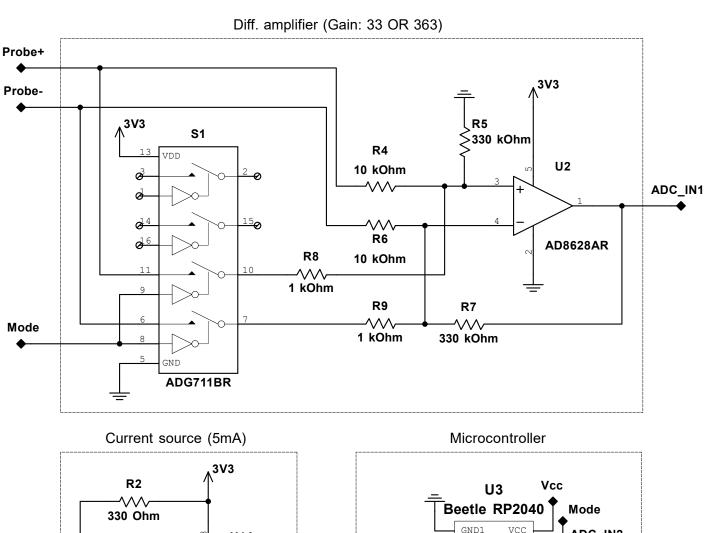
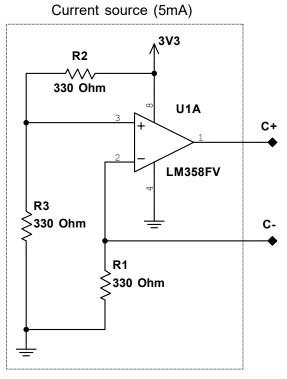
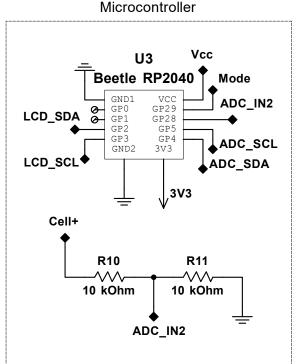
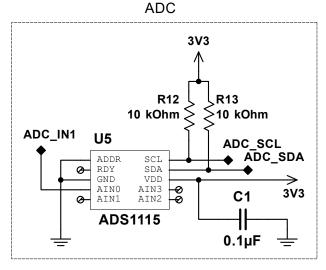
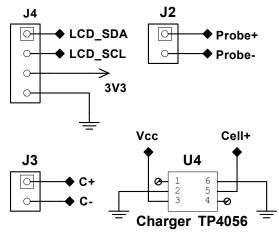
**Precision ohmmeter** 





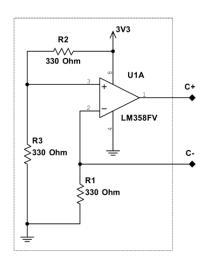




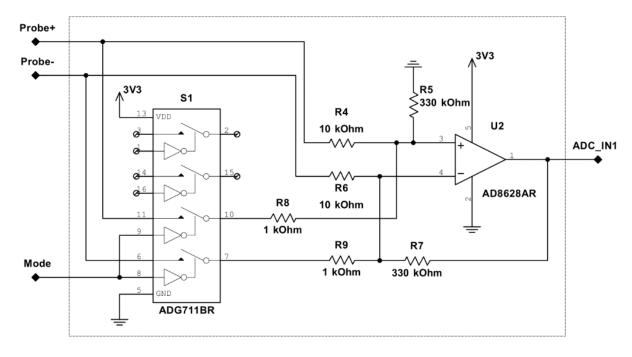


## **Current source**

$$V_{REF} = \frac{R3}{R2 + R3} \cdot 3.3V = \frac{330\Omega}{330\Omega + 330\Omega} \cdot 3.3V = 1.65V$$
$$I = \frac{V_{REF}}{R1} = \frac{1.65V}{330\Omega} = 0.005A = 5mA$$



## Differential amplifier



$$R5 = R7$$
,  $R4 = R6$ ,  $R8 = R9$   
 $ADC\_IN1 = (Probe^+ - Probe^-) \cdot gain$ 

## Mode 1

$$gain = \frac{R5}{R4} = \frac{330k\Omega}{10k\Omega} = 33 V/V$$

## Mode 2

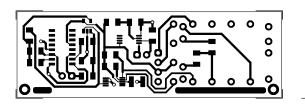
$$gain = \frac{R5}{R4 \cdot R6} \cdot (R4 + R6) =$$

$$= \frac{330k\Omega}{10k\Omega \cdot 1k\Omega} \cdot (10k\Omega + 1k\Omega) =$$

$$= 363 V/V$$

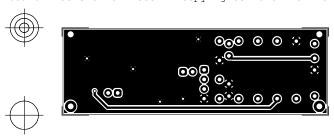
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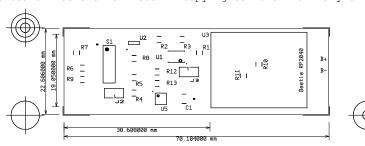




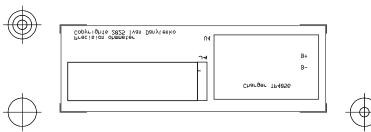
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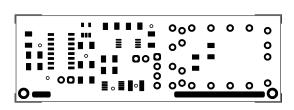


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