

## UCD3138 1/8th Brick Test Report

### 1.1 Transient Load

1A~11A step load, 1A/us slew rate, **without oversampling**

320mV overshoot, 346mV undershoot. Recover time: overshoot: 220us; undershoot: 410us



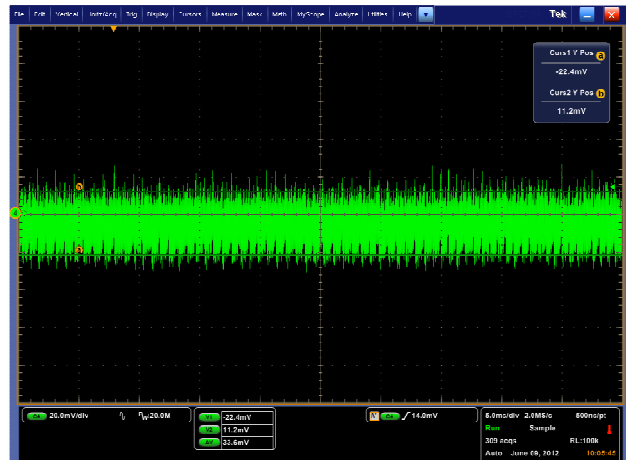
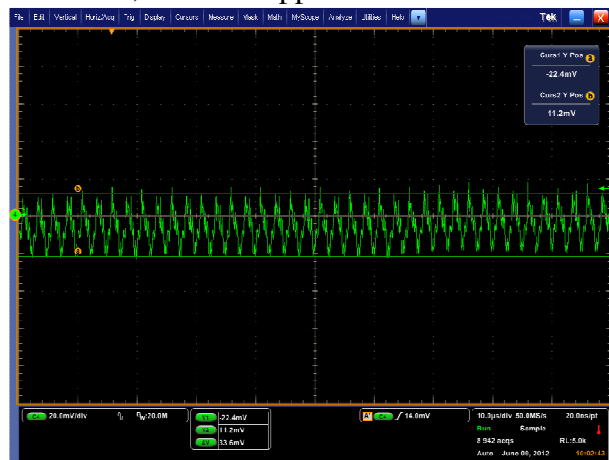
1A~11A step load, 1A/us slew rate, **x2 oversampling**

320mV overshoot, 346mV undershoot. Recover time: overshoot: 170us; undershoot: 330us

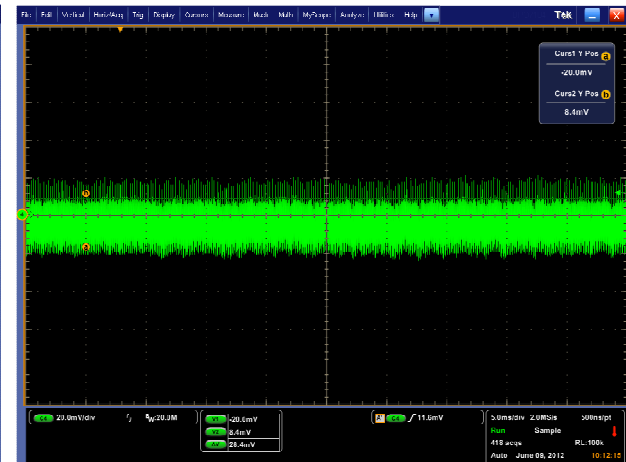


## 1.2 Output Ripple

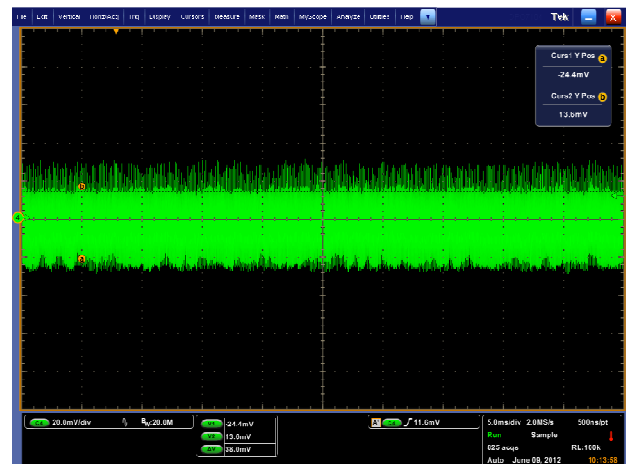
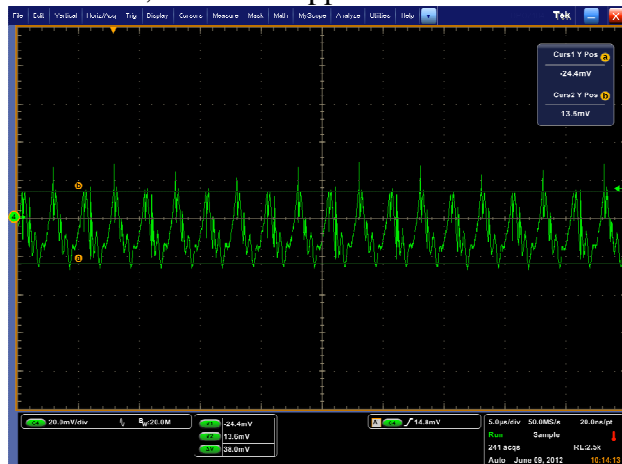
$V_{in}=48V$ ,  $I_o=0A$  /Ripple=33.6mV



$V_{in}=48V$ ,  $I_o=10A$  /Ripple=28mV



$V_{in}=48V$ ,  $I_o=15A$  /Ripple=38mV



### 1.3 Soft start

Soft start at 48V input, 0A load, with syncFETs on from the beginning

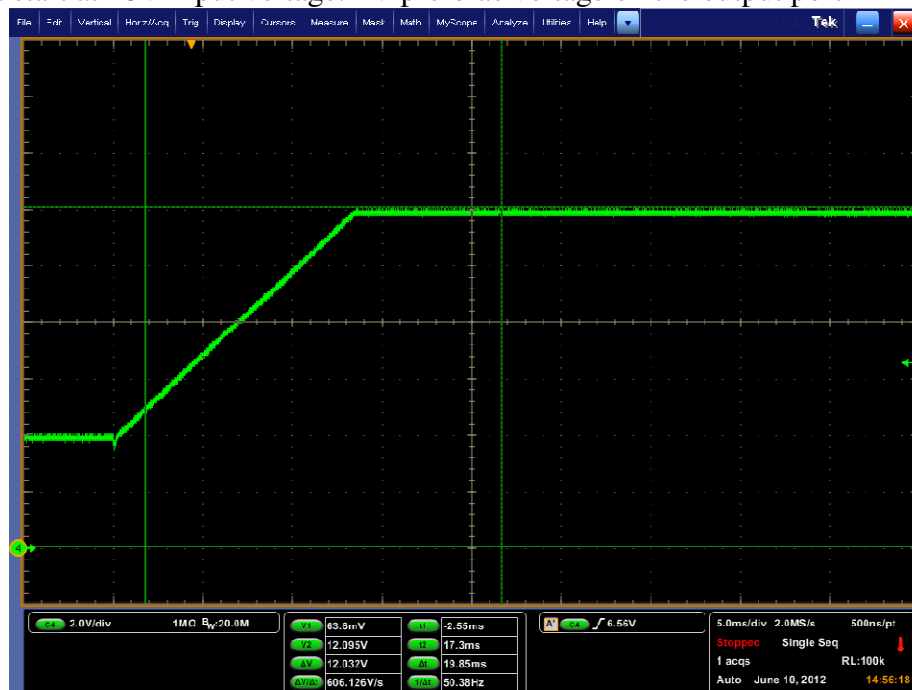


Soft start at 48V input, 10A load, with syncFETs on from the beginning

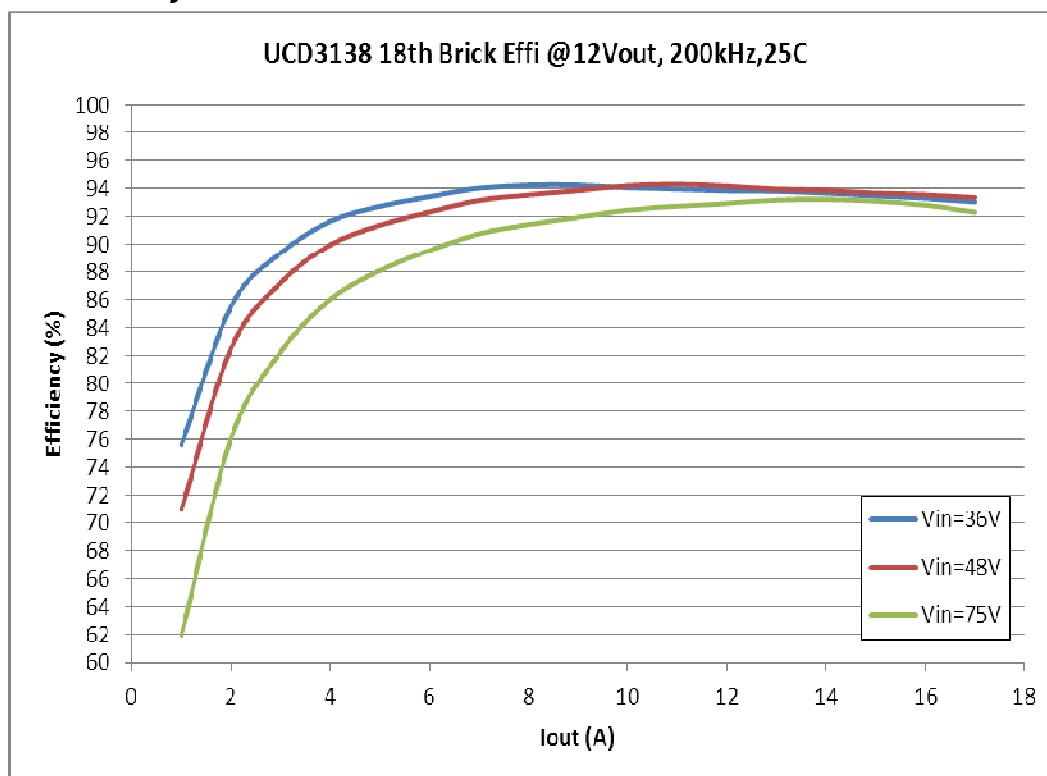


## 1.4 Pre-bias Start-up

Pre-bias soft start at 48V input voltage. 4V pre-bias voltage on the output port

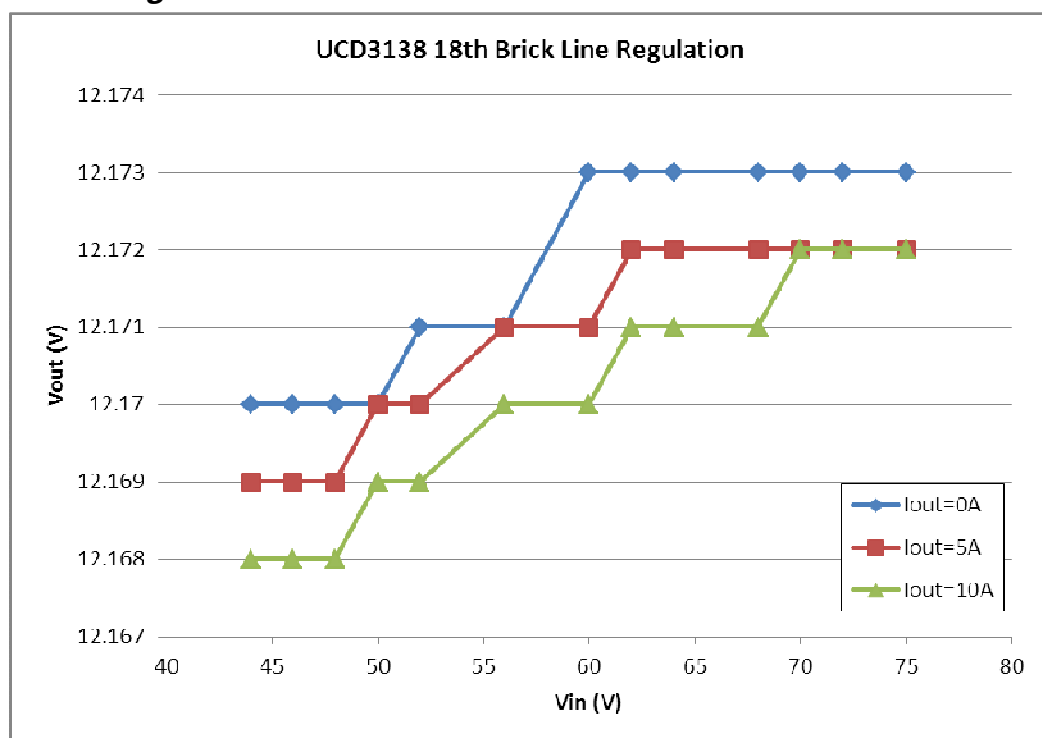


## 1.5 Efficiency

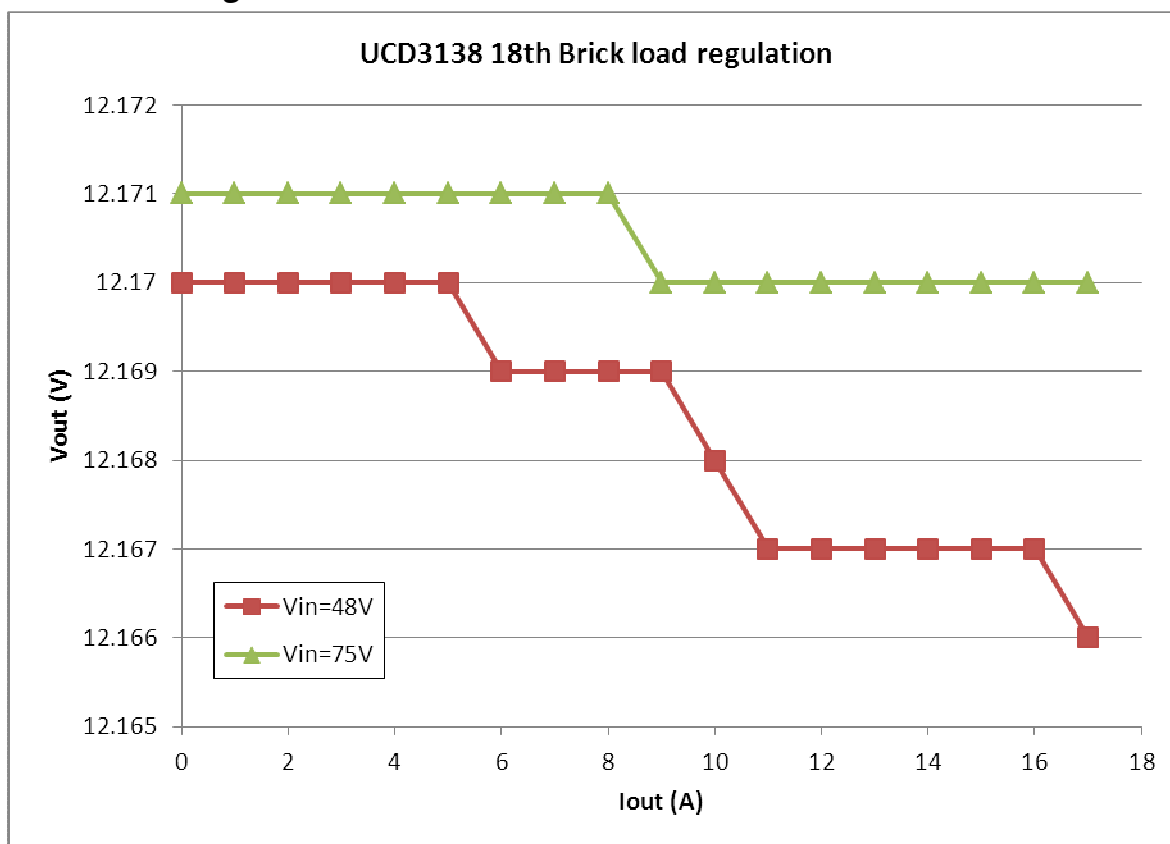


94.3% @ 11A load

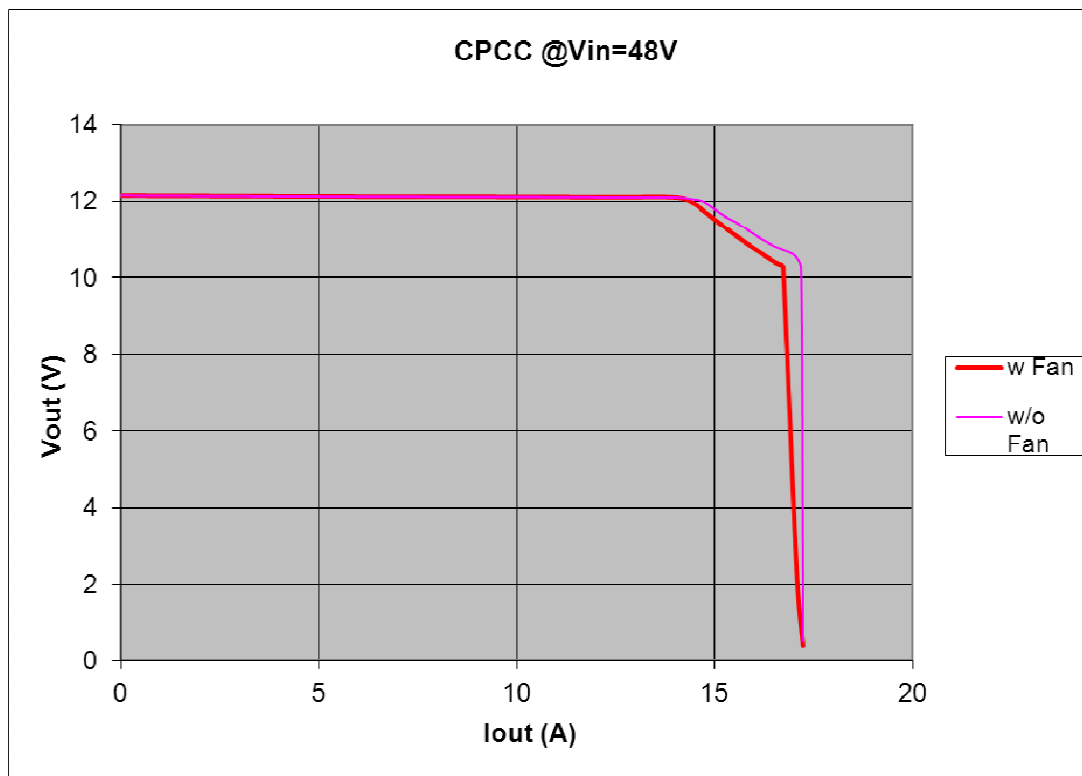
## 1.6 Line Regulation



## 1.7 Load Regulation



## 1.8 Constant Power Constant Current (CPCC)



**Figure 1 Constant Power Constant Current Test**

### **1.9 Surge Test**

Load 1A, Vin from 40V~60V, Vin slew rate 30.4V/2.36us.

KP\_COEFF\_1 = 8000, KP\_COEFF\_2 = 10000

Vout variation 760mV, recover time 80us

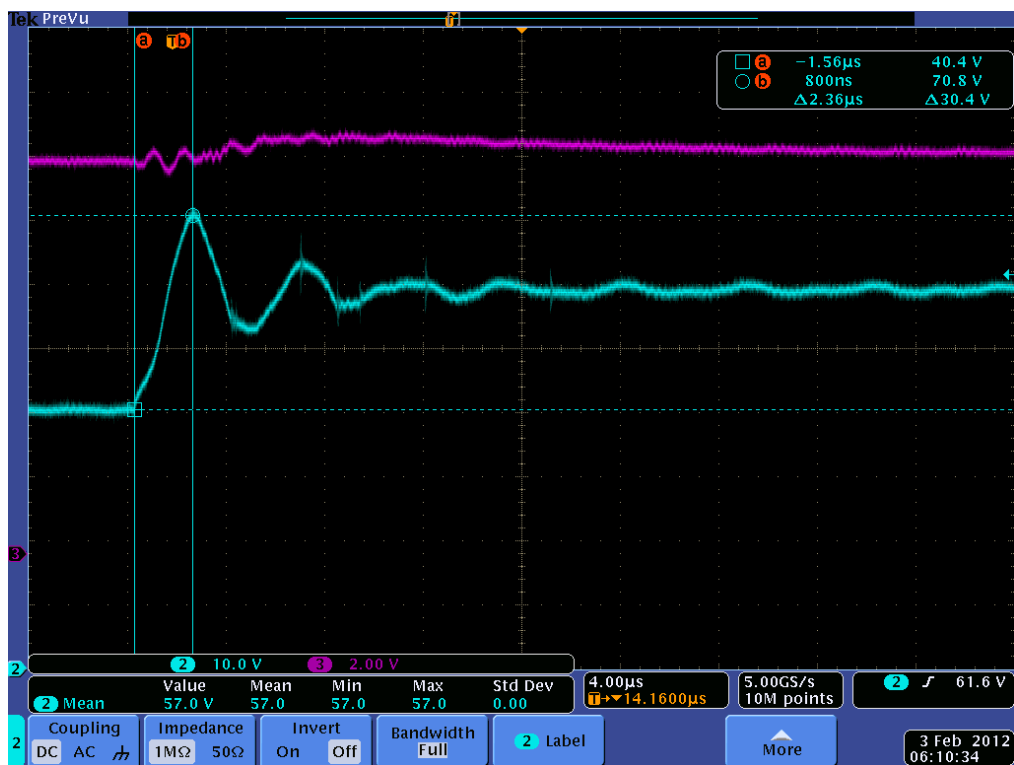
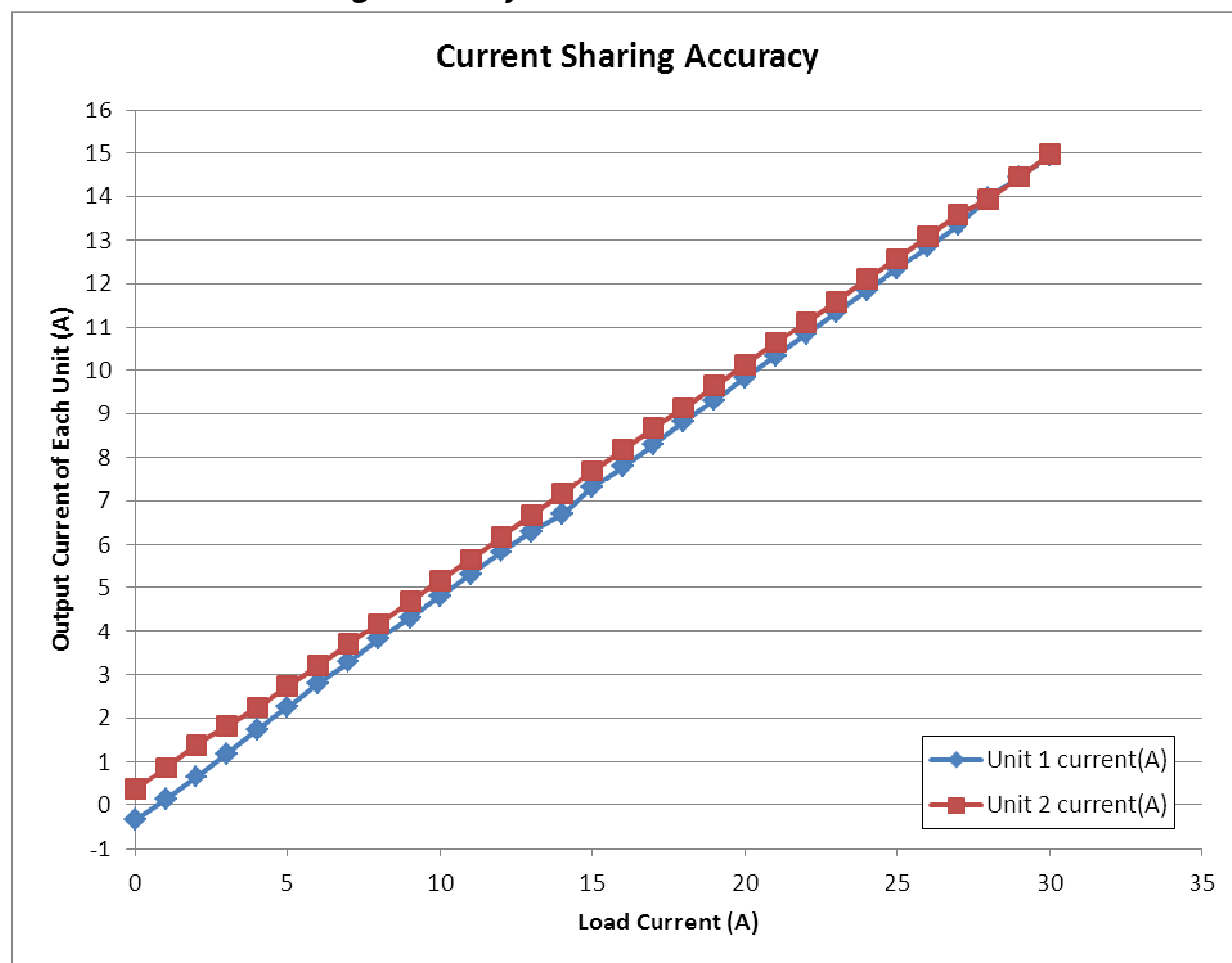


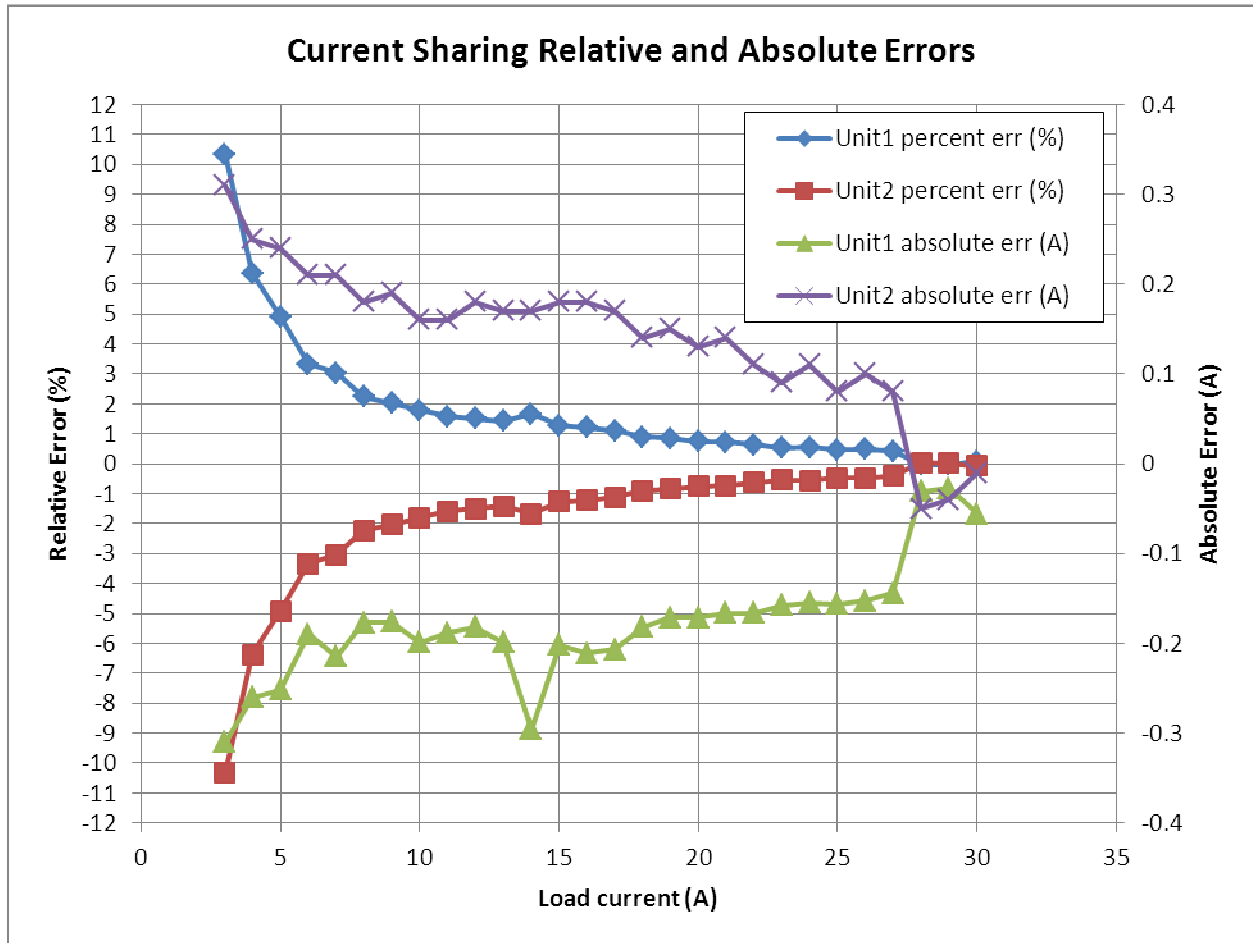
Figure 2 Surge Test



### 1.10 Current sharing Accuracy



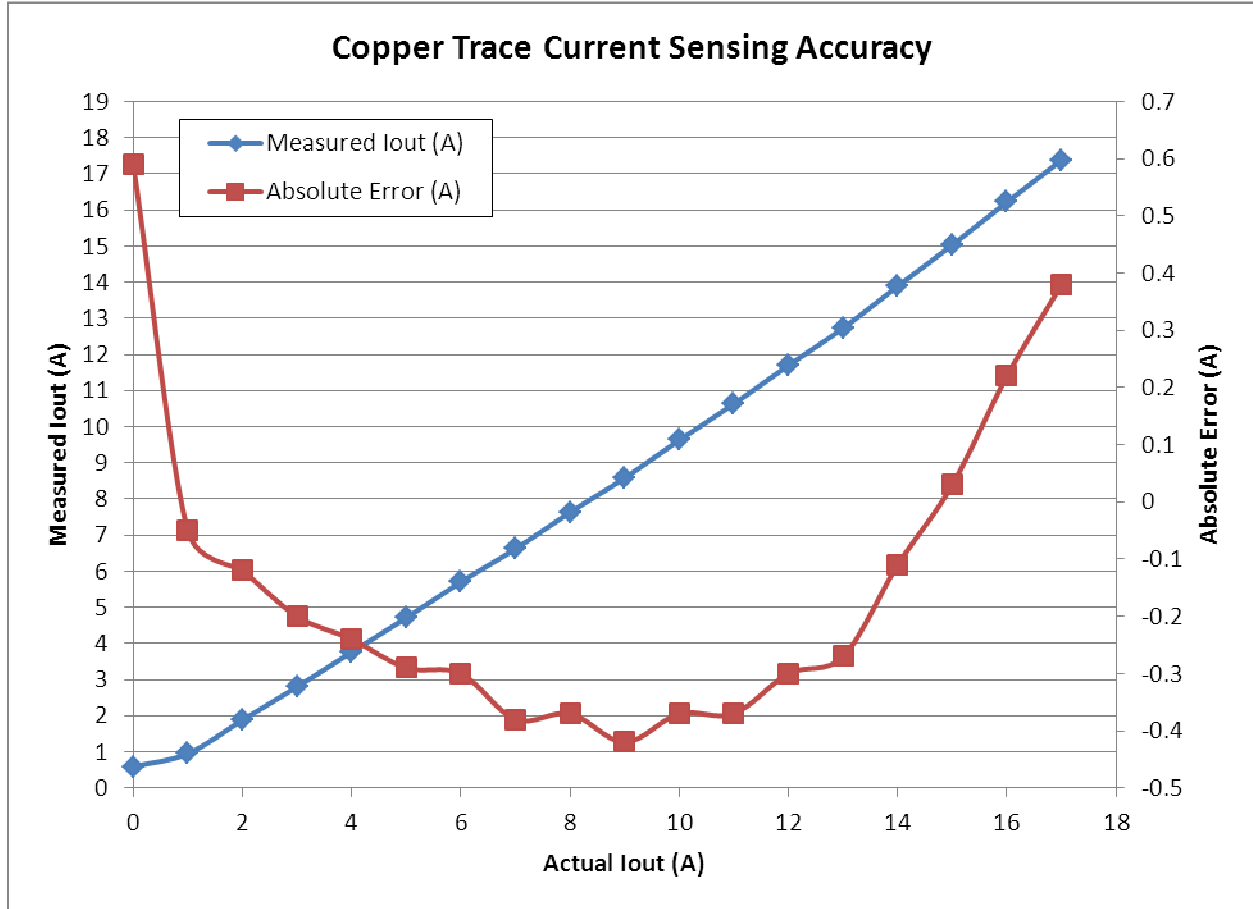
**Figure 3 Current Sharing Accuracy**



**Figure 4 Current Sharing Relative and Absolute Errors**

### **1.11 Copper Trace Current Sensing Accuracy**

The measured copper trace current sensing absolute error is -0.4A~0.6A. (Tested with temperature compensation only.)



**Figure 5 Copper Trace Current Sensing Accuracy**



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