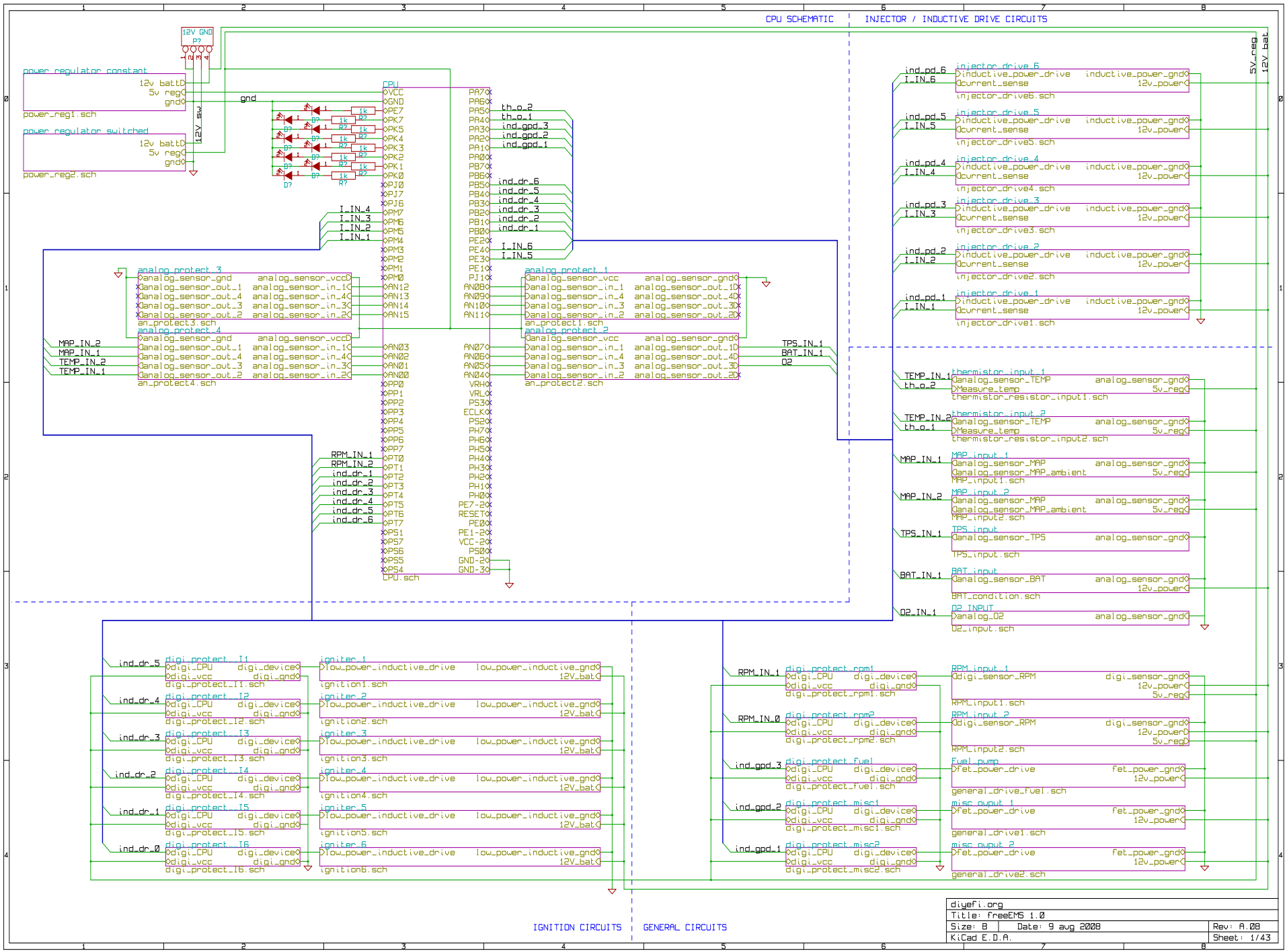
CPU SCHEMATIC
INJECTOR / INDUCTIVE DRIVE CIRCUITS
IGNITION CIRCUITS
GENERAL CIRCUITS
power_regulator_constant
power_reg1.sch
power_regulator_switched
power_reg2.sch
CPU
CPU.sch
analog_protect_3
an_protect3.sch
analog_protect_4
an_protect4.sch
analog_protect_1
an_protect1.sch
analog_protect_2
an_protect2.sch
injector_drive_6
injector_drive6.sch
injector_drive_5
injector_drive5.sch
injector_drive_4
injector_drive4.sch
injector_drive_3
injector_drive3.sch
injector_drive_2
injector_drive2.sch
injector_drive_1
injector_drive1.sch
thermistor_input_1
thermistor_resistor_input1.sch
thermistor_input_2
thermistor_resistor_input2.sch
MAP_input_1
MAP_input1.sch
MAP_input_2
MAP_input2.sch
TPS_input
TPS_input.sch
BAT_input
BAT_condition.sch
O2_INPUT
O2_input.sch
digi_protect_I1
digi_protect_I1.sch
digi_protect_I2
digi_protect_I2.sch
digi_protect_I3
digi_protect_I3.sch
digi_protect_I4
digi_protect_I4.sch
digi_protect_I5
digi_protect_I5.sch
digi_protect_I6
digi_protect_I6.sch
igniter_1
ignition1.sch
igniter_2
ignition2.sch
igniter_3
ignition3.sch
igniter_4
ignition4.sch
igniter_5
ignition5.sch
igniter_6
ignition6.sch
digi_protect_rpm1
digi_protect_rpm1.sch
digi_protect_rpm2
digi_protect_rpm2.sch
digi_protect_fuel
digi_protect_fuel.sch
digi_protect_misc1
digi_protect_misc1.sch
digi_protect_misc2
digi_protect_misc2.sch
RPM_input_1
RPM_input1.sch
RPM_input_2
RPM_input2.sch
Fuel_pump
general_drive_fuel.sch
misc_ouput_1
general_drive1.sch
misc_ouput_2
general_drive2.sch
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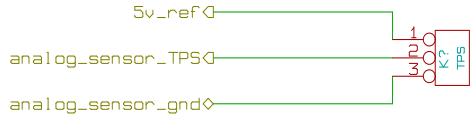
Title: freeEMS 1.0
Size: B
Date: 9 aug 2008
Rev: A.08
KiCad E.D.A.
Sheet: 1/43



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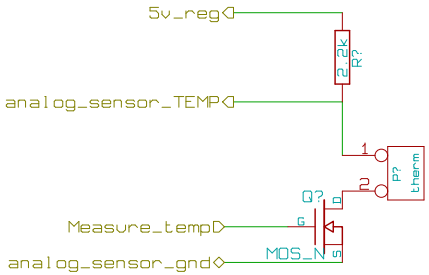
Size: A4	Date: 9 aug 2008		Rev: A.08
KiCad E.D.A.			Sheet: 39/43



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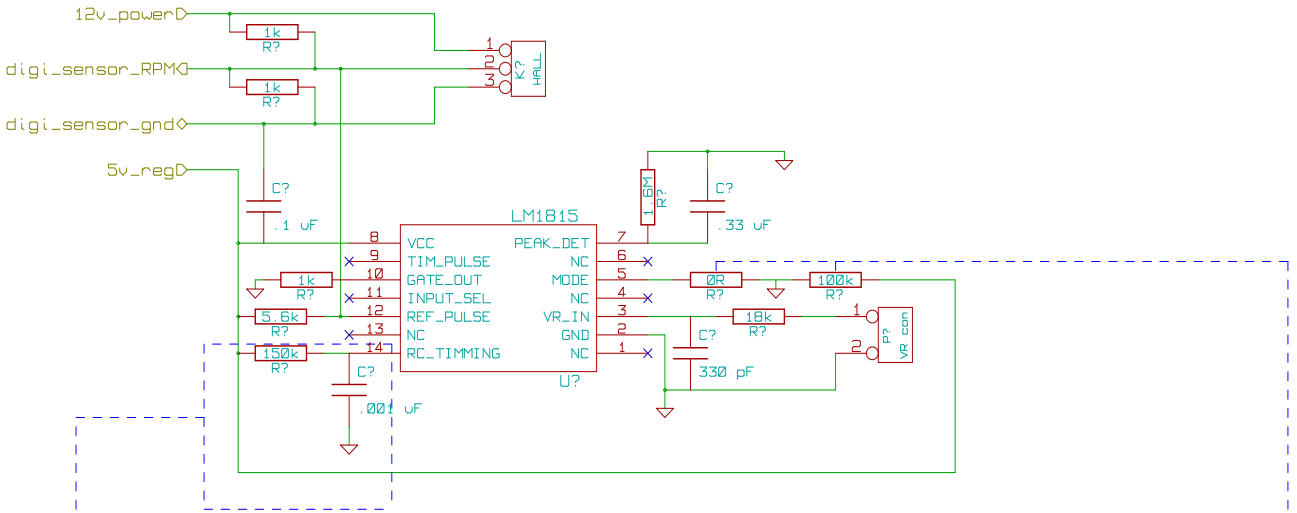
Size: A	Date: 9 aug 2008		Rev: A.08
KiCad E.D.A.			Sheet: 42/43



RECOMMENDED TO REMOVE 150K AND SHORT CAP TO CREATE SQUARE WAVE OUTPUT, NOT TIMMED PULSE

SWITCHING THESE RESISTORS AROUND WILL CHANGE THE MODE OF OUTPUT SIGNAL FOR THE VR CIRCUIT

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Title: freeEMS 1.0		
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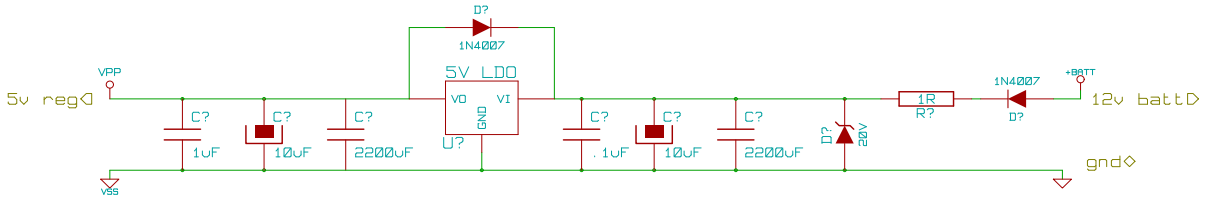

Starting from right and moving to the left we have in order :
-- Power feed and ground from battery and/or block
-- Reverse polarity hook up protection diode
-- Current limiting resistor
-- Zener over voltage clamping diode
-- Charge storage electrolytic polarised 25V 1000uF capacitor (value may change, but 220 - 2200 is around what we want)
-- High frequency tantalum 25V 10uF capacitor (35V units are expensive, as are 22uF)
-- Ultra high frequency ceramic 0.1uF capacitor (larger units with similar frequency response would also be acceptable)
-- 5V LDO (low drop out) voltage regulator
-- Reverse voltage protection diode for the regulator in case of external capacitors discharging more quickly and/or to a lower level than internal ones (snubbing not required as this will not happen when things are actually running)
-- High frequency tantalum 25V 10uF capacitor (35V units are expensive, as are 22uF)
-- Ultra high frequency ceramic 0.1uF capacitor (larger units with similar frequency response would also be acceptable)
-- Power feed and ground for CPU core

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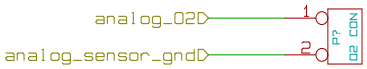

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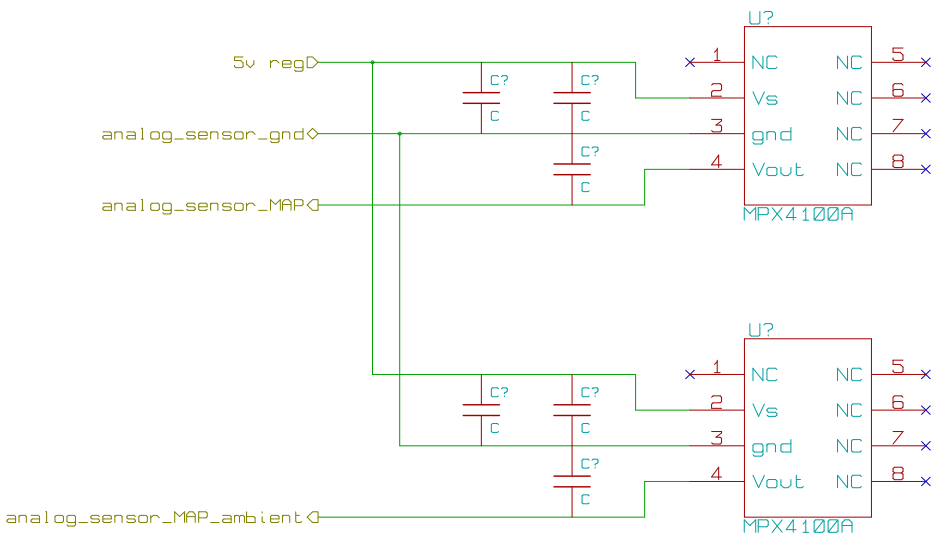

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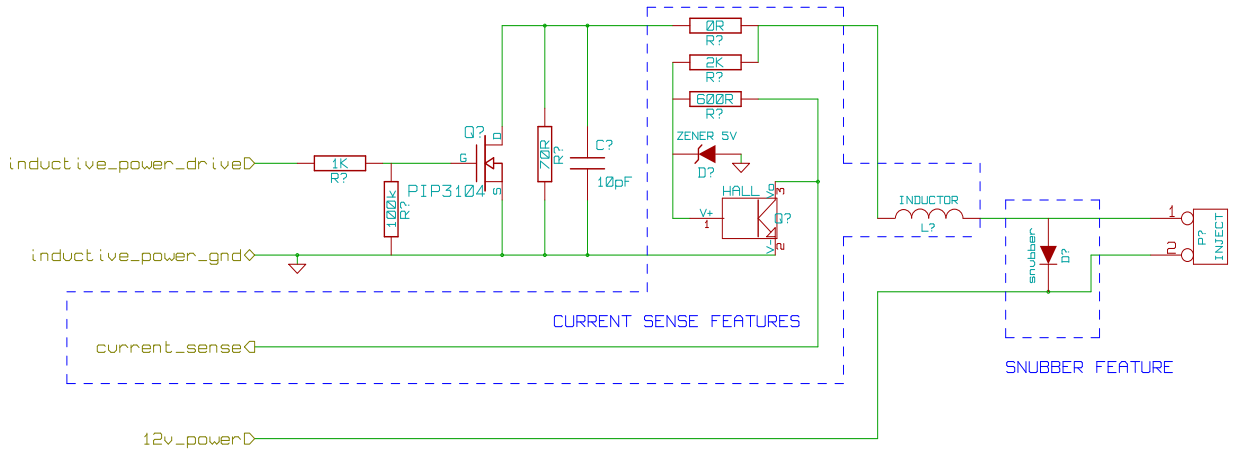

NOTES:

YOU CAN POPULATE DIFFERENT FEATRUES WITH THIS CIRCUIT

CURRENT SENSING ALLOWS YOU TO MEASURE WHEN THE INJECTOR IS ON VS OFF

THE SNUBBER DIODE TO DECREASE INDUCTIVE CURRENT SPIKES

IF YOU DON'T POPULATE THE SNUBBER FEATURE, THE MOSFET WILL DISAPATE ENERGY FROM THE INJECTOR

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Title: freeEMS 1.0		
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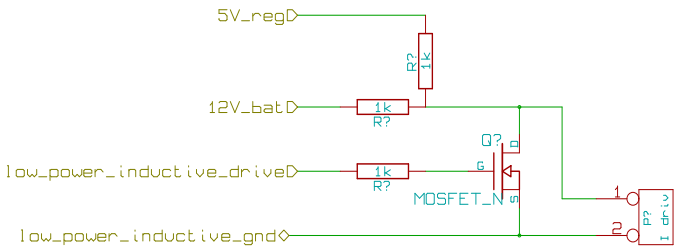

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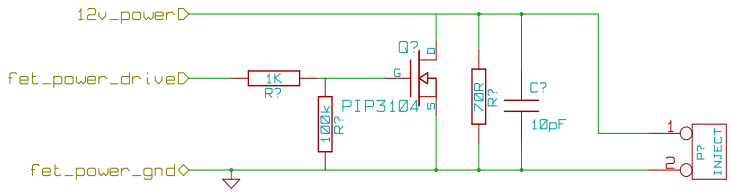

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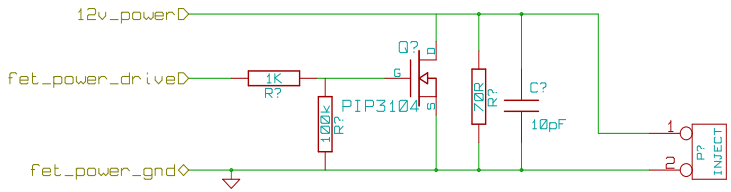

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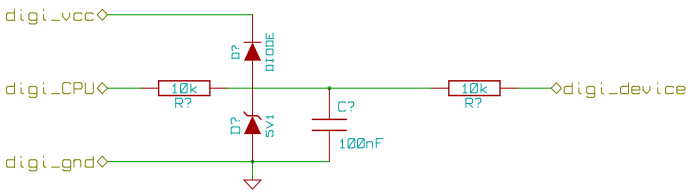

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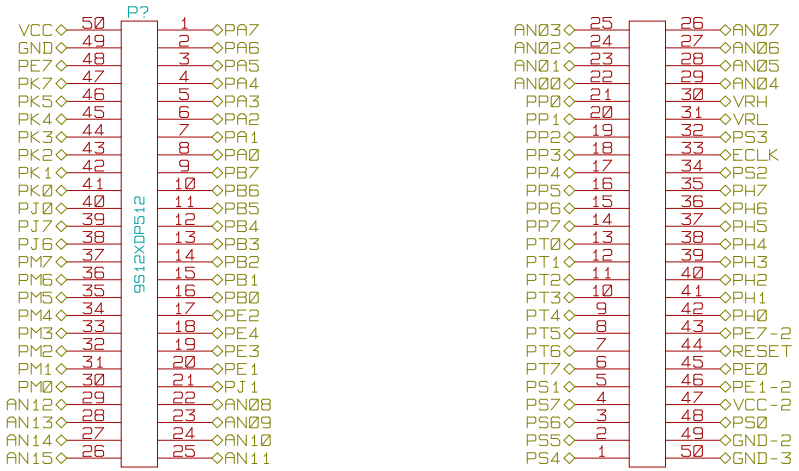

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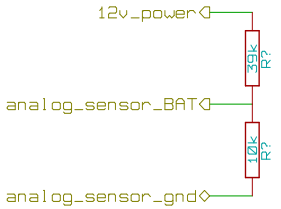

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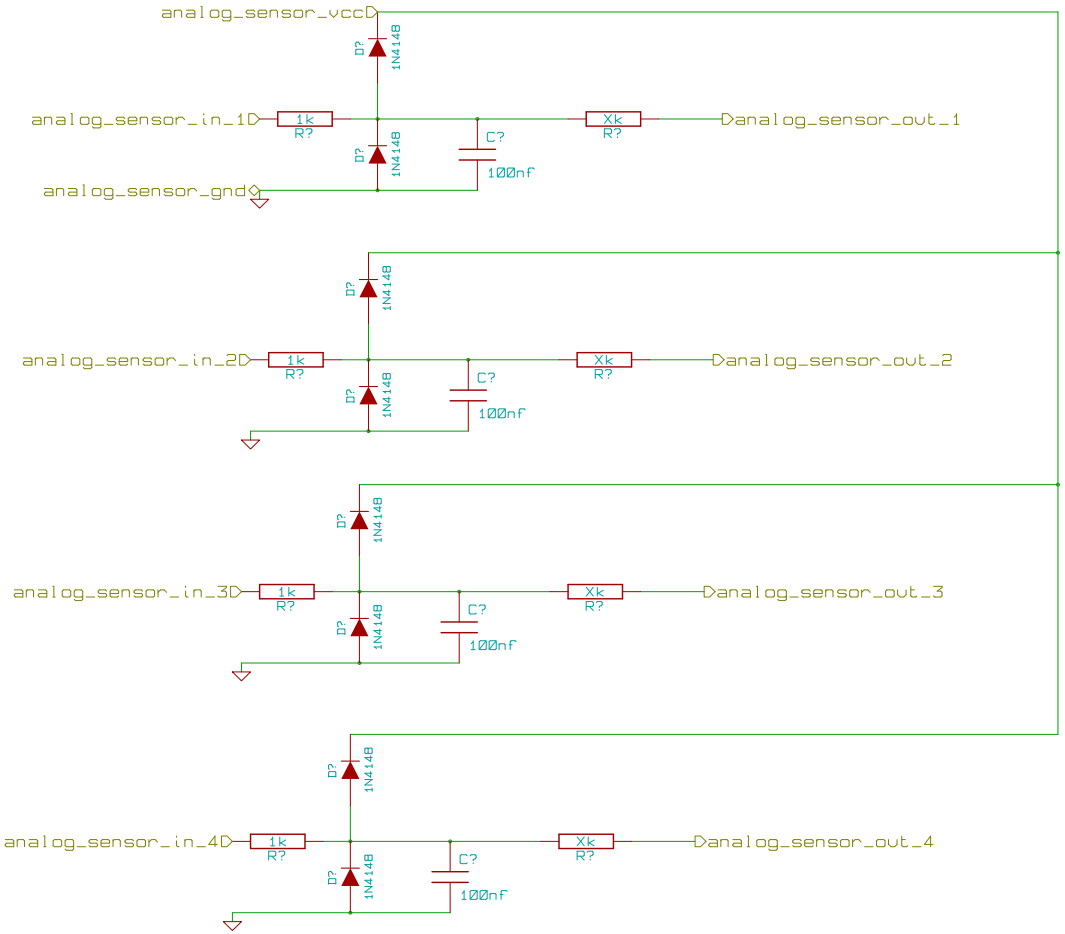

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