

Instrumentation amplifier, optimized for temperature control applications

Capacitor_SMD:C_0805_2012Metric_Pad1.15x1.40mm_HandSolder

5V

100n

C26

INA330 U9

V+

V+

EN

Va

8

1.0V_REFD

2

3

10

1

I1

I2

GND

4

GND

I_BIAS_TD

I_BIAS_R

7

Io

C_filter1

R_gain1

2k_pre

2.5V_REF

This is a high-precision, low thermal coefficient resistor

Output to 10k thermistor and set resistor

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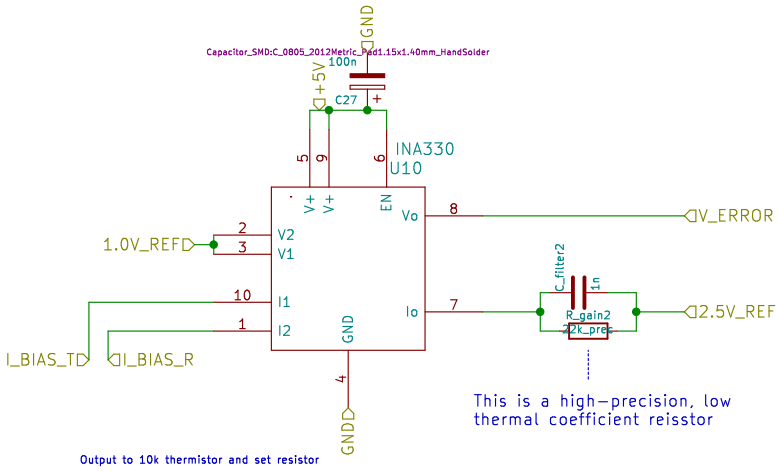
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Instrumentation amplifier, optimized for temperature control applications



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Components:

- ATMEGA328P (IC1)
- USB interface (U12, FT232RL)
- ISO7242 (U11)
- USB connector (P4)
- Programming connector (P5)
- Crystal oscillator (X1, TSX-3225)
- Capacitors (C28, C29, C30, C31, C32, C33, C34)
- Resistors (R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100)

Connections:

- ATMEGA328P: VCC to 5V, GND to GND, RESET to RESET, RX to RX, TX to TX, D0 to D0, D1 to D1, D2 to D2, D3 to D3, D4 to D4, D5 to D5, D6 to D6, D7 to D7, D8 to D8, D9 to D9, D10 to D10, D11 to D11, D12 to D12, D13 to D13, D14 to D14, D15 to D15, D16 to D16, D17 to D17, D18 to D18, D19 to D19, D20 to D20, D21 to D21, D22 to D22, D23 to D23, D24 to D24, D25 to D25, D26 to D26, D27 to D27, D28 to D28, D29 to D29, D30 to D30, D31 to D31, D32 to D32, D33 to D33, D34 to D34, D35 to D35, D36 to D36, D37 to D37, D38 to D38, D39 to D39, D40 to D40, D41 to D41, D42 to D42, D43 to D43, D44 to D44, D45 to D45, D46 to D46, D47 to D47, D48 to D48, D49 to D49, D50 to D50, D51 to D51, D52 to D52, D53 to D53, D54 to D54, D55 to D55, D56 to D56, D57 to D57, D58 to D58, D59 to D59, D60 to D60, D61 to D61, D62 to D62, D63 to D63, D64 to D64, D65 to D65, D66 to D66, D67 to D67, D68 to D68, D69 to D69, D70 to D70, D71 to D71, D72 to D72, D73 to D73, D74 to D74, D75 to D75, D76 to D76, D77 to D77, D78 to D78, D79 to D79, D80 to D80, D81 to D81, D82 to D82, D83 to D83, D84 to D84, D85 to D85, D86 to D86, D87 to D87, D88 to D88, D89 to D89, D90 to D90, D91 to D91, D92 to D92, D93 to D93, D94 to D94, D95 to D95, D96 to D96, D97 to D97, D98 to D98, D99 to D99, D100 to D100.
- USB interface (U12): VCCIO to 5V, VCC to 5V, USBDM to USB_D-, USBBDP to USB_D+, nRESET to RESET, OSCI to 5V, OSCO to 5V, TEST to GND, GND to GND, AGND to GND, 3V3OUT to 3V3, USB_GND to GND.
- ISO7242 (U11): Vcc2 to 5V, GND2 to GND, Vcc1 to 5V, GND1 to GND, INa to RX, INb to TX, OUTa to RX, OUTb to TX, OUTc to RX, OUTd to TX, EN1 to GND, EN2 to GND.
- USB connector (P4): USB_5V to 5V, USB_GND to GND, USB_D- to D-, USB_D+ to D+, USB_OTG to D+, PWR_FLAG to PWR_FLAG, P4 to P4.
- Programming connector (P5): D12/MISO to D12, D13/SCLK to D13, RESET to RESET, P5 to P5, GND to GND.

Outputs:

- ISO_OUTPUTD
- D0/RXD
- D1/TXD
- D2
- D3
- D4
- D5
- D6
- D7
- D8
- D9
- D10
- D11/MOSI
- D12/MISO
- D13/SCLK
- A0
- A1
- A2
- A3
- A4
- A5
- A6_inputonly
- A7_inputonly
- RESET
- 5V
- GND

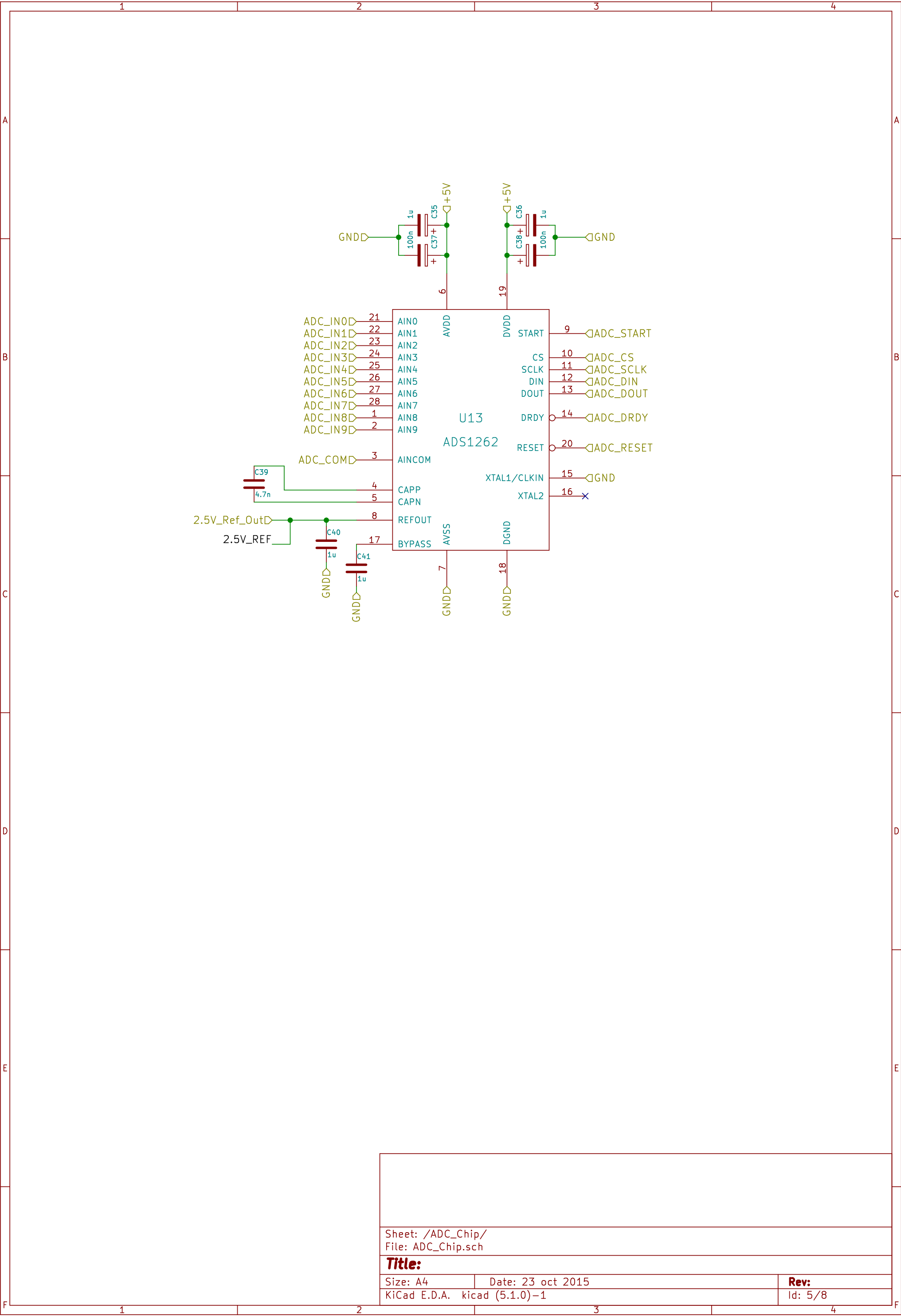
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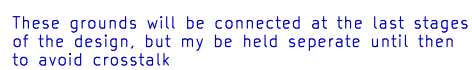
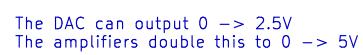
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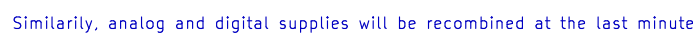
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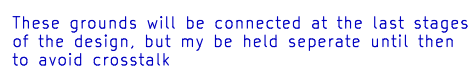
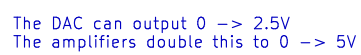
Digital Ground:

Analog Ground:

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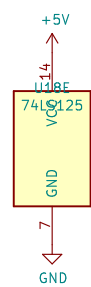
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↓
GND

$+5V$ $+5VA$

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