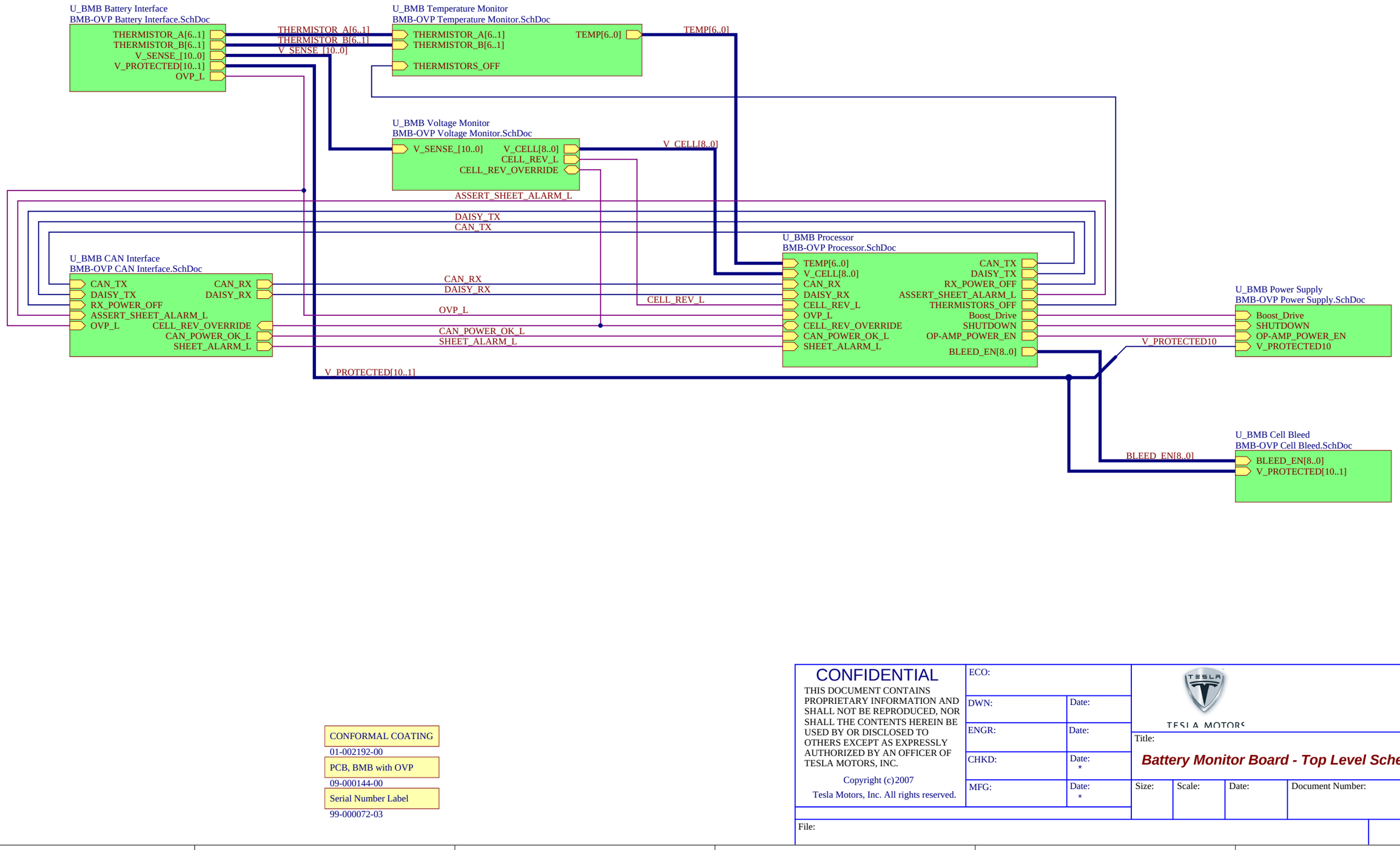


CONFORMAL COATING
01-002192-00

PCB, BMB with OVP
09-000144-00

Serial Number Label
99-000072-03

ECO:		
DWN:	Date:	
ENGR:	Date:	
CHKD:	Date: *	
MFG:	Date: *	

TESLA MOTORS

Title: **Battery Monitor Board - Top Level Schematic**

Size:	Scale:	Date:	Document Number:	REV:

File:

J5B
Sensor Connector

J5A
Sensor Connector
01-001894-00

VCC+5V_TEST — R163 2K2 — VCC+5V
VCC+5V Monitor for production testing

4.3 V Brick Overvoltage Protection

Traces on nets V_BAT0 .. V_BAT9 from J1 to R1 .. R10 to be 0.012 in. wide

Traces on nets V_PROTECTED1 .. V_PROTECTED10 from F1, F2, etc. to Q10, Q13, ... etc. to be 0.012 in. wide

J6
01-005390-00
NO LOAD

ECO:
DWN: Date:
ENGR: Date:
CHKD: Date: *
MFG: Date: *

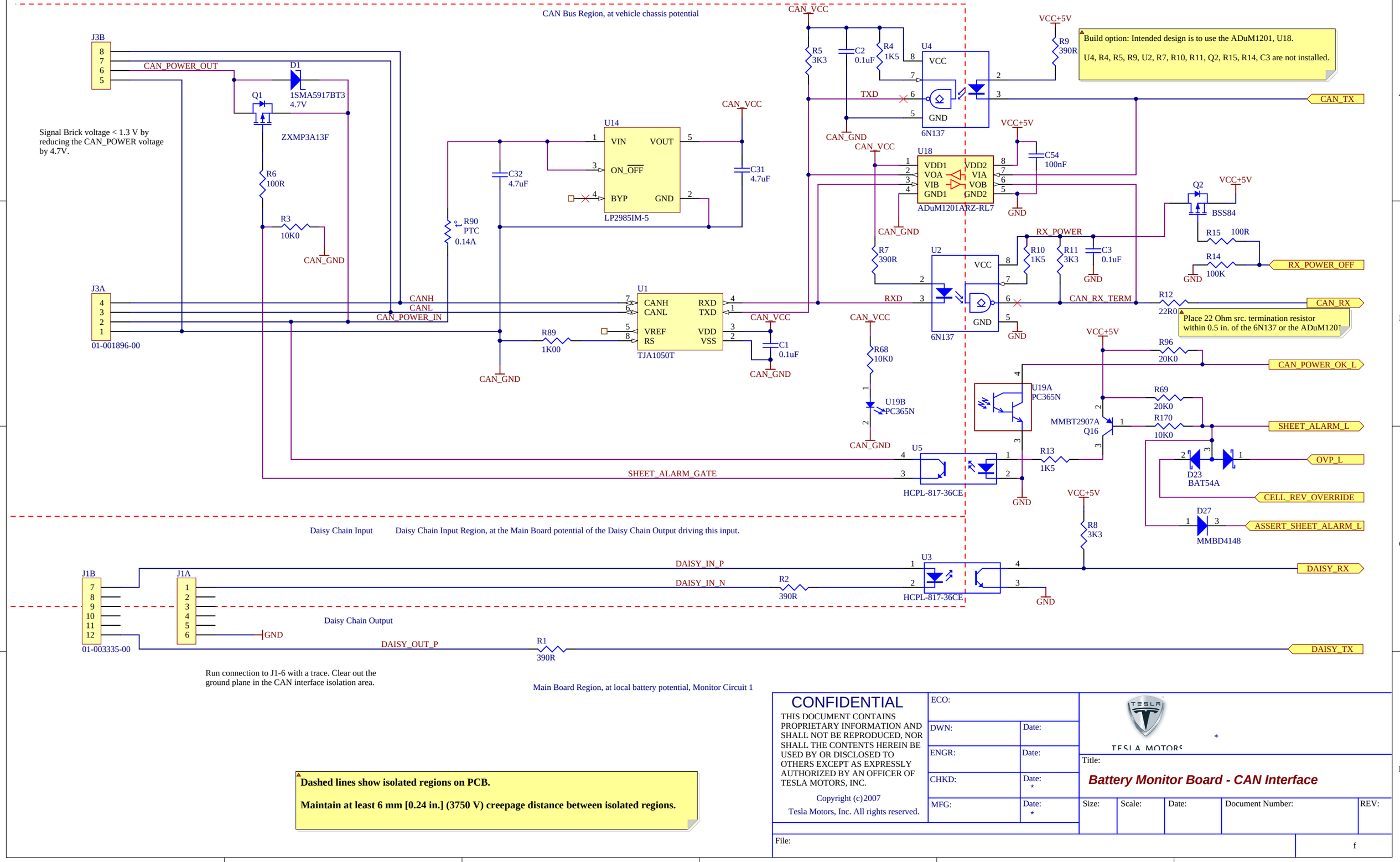
TESLA MOTORS

Title: **Battery Monitor Board - Battery Interface**

Size: | Scale: | Date: | Document Number: | REV:

File:

Sheet 2 of 8



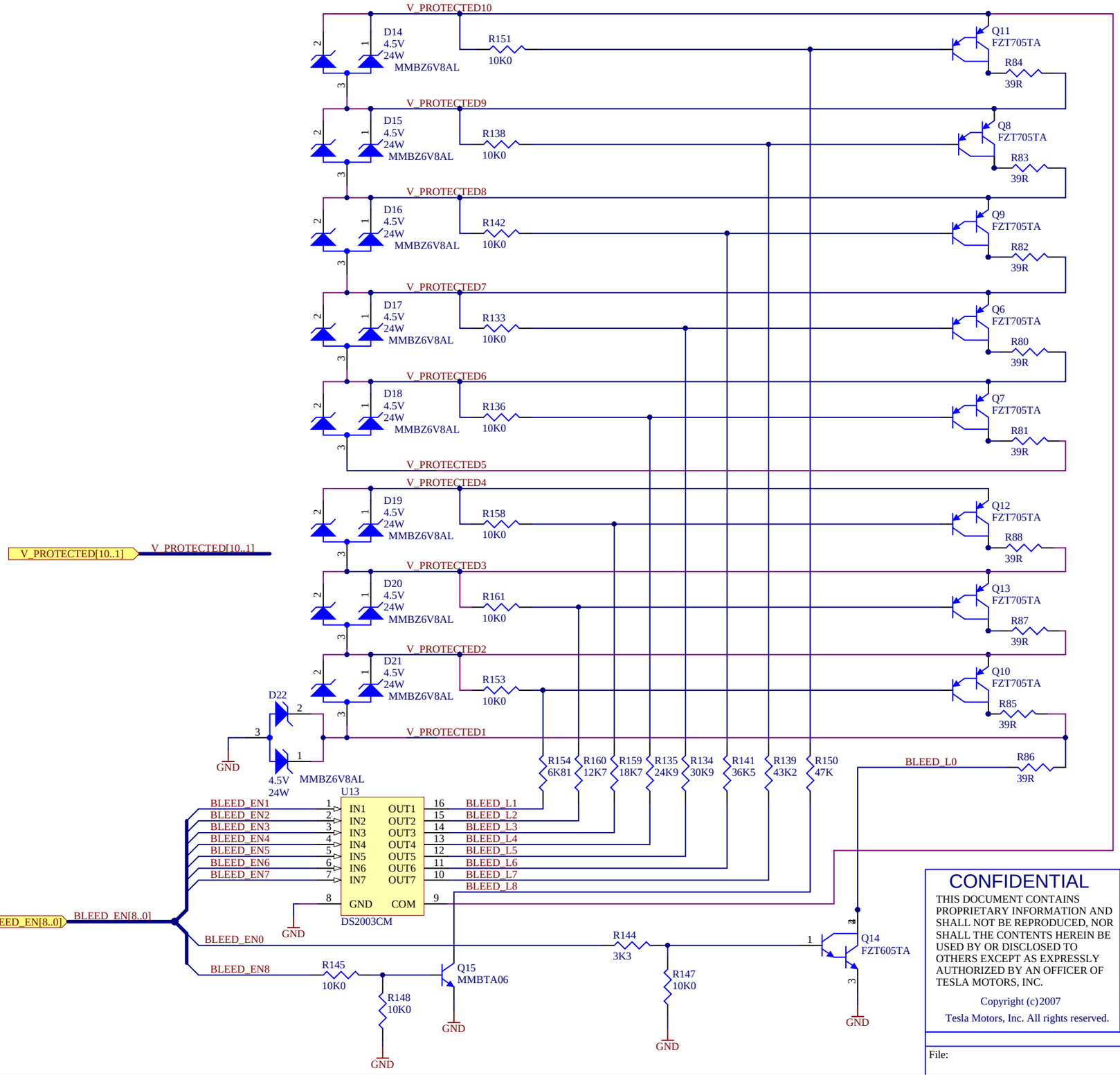
ECO:		
DWN:	Date:	
ENGR:	Date:	
CHKD:	Date: *	
MFG:	Date: *	

TESLA MOTORS *

Title: **Battery Monitor Board - CAN Interface**

Size:	Scale:	Date:	Document Number:	REV:

File: f



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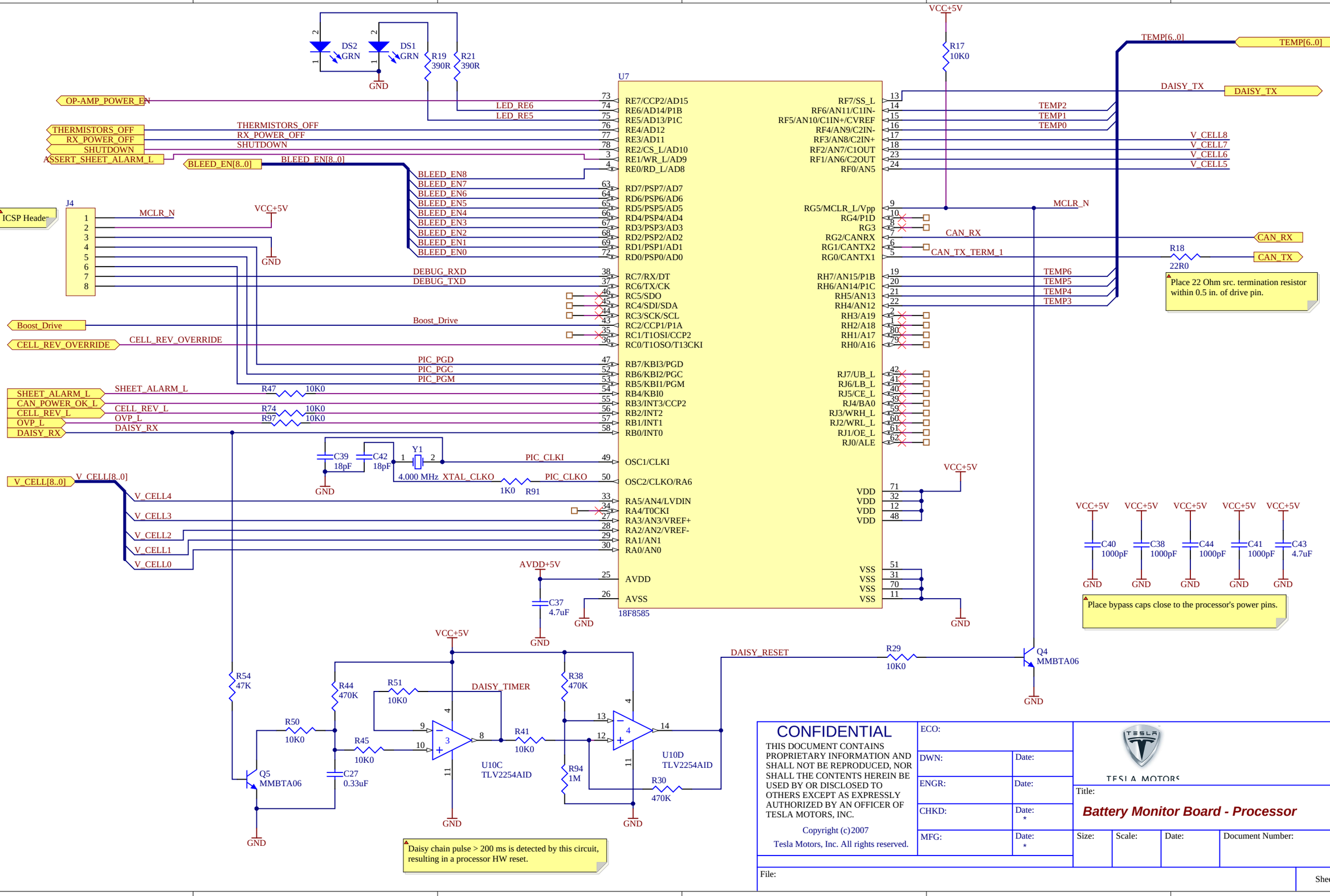
ECO:		
DWN:	Date:	
ENGR:	Date:	
CHKD:	Date: *	
MFG:	Date: *	

TESLA MOTORS *

Title: **Battery Monitor Board- Cell Bleed**

Size:	Scale:	Date:	Document Number:	REV:

File:



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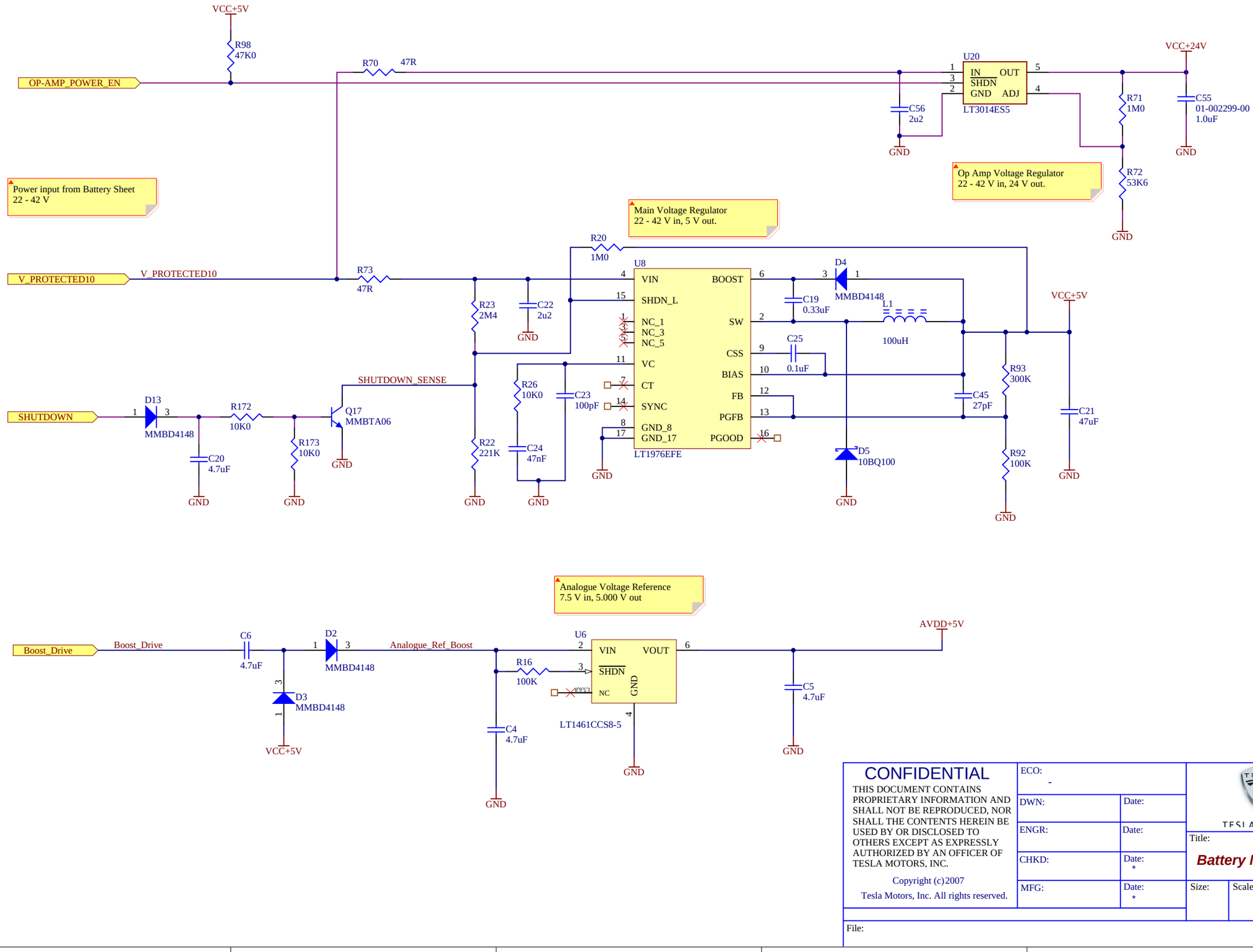
ECO:		
DWN:	Date:	
ENGR:	Date:	
CHKD:	Date: *	
MFG:	Date: *	

TESLA MOTORS

Title: **Battery Monitor Board - Processor**

Size:	Scale:	Date:	Document Number:	REV:

File:



ECO: -		
DWN:	Date:	
ENGR:	Date:	
CHKD:	Date: *	
MFG:	Date: *	

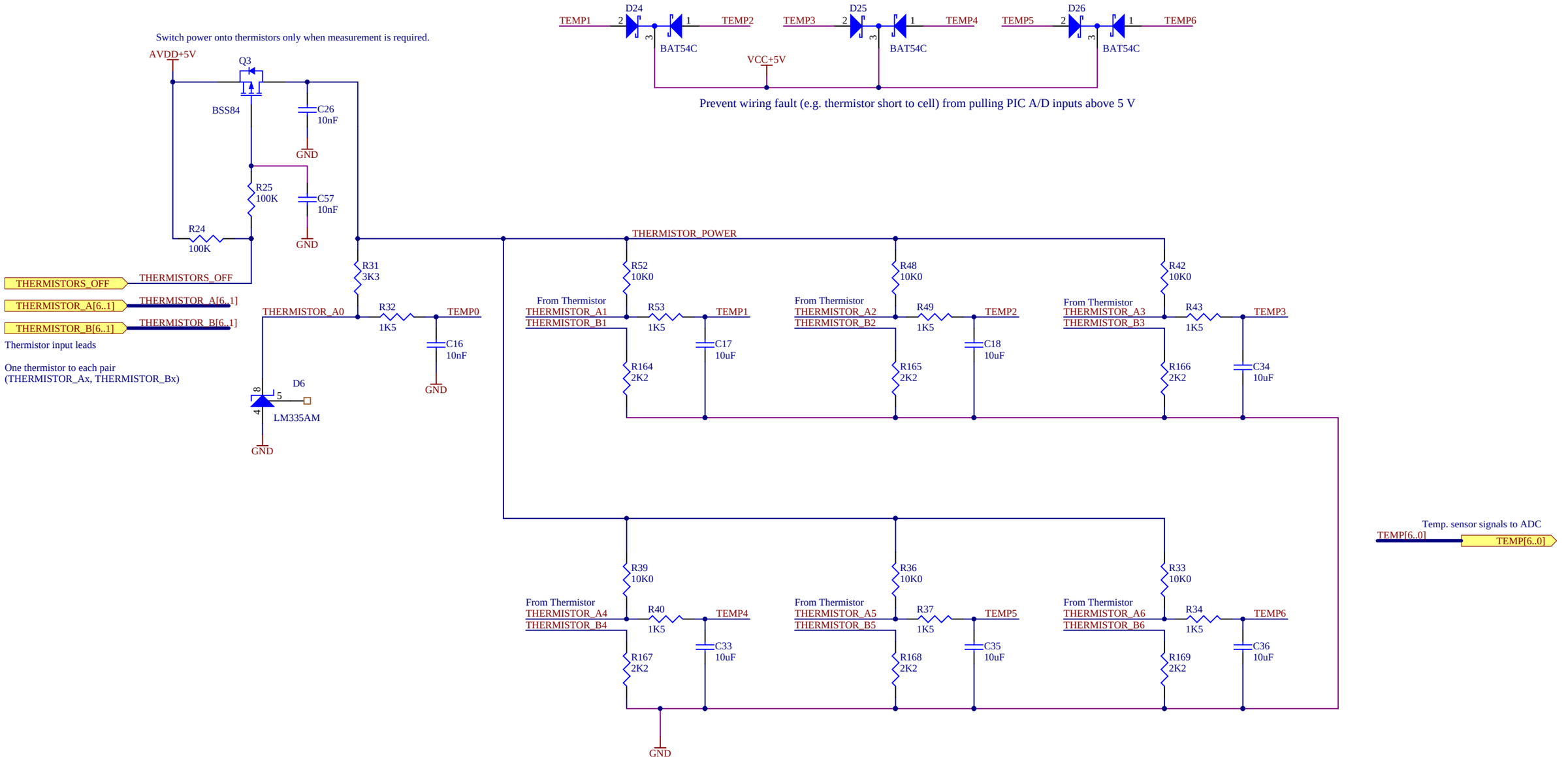
TESLA MOTORS

Title: **Battery Monitor Board - Power Supply**

Size:	Scale:	Date:	Document Number:	REV:

File:

Sheet 6 of 8



ECO:		
DWN:	Date:	
ENGR:	Date:	
CHKD:	Date: *	
MFG:	Date: *	

TESLA MOTORS

Title: **Battery Monitor Board- Temperature Monitor**

Size:	Scale:	Date:	Document Number:	REV:

File:

Voltage sensing wires from the Bricks in the Sheet

V_SENSE_[10..0]

V_SENSE_[10..0]

Sensed cell voltages to ADC

V_CELL[8..0]

V_CELL[8..0]

VCC+5V

C28 0.1uF

GND

VCC+24V

C30 0.1uF

GND

VCC+24V

C29 0.1uF

GND

Place bypass cap adjacent to each op amp package.

V_SENSE_9 — RN1A 100K 0.1% — RN1B 100K 0.1%

V_SENSE_10 — RN1C 100K 0.1% — RN1D 100K 0.1% — GND

U12A LT1491A

R60 4K75 — V_CELL8

C15 10nF — GND

V_SENSE_8 — RN2A 100K 0.1% — RN2B 100K 0.1%

V_SENSE_9 — RN2C 100K 0.1% — RN2D 100K 0.1% — GND

U12D LT1491A

R57 4K75 — V_CELL7

C14 10nF — GND

V_SENSE_7 — RN2G 100K 0.1% — RN2H 100K 0.1%

V_SENSE_8 — RN2E 100K 0.1% — RN2F 100K 0.1% — GND

U12C LT1491A

R78 4K75 — V_CELL6

C7 10nF — GND

V_SENSE_6 — RN1G 100K 0.1% — RN1H 100K 0.1%

V_SENSE_7 — RN1E 100K 0.1% — RN1F 100K 0.1% — GND

U12B LT1491A

R79 4K75 — V_CELL5

C8 10nF — GND

V_SENSE_5 — RN3G 100K 0.1% — RN3H 100K 0.1%

V_SENSE_6 — RN3E 100K 0.1% — RN3F 100K 0.1% — GND

U11B LT1491A

R55 4K75 — V_CELL4

C13 10nF — GND

VCC+5V

R171 10K0

D10 BAT54A

D12 BAT54A

V_SENSE_3 — RN3A 100K 0.1% — RN3B 100K 0.1%

V_SENSE_4 — RN3C 100K 0.1% — RN3D 100K 0.1% — GND

U11A LT1491A

R56 4K75 — V_CELL3

C9 10nF — GND

D9 BAT54A

VCC+24V

V_SENSE_2 — RN4A 100K 0.1% — RN4B 100K 0.1%

V_SENSE_3 — RN4C 100K 0.1% — RN4D 100K 0.1% — GND

U11D LT1491A

R58 4K75 — V_CELL2

C10 10nF — GND

UVP_DET_BUS

V_SENSE_1 — RN4G 100K 0.1% — RN4H 100K 0.1%

V_SENSE_2 — RN4E 100K 0.1% — RN4F 100K 0.1% — GND

U11C LT1491A

R76 4K75 — V_CELL1

C11 10nF — GND

D11 BAT54A

D8 BAT54A

VCC+5V

V_SENSE_0 — RN5G 100K 0.1% — RN5H 100K 0.1%

V_SENSE_1 — RN5E 100K 0.1% — RN5F 100K 0.1% — GND

U10B TLV2254AID

R77 4K75 — V_CELL0

C12 10nF — GND

RN5A 100K 0.1%

RN5B 100K 0.1%

RN5C 100K 0.1%

RN5D 100K 0.1%

Spares

VCC+5V

R35 36K5

UVP_REF

R28 6K81

D7 BAT54A

U9 LM4041 1.2V

GND

Detect any Brick voltage < 1.3 V.

VCC+5V

R27 1M0

R95 82K5

GND

U10A TLV2254AID

R75 4K75

CELL_REV_L

CELL_REV_OVERRIDE

Cell Reversal Detector

Title	***Battery Monitor Board - Voltage Monitor***	
Size:	Number:	Revision:
Date:		Sheet 8 of 8
File:		