# Current Sink or Swim

## Specifications

| | |
|---|---|
| Supply Voltage | 5V |
| Load Current – Max | 3A |
| Load Voltage – Max | 20V |

The Current Sink or Swim (CSoS) project is a project from Contextual Electronics that showcases the ability to control current and provide a workbench tool where a constant load is required. The device can be configured to be self-powered or powered by an external source.

# Test Results

## Constant current – Self powered configuration

To test the ability of the unit to maintain the load current over a range of voltages.

Vreg On board regulator output voltage
VR203 Voltage across the 0.1Ω sense resistor.

**Maximim Load @ 5V**

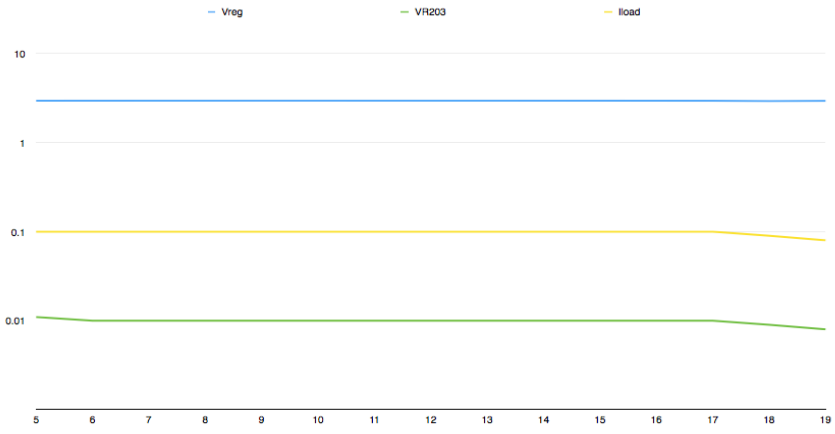
| | | |
|---|---|---|
| **IMax** | 3.09 | A |
| **VR203** | 0.357 | V |

**Constant and Initial Parameters**

| Parameter | Value | Unit |
|---|---|---|
| **Initial Vbatt** | 5 | V |
| **Initial Iload** | 100 | mA |

**CSOS Performance Fixed Load**

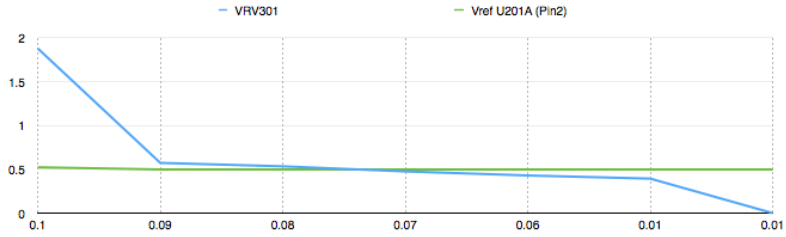
| Vbat | Vreg | VR203 | Iload |
|---|---|---|---|
| 5 | 2.959 | 0.011 | 0.1 |
| 6 | 2.96 | 0.01 | 0.1 |
| 7 | 2.962 | 0.01 | 0.1 |
| 8 | 2.962 | 0.01 | 0.1 |
| 9 | 2.964 | 0.01 | 0.1 |
| 10 | 2.964 | 0.01 | 0.1 |
| 11 | 2.963 | 0.01 | 0.1 |
| 12 | 2.962 | 0.01 | 0.1 |
| 13 | 2.962 | 0.01 | 0.1 |
| 14 | 2.961 | 0.01 | 0.1 |
| 15 | 2.960 | 0.01 | 0.1 |
| 16 | 2.958 | 0.01 | 0.1 |
| 17 | 2.955 | 0.01 | 0.1 |
| 18 | 2.926 | 0.009 | 0.09 |
| 19 | 2.948 | 0.008 | 0.08 |



# Voltage control cut off – Self powered configuration

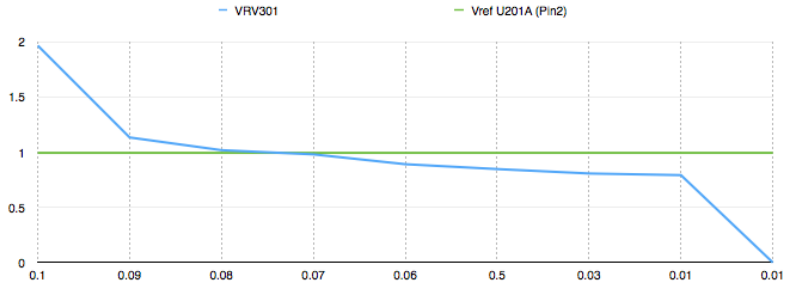
Voltage Control @ 5Vbatt.

| Iload | VRV301 | Vref U201A (Pin2) |
|---|---|---|
| 0.1 | 1.875 | 0.522 |
| 0.09 | 0.572 | 0.497 |
| 0.08 | 0.533 | 0.497 |
| 0.07 | 0.475 | 0.497 |
| 0.06 | 0.429 | 0.497 |
| 0.01 | 0.393 | 0.497 |
| 0.01 | 0 | 0.497 |



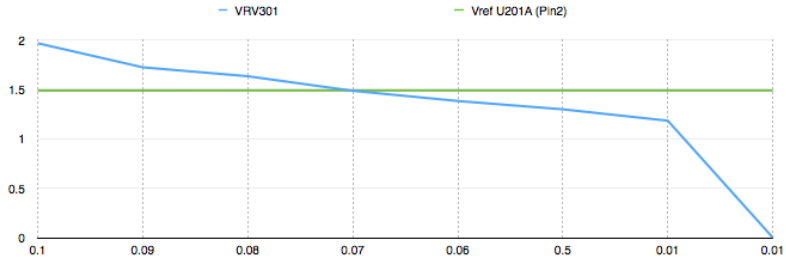

Voltage Control @ 10Vbatt

| Iload | VRV301 | Vref U201A (Pin2) |
|---|---|---|
| 0.1 | 1.964 | 0.992 |
| 0.09 | 1.132 | 0.992 |
| 0.08 | 1.017 | 0.992 |
| 0.07 | 0.979 | 0.992 |
| 0.06 | 0.890 | 0.992 |
| 0.5 | 0.846 | 0.992 |
| 0.03 | 0.806 | 0.992 |
| 0.01 | 0.791 | 0.992 |
| 0.01 | 0 | 0.992 |




Voltage Control @ 15Vbatt

| Iload | VRV301 | Vref U201A (Pin2) |
|---|---|---|
| 0.1 | 1.963 | 1.486 |
| 0.09 | 1.72 | 1.486 |
| 0.08 | 1.630 | 1.487 |
| 0.07 | 1.483 | 1.487 |
| 0.06 | 1.38 | 1.487 |
| 0.5 | 1.296 | 1.487 |
| 0.01 | 1.181 | 1.487 |
| 0.01 | 0 | 1.487 |



# Self powered, External Powered configuration

Jumper Connector P101

| | |
|---|---|
| 1 – 2 | External Powered |
| 2 – 3 | Self Powered |