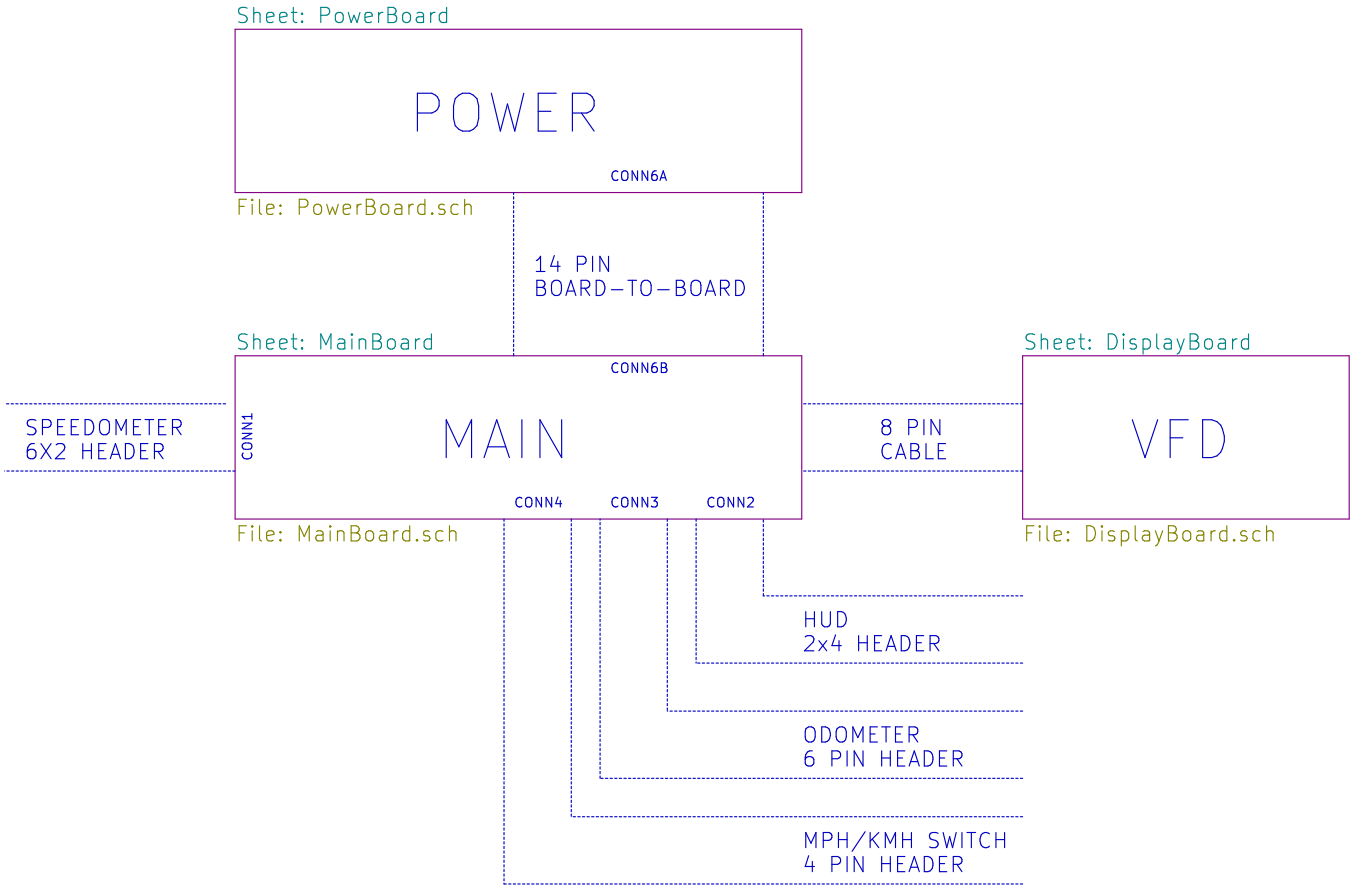

Revision notes:

REV2
Power + Main - HUB_POWER_ENABLE renamed to HUD_POWER_ENABLE (Typo)
HIC1 - TR2, TR3, TR4 transitor naming fixed from DTC114TCA to DTC144TCA
HIC1 - TR1, TR2, TR3, TR4 transitor schematic symbol changed from BEC to EBC (Swapped base-emitter numbering fixed)

NISSAN 180/240SX S13 Digital Speedometer

Sheet: /
File: 180sx-240sx-s13-digidash.sch

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Title:

Size: A4	Date:	**Rev: REV2**
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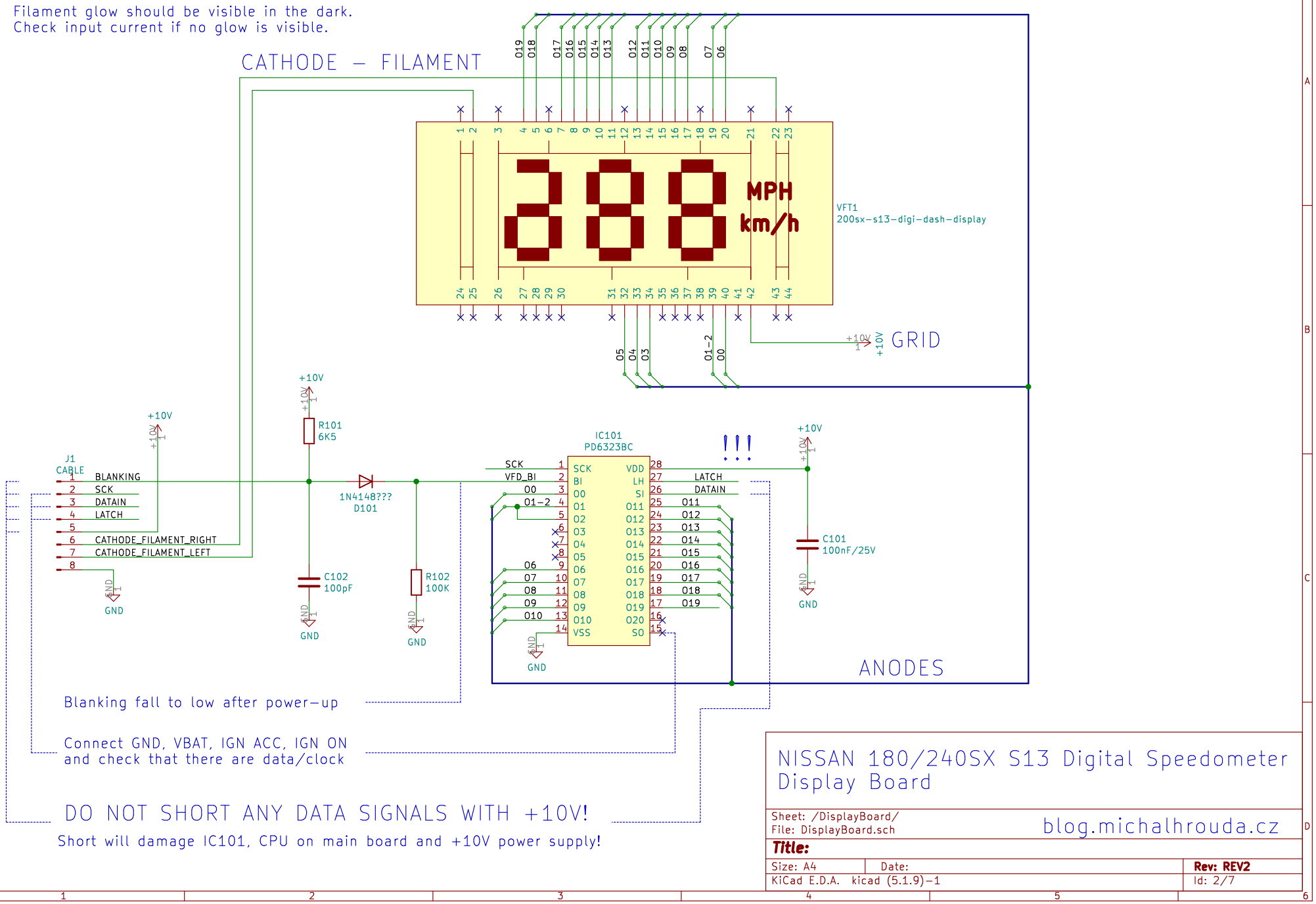
Filament glow should be visible in the dark.
Check input current if no glow is visible.
CATHODE – FILAMENT
VFT1
200sx-s13-digi-dash-display
MPH
km/h
GRID
ANODES
J1
CABLE
BLANKING
SCK
DATAIN
LATCH
CATHODE_FILAMENT_RIGHT
CATHODE_FILAMENT_LEFT
R101
6K5
1N4148???
D101
C102
100pF
R102
100K
IC101
PD6323BC
C101
100nF/25V
+10V
GND
Blanking fall to low after power-up
Connect GND, VBAT, IGN ACC, IGN ON
and check that there are data/clock
DO NOT SHORT ANY DATA SIGNALS WITH +10V!
Short will damage IC101, CPU on main board and +10V power supply!
NISSAN 180/240SX S13 Digital Speedometer
Display Board
Sheet: /DisplayBoard/
File: DisplayBoard.sch
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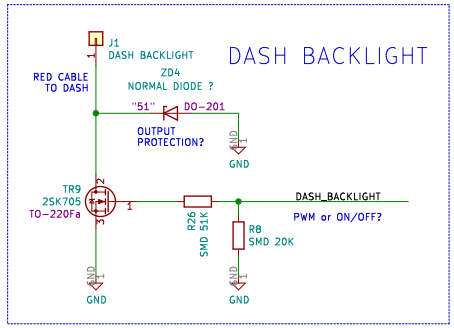
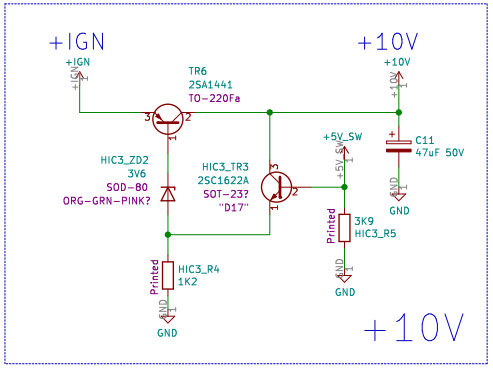
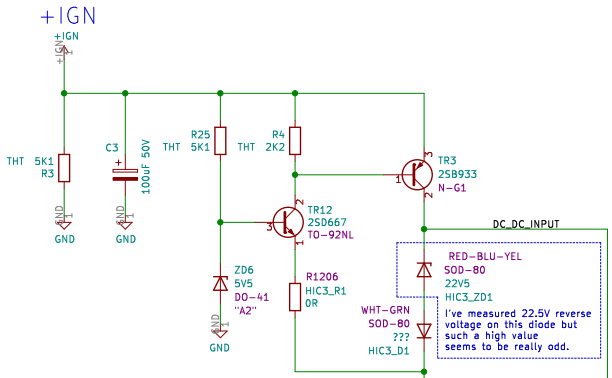
Title:
Size: A4
Date:
Rev: REV2
KiCad E.D.A. kicad (5.1.9)-1
Id: 2/7

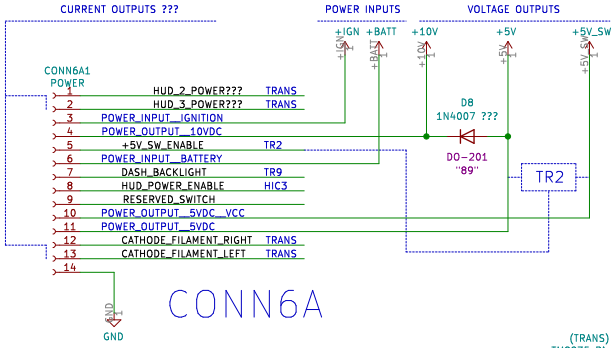


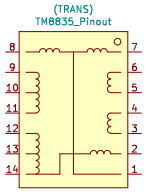


I wan't able to figure out how it actually works
so I'm not able to confirm that this circuit is correct.

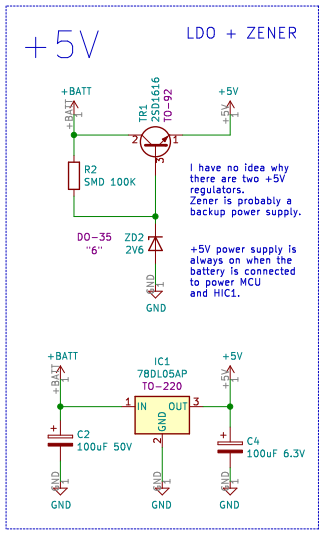
If the +10V is not working check TR6 transistor.

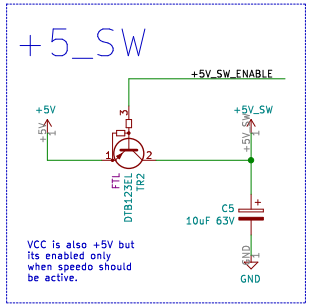


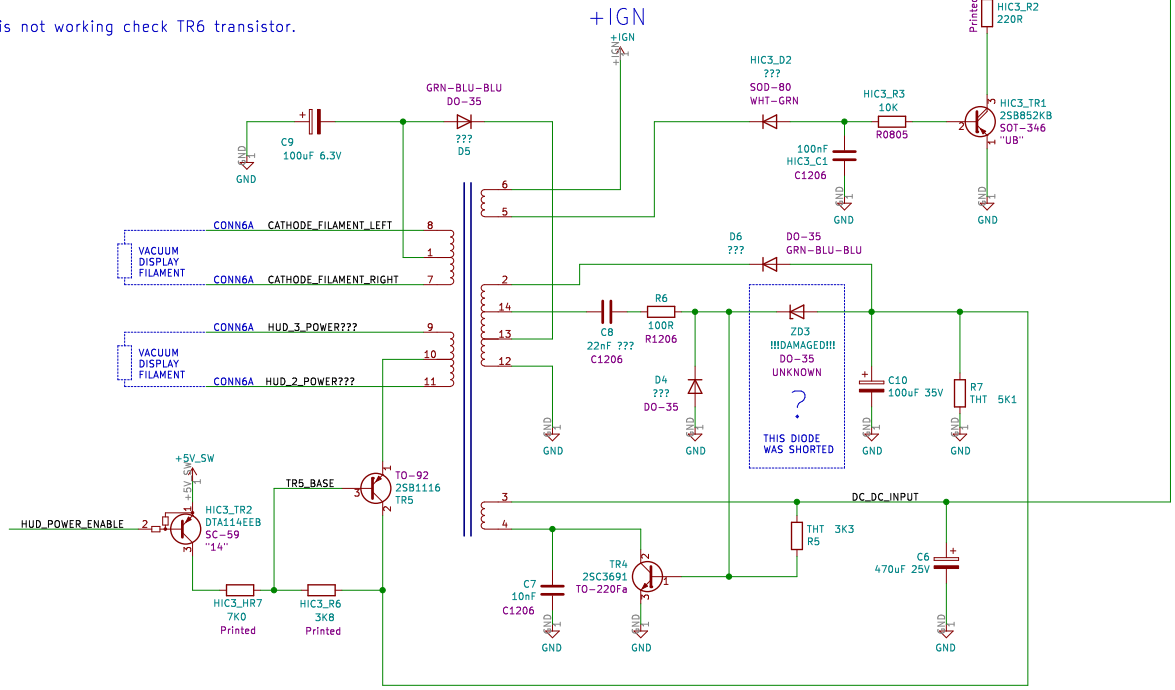




Dot on the package is not at pin 1 but at pin 7. Manufacturing error?





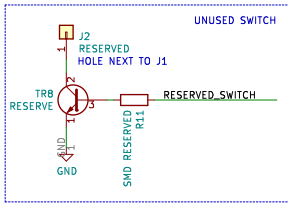


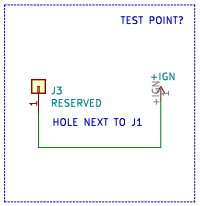
I wan't able to figure out how it actually works
so I'm not able to confirm that this circuit is correct.

Sheet: Hybridic3

HIC3

File: Hybridic3.sch





Be aware that this sheet coitans some errors in parts topology.

NISSAN 180/240SX S13 Digital Speedometer Power Board

Sheet: /PowerBoard/
File: PowerBoard.sch

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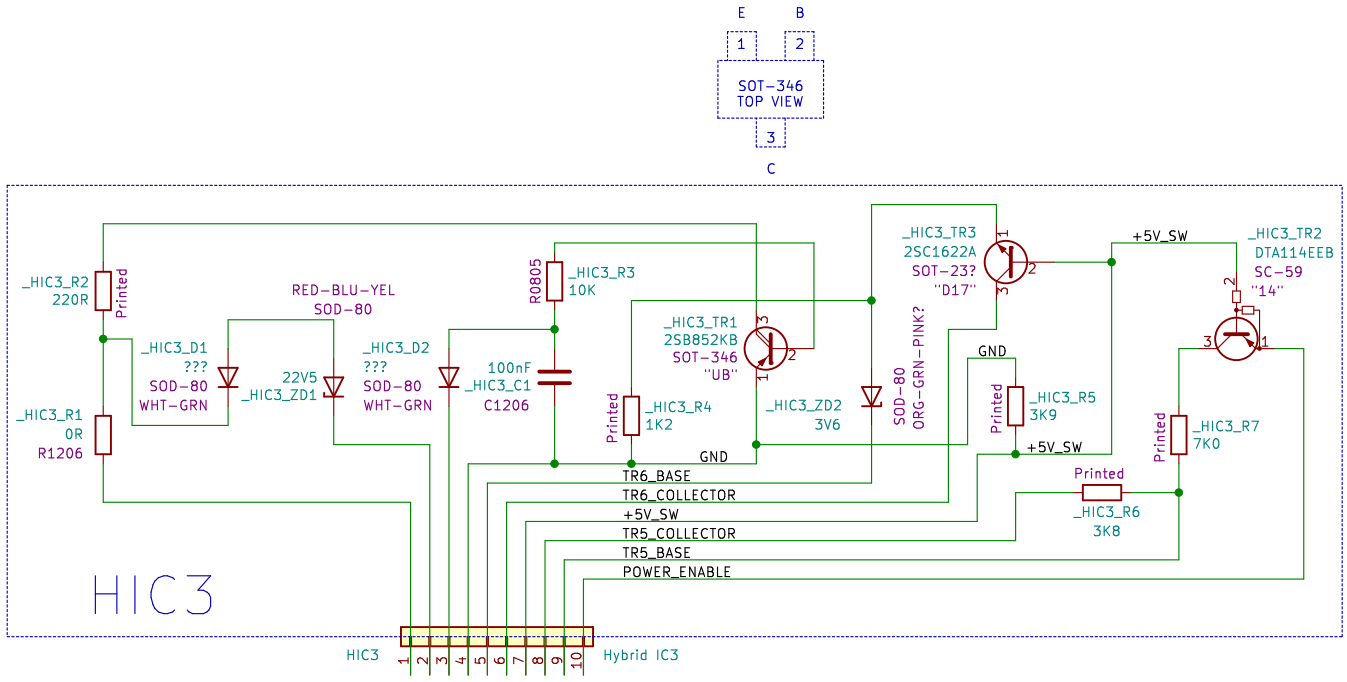
Title:

Size: A3	Date:	**Rev: REV2**
KiCad E.D.A. kicad (5.1.9)-1		Id: 3/7



NISSAN 180/240SX S13 Digital Speedometer
Main Board – Hybrid IC 3

Sheet: /PowerBoard/HybridIc3/
File: HybridIc3.sch

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Title:

Size: A4	Date:	**Rev: REV2**
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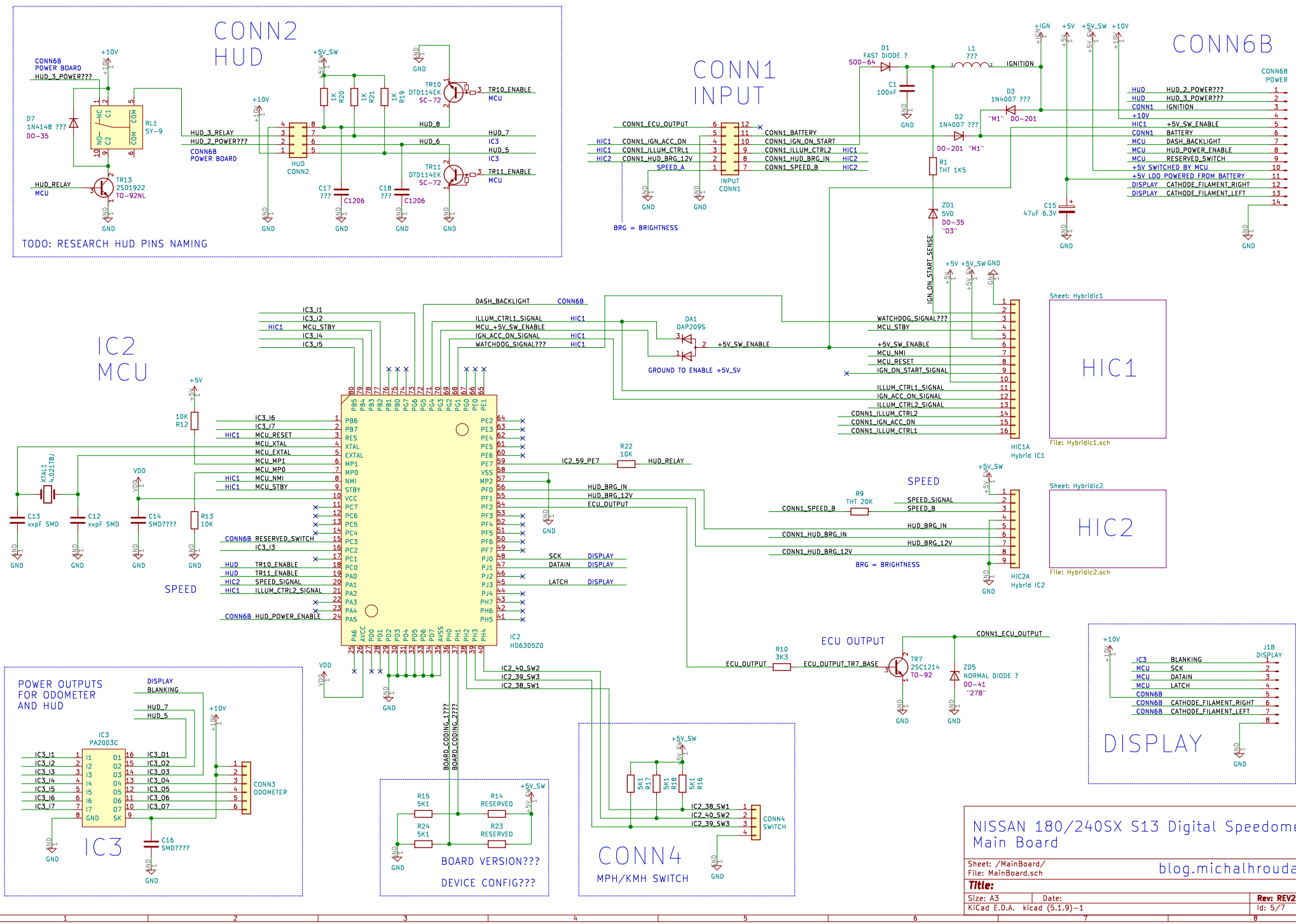
CONN2
HUD
CONN6B
POWER BOARD
HUD_3_POWER???
D7
1N4148 ???
DO-35
RL1
SY-9
HUD_RELAY
MCU
TR13
2SD1922
TO-92NL
HUD_3_RELAY
HUD_2_POWER???
CONN6B
POWER BOARD
HUD
CONN2
TR10
DTD114EK
SC-72
TR10_ENABLE
MCU
TR11
DTD114EK
SC-72
TR11_ENABLE
MCU
HUD_8
HUD_7
IC3
HUD_6
HUD_5
IC3
C17
???
C1206
C18
???
C1206
TODO: RESEARCH HUD PINS NAMING
CONN1
INPUT
CONN1_ECU_OUTPUT
HIC1 CONN1_IGN_ACC_ON
HIC1 CONN1_ILLUM_CTRL1
HIC2 CONN1_HUD_BRG_12V
SPEED_A
CONN1_BATTERY
CONN1_IGN_ON_START
CONN1_ILLUM_CTRL2 HIC1
CONN1_HUD_BRG_IN HIC2
CONN1_SPEED_B HIC2
INPUT
CONN1
BRG = BRIGHTNESS
D1
FAST DIODE ?
SOD-64
L1
???
IGNITION
C1
100nF
D3
1N4007 ???
"M1"
DO-201
D2
1N4007 ???
DO-201 "M1"
R1
THT 1K5
ZD1
5V0
DO-35
"03"
C15
47uF 6.3V
IGN_ON_START_SENSE
CONN6B
CONN6B
POWER
HUD HUD_2_POWER???
HUD HUD_3_POWER???
CONN1 IGNITION
+10V
HIC1 +5V_SW_ENABLE
CONN1 BATTERY
MCU DASH_BACKLIGHT
MCU HUD_POWER_ENABLE
MCU RESERVED_SWITCH
+5V SWITCHED BY MCU
+5V LDO POWERED FROM BATTERY
DISPLAY CATHODE_FILAMENT_RIGHT
DISPLAY CATHODE_FILAMENT_LEFT
IC2
MCU
DASH_BACKLIGHT CONN6B
ILLUM_CTRL1_SIGNAL HIC1
MCU_+5V_SW_ENABLE
IGN_ACC_ON_SIGNAL HIC1
WATCHDOG_SIGNAL??? HIC1
IC3_I1
IC3_I2
HIC1 MCU_STBY
IC3_I4
IC3_I5
DA1
DAP209S
+5V_SW_ENABLE
GROUND TO ENABLE +5V_SV
WATCHDOG_SIGNAL???
MCU_STBY
+5V_SW_ENABLE
MCU_NMI
MCU_RESET
IGN_ON_START_SIGNAL
ILLUM_CTRL1_SIGNAL
IGN_ACC_ON_SIGNAL
ILLUM_CTRL2_SIGNAL
CONN1_ILLUM_CTRL2
CONN1_IGN_ACC_ON
CONN1_ILLUM_CTRL1
HIC1A
Hybrid IC1
Sheet: Hybridc1
File: Hybridc1.sch
HIC1
IC3_I6
IC3_I7
HIC1 MCU_RESET
MCU_XTAL
MCU_EXTAL
MCU_MP1
MCU_MP0
HIC1 MCU_NMI
HIC1 MCU_STBY
CONN6B RESERVED_SWITCH
IC3_I3
HUD TR10_ENABLE
HUD TR11_ENABLE
HIC2 SPEED_SIGNAL
HIC1 ILLUM_CTRL2_SIGNAL
CONN6B HUD_POWER_ENABLE
IC2_59_PE7
R22
10K
HUD_RELAY
HUD_BRG_IN
HUD_BRG_12V
ECU_OUTPUT
SCK DISPLAY
DATAIN DISPLAY
LATCH DISPLAY
IC2
HD6305Z0
XTAL1
4.0218(8)
C13
xxpF SMD
C12
xxpF SMD
C14
SMD????
R13
10K
R12
10K
SPEED
R9
THT 20K
CONN1_SPEED_B
SPEED_SIGNAL
SPEED_B
HUD_BRG_IN
HUD_BRG_12V
CONN1_HUD_BRG_IN
CONN1_HUD_BRG_12V
BRG = BRIGHTNESS
HIC2A
Hybrid IC2
Sheet: Hybridc2
File: Hybridc2.sch
HIC2
ECU OUTPUT
R10
3K3
ECU_OUTPUT
ECU_OUTPUT_TR7_BASE
TR7
2SC1214
TO-92
ZD5
NORMAL DIODE ?
DO-41
"27B"
CONN1_ECU_OUTPUT
J1B
DISPLAY
IC3
BLANKING
MCU SCK
MCU DATAIN
MCU LATCH
CONN6B
CONN6B CATHODE_FILAMENT_RIGHT
CONN6B CATHODE_FILAMENT_LEFT
DISPLAY
POWER OUTPUTS
FOR ODOMETER
AND HUD
DISPLAY
BLANKING
HUD_7
HUD_5
IC3
PA2003C
IC3_I1
IC3_I2
IC3_I3
IC3_I4
IC3_I5
IC3_I6
IC3_I7
IC3_O1
IC3_O2
IC3_O3
IC3_O4
IC3_O5
IC3_O6
IC3_O7
CONN3
ODOMETER
C16
SMD????
IC3
BOARD_CODING_1???
BOARD_CODING_2???
R15
5K1
R14
RESERVED
R24
5K1
R23
RESERVED
BOARD VERSION???
DEVICE CONFIG???
R27
5K1
R18
5K1
R16
5K1
IC2_38_SW1
IC2_40_SW2
IC2_39_SW3
CONN4
SWITCH
CONN4
MPH/KMH SWITCH
NISSAN 180/240SX S13 Digital Speedometer
Main Board
Sheet: /MainBoard/
File: MainBoard.sch
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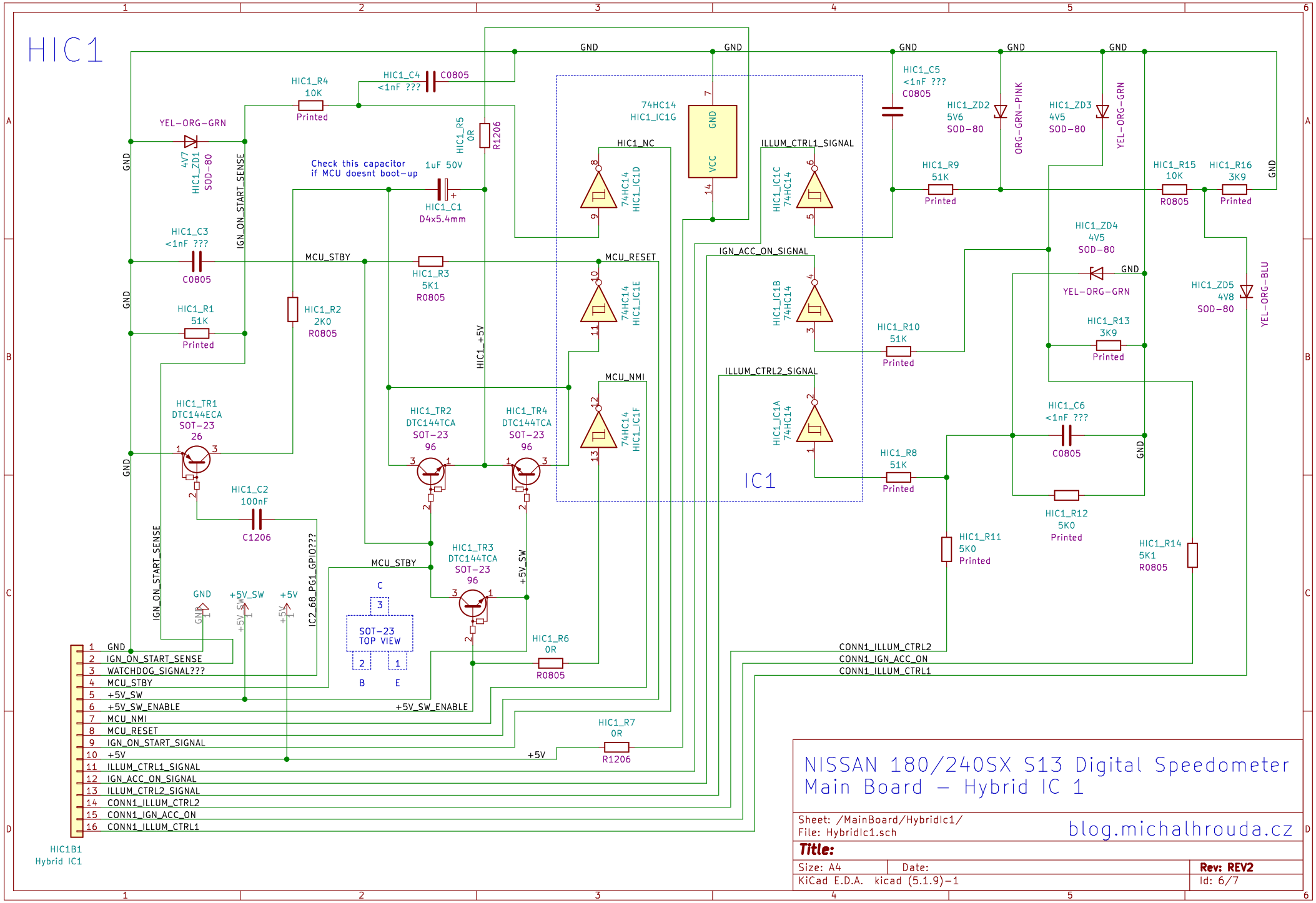
Title:
Size: A3
Date:
Rev: REV2
KiCad E.D.A. kicad (5.1.9)-1
Id: 5/7


HIC1
GND
HIC1_R4
10K
Printed
HIC1_C4
<1nF ???
C0805
YEL-ORG-GRN
4V7
HIC1_ZD1
SOD-80
IGN_ON_START_SENSE
Check this capacitor
if MCU doesnt boot-up
1uF 50V
HIC1_C1
D4x5.4mm
HIC1_R5
0R
R1206
HIC1_C3
<1nF ???
C0805
HIC1_R1
51K
Printed
HIC1_R2
2K0
R0805
MCU_STBY
HIC1_R3
5K1
R0805
HIC1_+5V
HIC1_TR1
DTC144ECA
SOT-23
26
HIC1_C2
100nF
C1206
IGN_ON_START_SENSE
IC2_68_PG1_GPIO???
HIC1_TR2
DTC144TCA
SOT-23
96
HIC1_TR4
DTC144TCA
SOT-23
96
HIC1_TR3
DTC144TCA
SOT-23
96
+5V_SW
SOT-23
TOP VIEW
C
B
E
HIC1_R6
0R
R0805
+5V_SW_ENABLE
74HC14
HIC1_IC1G
HIC1_NC
HIC1_IC1D
MCU_RESET
HIC1_IC1E
MCU_NMI
HIC1_IC1F
HIC1_IC1C
74HC14
ILLUM_CTRL1_SIGNAL
HIC1_IC1B
74HC14
IGN_ACC_ON_SIGNAL
HIC1_IC1A
74HC14
ILLUM_CTRL2_SIGNAL
IC1
HIC1_C5
<1nF ???
C0805
HIC1_ZD2
5V6
SOD-80
ORG-GRN-PINK
HIC1_ZD3
4V5
SOD-80
YEL-ORG-GRN
HIC1_R9
51K
Printed
HIC1_R15
10K
R0805
HIC1_R16
3K9
Printed
HIC1_ZD4
4V5
SOD-80
YEL-ORG-GRN
HIC1_ZD5
4V8
SOD-80
YEL-ORG-BLU
HIC1_R10
51K
Printed
HIC1_R13
3K9
Printed
HIC1_C6
<1nF ???
C0805
HIC1_R8
51K
Printed
HIC1_R12
5K0
Printed
HIC1_R11
5K0
Printed
HIC1_R14
5K1
R0805
HIC1_R7
0R
R1206
+5V
CONN1_ILLUM_CTRL2
CONN1_IGN_ACC_ON
CONN1_ILLUM_CTRL1
1 GND
2 IGN_ON_START_SENSE
3 WATCHDOG_SIGNAL???
4 MCU_STBY
5 +5V_SW
6 +5V_SW_ENABLE
7 MCU_NMI
8 MCU_RESET
9 IGN_ON_START_SIGNAL
10 +5V
11 ILLUM_CTRL1_SIGNAL
12 IGN_ACC_ON_SIGNAL
13 ILLUM_CTRL2_SIGNAL
14 CONN1_ILLUM_CTRL2
15 CONN1_IGN_ACC_ON
16 CONN1_ILLUM_CTRL1
HIC1B1
Hybrid IC1
NISSAN 180/240SX S13 Digital Speedometer
Main Board – Hybrid IC 1
Sheet: /MainBoard/HybridIc1/
File: HybridIc1.sch
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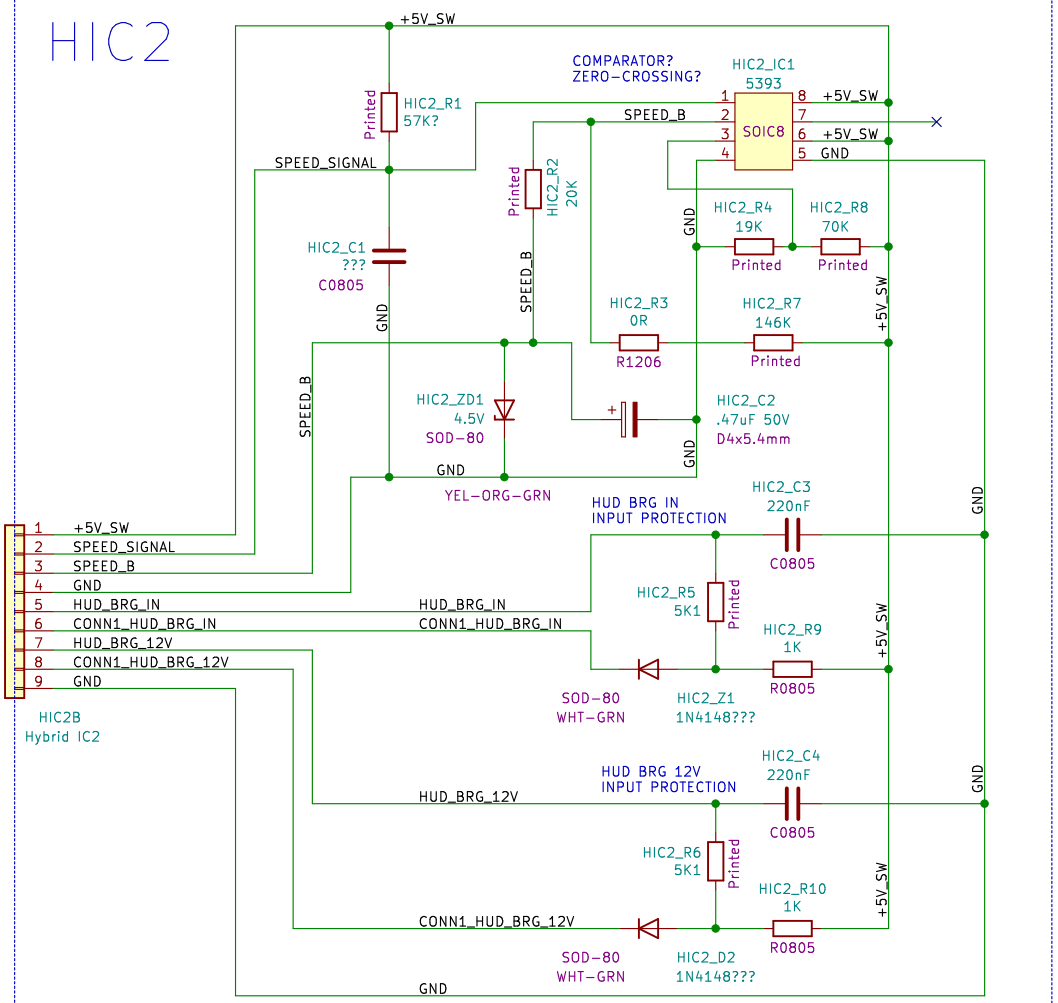
Title:
Size: A4
Date:
Rev: REV2
KiCad E.D.A. kicad (5.1.9)-1
Id: 6/7



NISSAN 180/240SX S13 Digital Speedometer
Main Board – Hybrid IC 2

Sheet: /MainBoard/HybridIc2/
File: HybridIc2.sch

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Title:

Size: A4	Date:	**Rev: REV2**
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