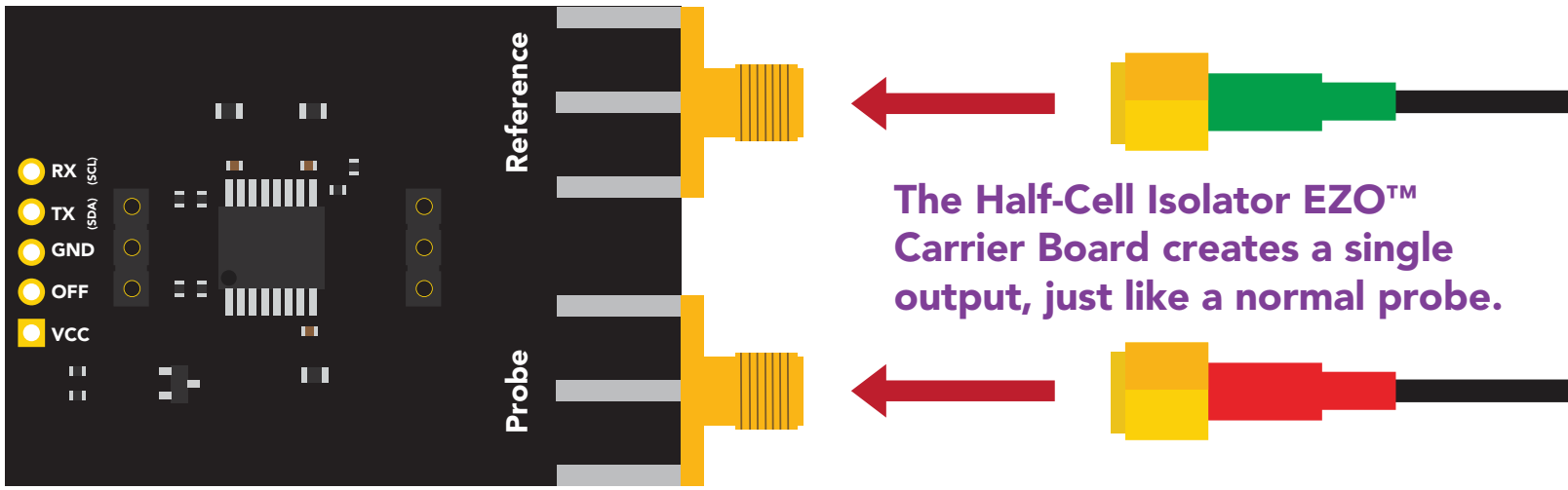# Half-Cell
Isolator

EZO™ Carrier Board

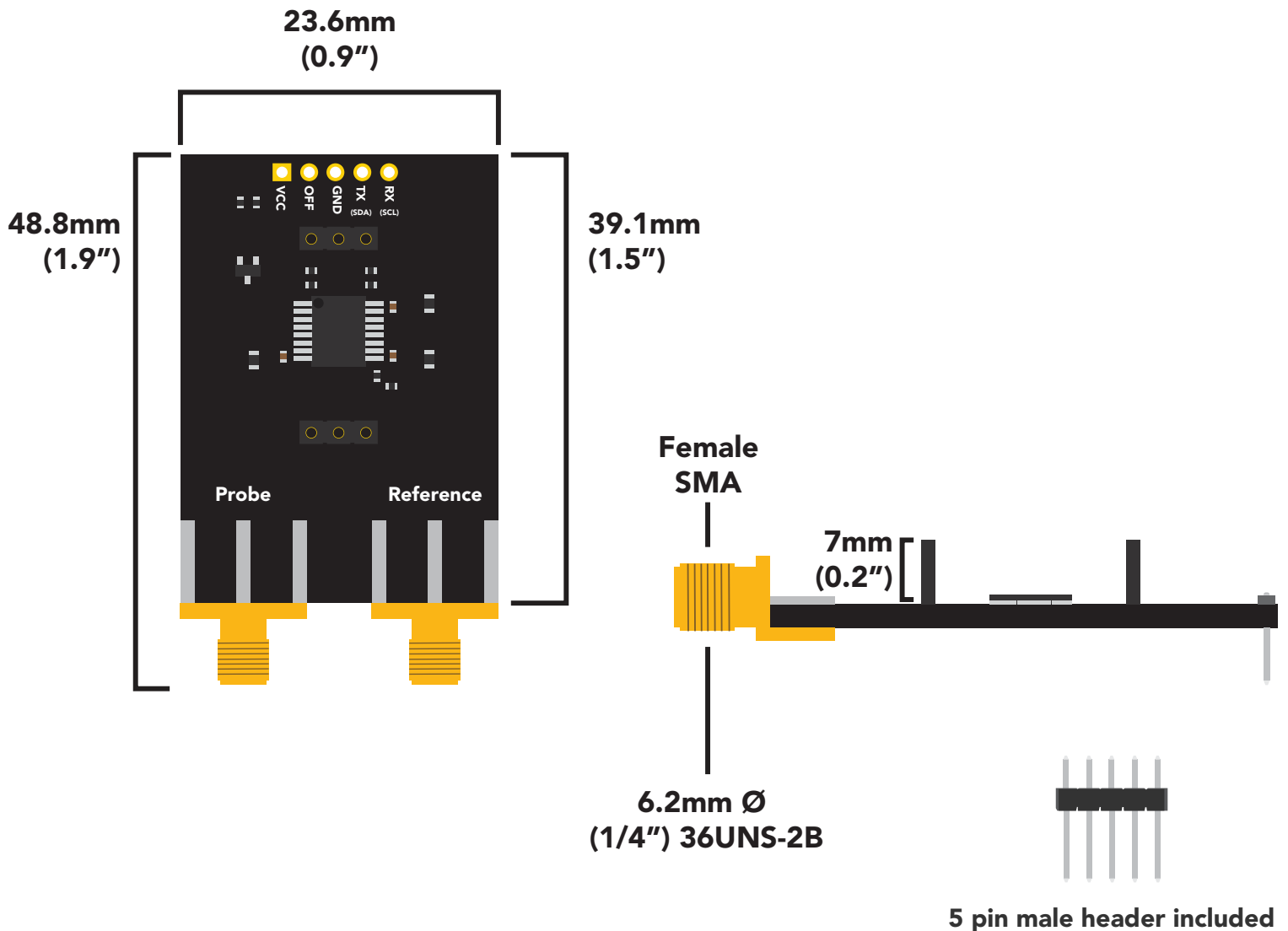Data input   **UART or I²C**

Voltage input   **3.0V – 5.0V**

Probe connector   **Female SMA**

Current consumption   5V   **15 mA**
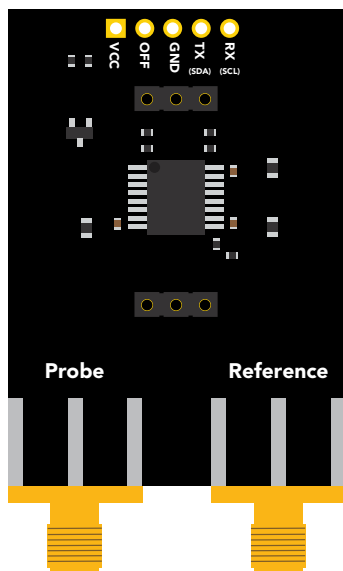   3.3V **20 mA**

Power saving mode   **3.8mA**
(OFF pin)

Probe   **Reference**

RoHS

This is an evolving document, check back for updates.

The Half-Cell Isolator EZO™ Carrier Board creates a single output, just like a normal probe.

Carrier board dimensions

23.6mm
(0.9")

48.8mm
(1.9")

39.1mm
(1.5")

Probe

Reference

Female SMA

7mm
(0.2")

6.2mm Ø
(1/4") 36UNS-2B

5 pin male header included

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Current consumption

Probe   **Reference**

i =15mA

$$+$$

i = XmA
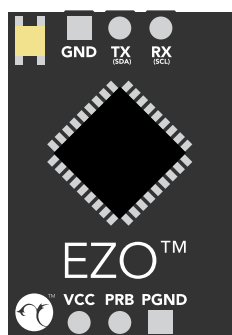
$$\neq \; 15 + XmA$$

The current consumption for the Half-Cell Isolator EZO™ Carrier Board is non-linear. The table below shows how much current will be consumed when an EZO™ circuit is connected to the Half-Cell Isolator EZO™ Carrier Board.

		5V	3.3V
Half-Cell Isolator EZO™ Carrier Board	No Load	15mA	20mA
	EZO™ pH	**57mA**	**87mA**
	EZO™ ORP	**58mA**	**84mA**

Setting the OFF pin to low will turn off the Half-Cell Isolator EZO™ Carrier Board, along with the connected EZO™ circuit. The current consumption will be reduced to **3.8 mA**.
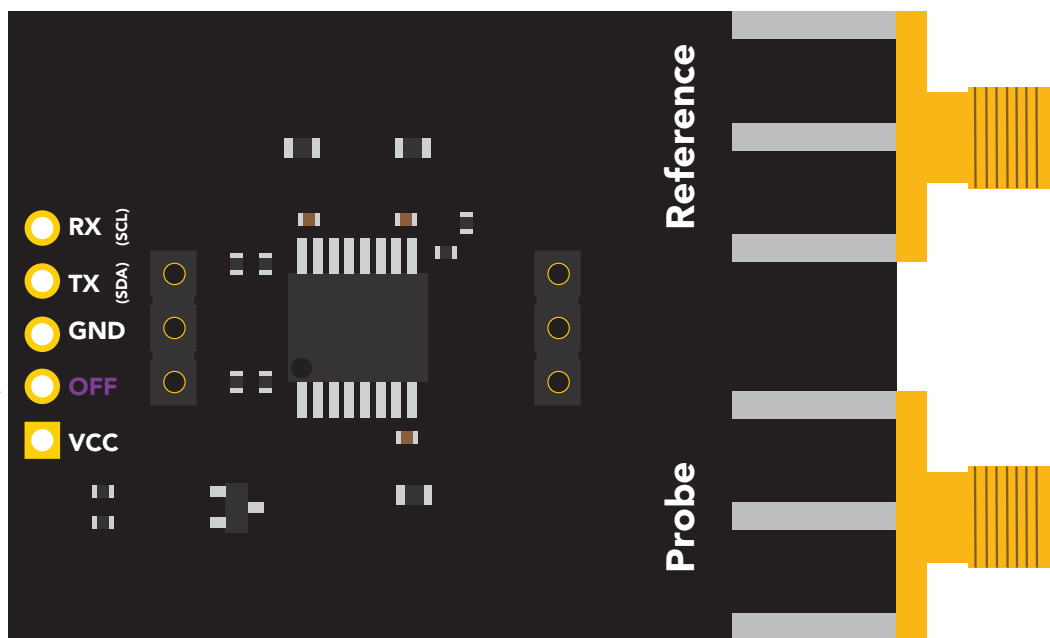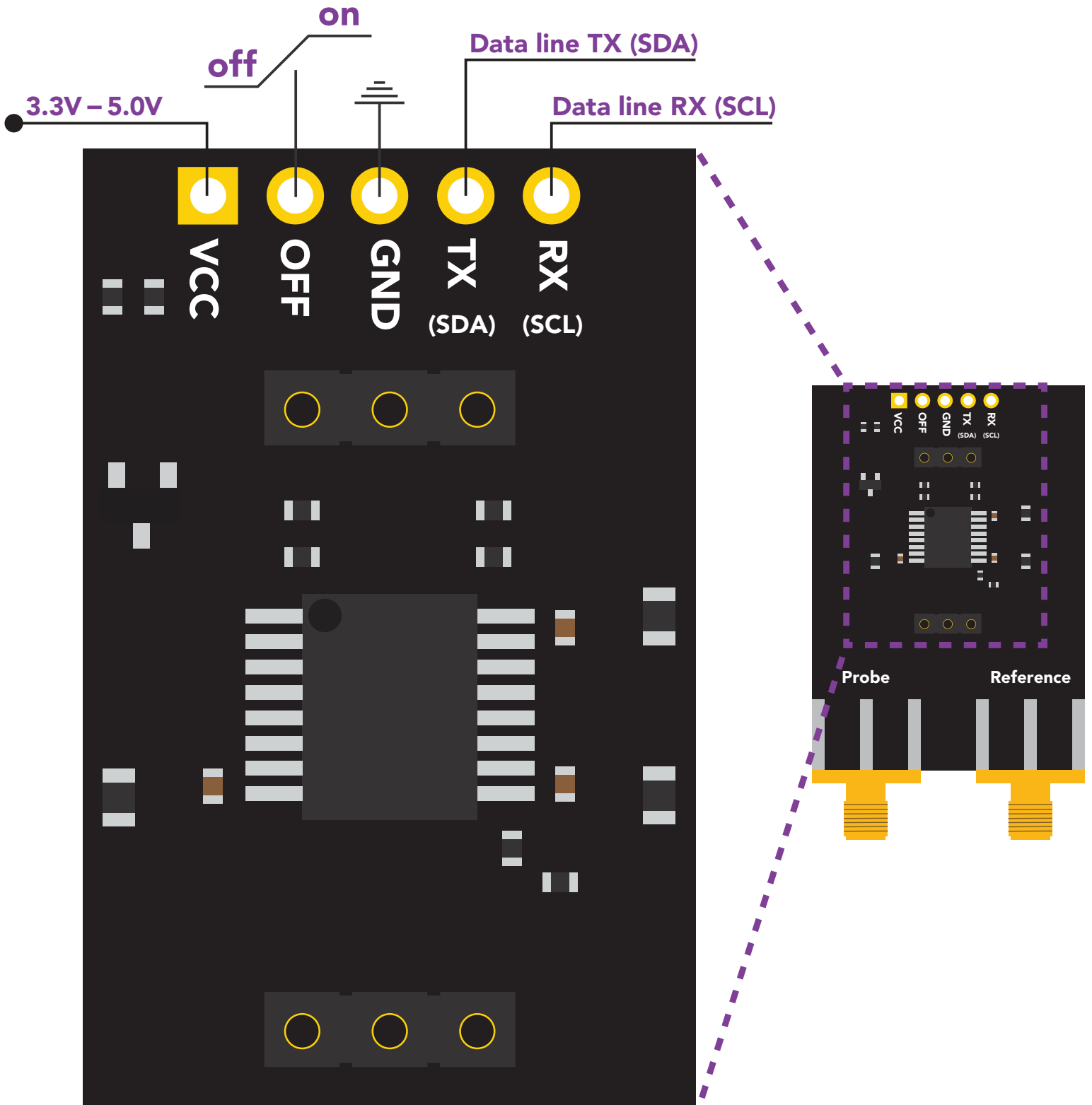
Pin out

Setting the OFF pin to low will turn off the Half-Cell Isolator EZO™ Carrier Board, along with the connected EZO™ circuit. The current consumption will be reduced to 3.8mA. **If the OFF pin is not used, leave it unconnected or pull to VCC.**

3.3V – 5.0V

on
off

VCC OFF GND TX (SDA) RX (SCL)

Data line TX (SDA)
Data line RX (SCL)

Probe   Reference

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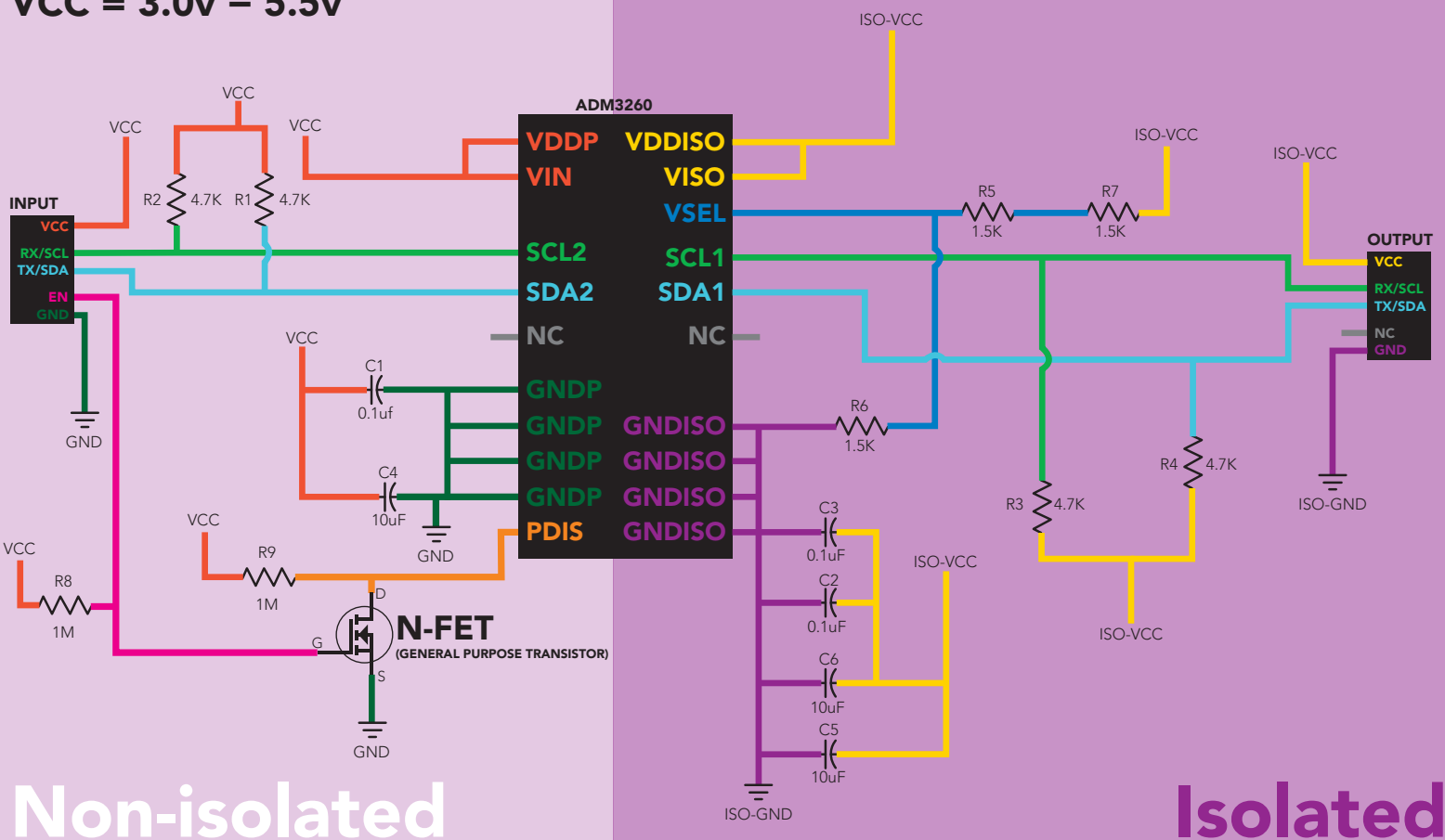AtlasScientific™
Environmental Robotics

Data isolation

This schematic shows exactly how we isolate data and power using the and a few passive components. The ADM3260 can output isolated power up to 150 mW and incorporates two bidirectional data channels.

This technology works by using tiny transformers to induce the voltage across an air gap. PCB layout requires special attention for EMI/EMC and RF Control, having proper ground planes and keeping the capacitors as close to the chip as possible are crucial for proper performance. The two data channels have a 4.7kΩ pull up resistor on both the isolated and non-isolated lines (R1, R2, R3, and R4) The output voltage is set using a voltage divider (R5, R6, and R7) this produces a voltage of 3.9V regardless of your input voltage.

Isolated ground is different from non-isolated ground, these two lines should not be connected together.

VCC = 3.0v – 5.5v

ADM3260

| Non-isolated | | Isolated |

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r 0.3