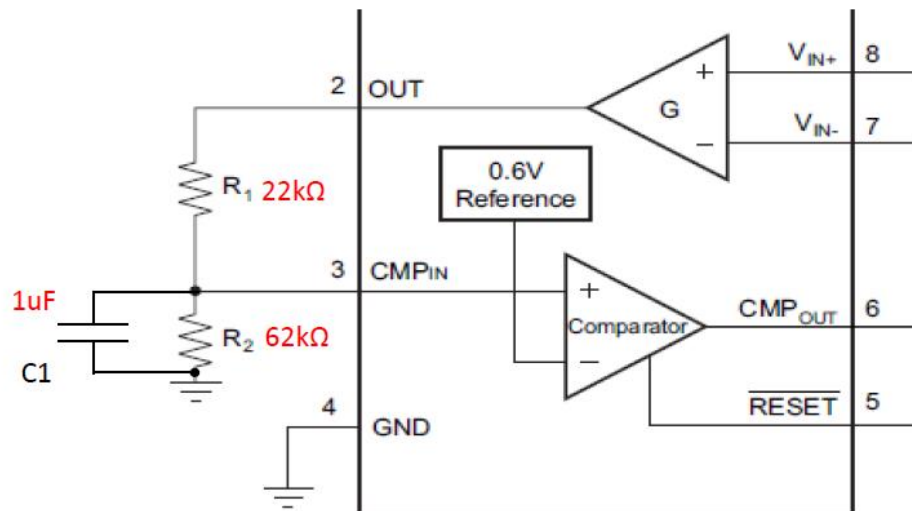


## Question about INA200

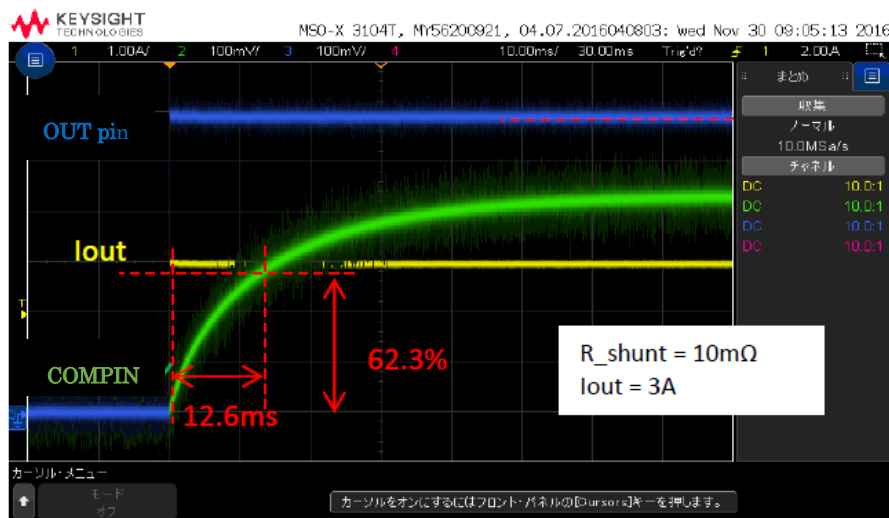
### 1. Current situation

When a capacitor is add to CMPIN pin, rising time is not estimated value.



The rising time is estimated CR constant of  $(R1//R2) \times C1$ , but actual is faster.

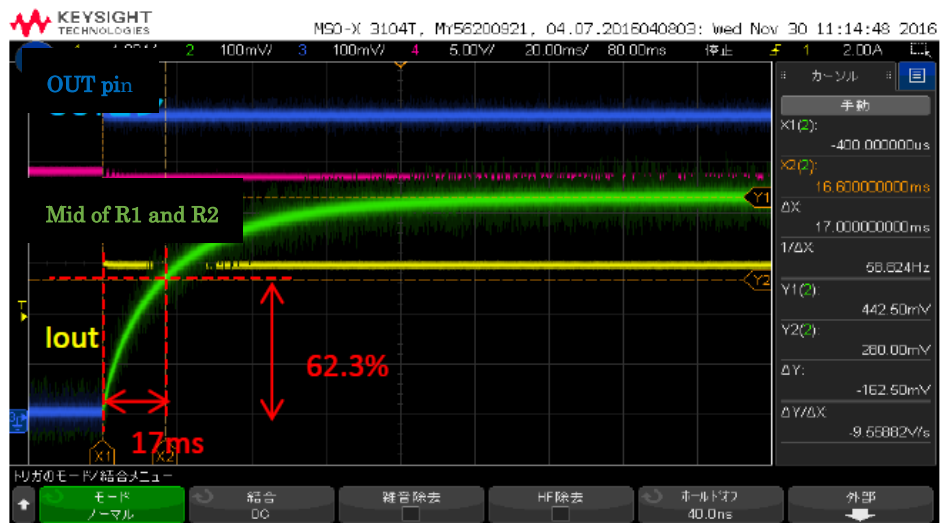
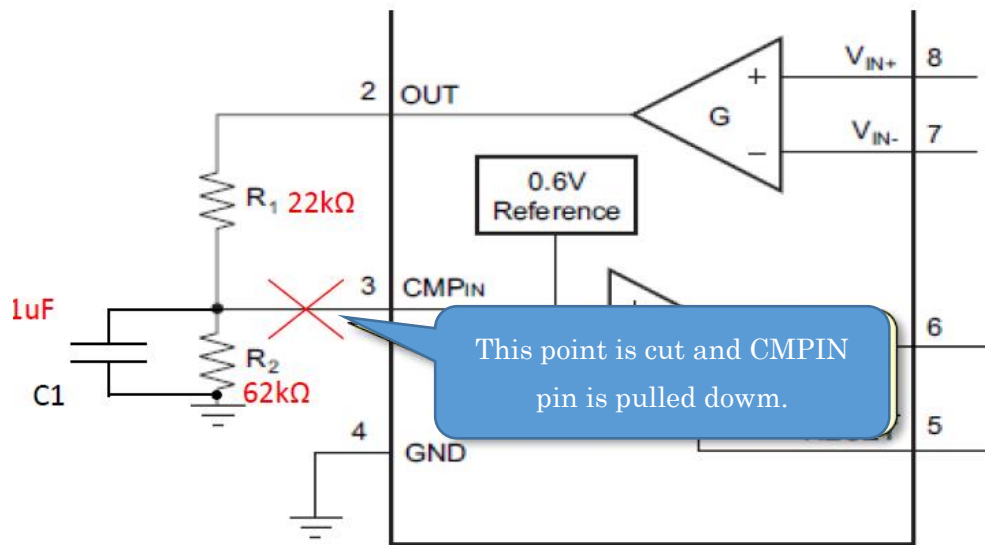
Calculation is  $(22\text{kohm} // 62\text{kohm}) \times 1\mu\text{F} = 16.2\text{ms}$ , an actual value is 12.6ms



It can't be explained even if they are considered deviation (+/- 10%) of capacitor and resistor.

$$16.2\text{ms} \times 0.9 = 14.6\text{ms} > 12.6\text{ms}$$

If it is disconnected between CMPin and C1, rising time is worked out as expected.



The current may be output as source current, the spec of bias current is small enough than the current through divide resistor.

The current through divide resistor =  $600\text{mV} / (22\text{kohm} + 64\text{kohm}) = 7.1\mu\text{A}$

The bias current of CMPIN = 15nA(described in datasheet)

| INPUT BIAS CURRENT (2)                                    |                                 |       |       |
|-----------------------------------------------------------|---------------------------------|-------|-------|
| Input bias current, VMP <sub>in</sub> PIN                 |                                 | 0.005 | 10 nA |
| Input bias current, VMP <sub>in</sub> PIN, vs temperature | T <sub>A</sub> = -40°C to 125°C |       | 15 nA |

## 2. Question

Is there any input current except input bias current. (For example, constant current for hysteresis.)

If so, could you advise me typ and max value.

If not, what reason is considerable about this phenomenon?