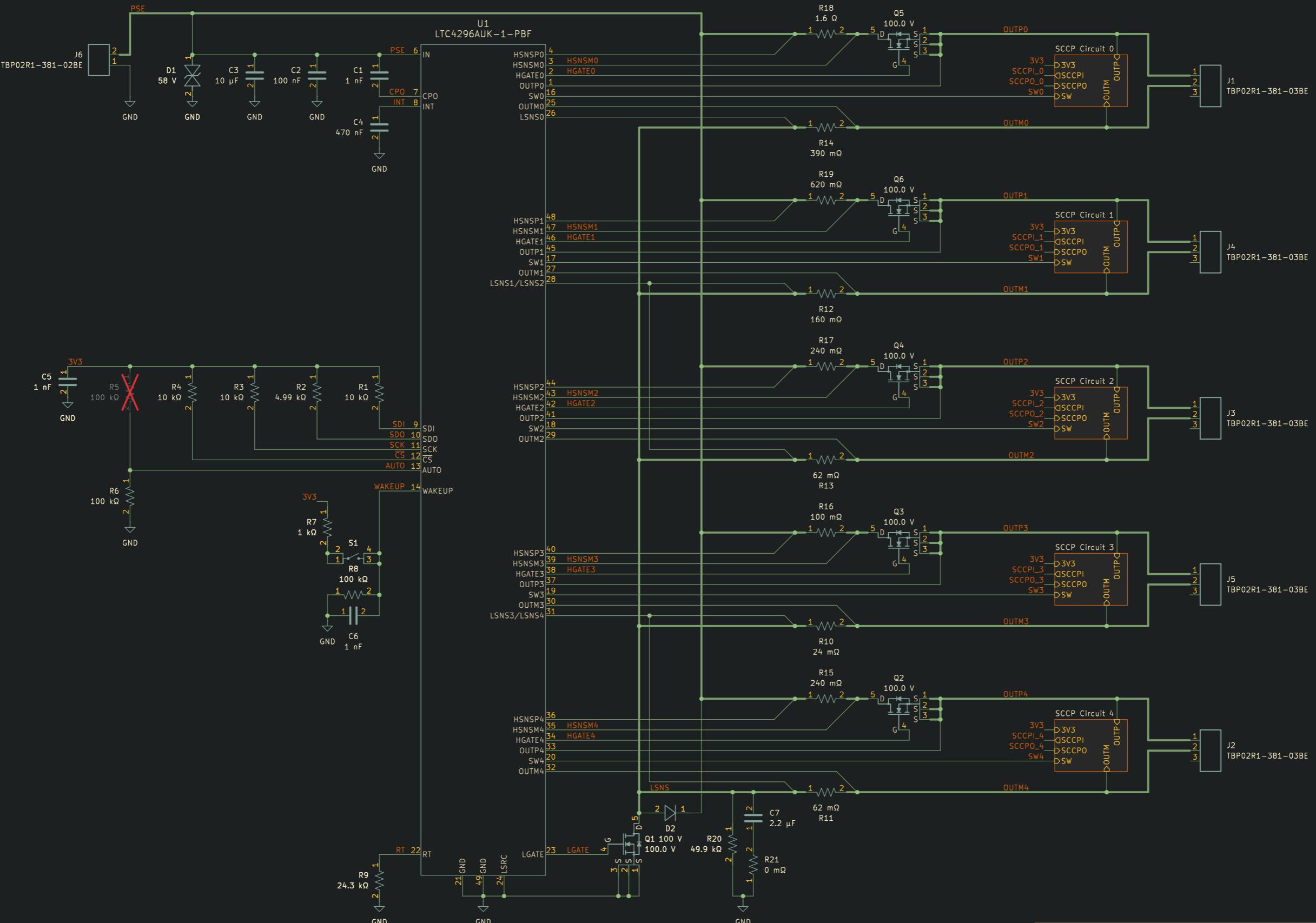Sheet: /
File: minimal_ltc4296-1.kicad_sch
Title:
Size: A3   Date:
KiCad E.D.A. 9.0.4   Rev:
Id: 1/6

U1
LTC4296AUK-1-PBF

J6
TBP02R1-381-02BE

PSE
PSE

D1
58 V
GND

C3
10 µF
GND

C2
100 nF
GND

C1
1 nF
GND

C4
470 nF
GND

IN
CPO 7 CPO
INT 8 INT

HSNSP0 4
HSNSM0 3   HSNSM0
HGATE0 2   HGATE0
OUTP0 1
SW0 16
OUTM0 25
LSNS0 26

R18
1.6 Ω
Q5
100.0 V
OUTP0

SCCP Circuit 0
3V3   3V3
SCCPI_0   SCCPI
SCCPO_0   SCCPO
SW0   SW

J1
TBP02R1-381-03BE

R14
390 mΩ
OUTM0

C5
1 nF
3V3
GND

R5
100 kΩ

R4
10 kΩ

R3
10 kΩ

R2
4.99 kΩ

R1
10 kΩ

SDI 9 SDI
SDO 10 SDO
SCK 11 SCK
CS 12 CS
AUTO 13 AUTO

R6
100 kΩ
GND

WAKEUP 14 WAKEUP

R7
1 kΩ
3V3

S1

R8
100 kΩ

GND
C6
1 nF

HSNSP1 48
HSNSM1 47   HSNSM1
HGATE1 46   HGATE1
OUTP1 45
SW1 17
OUTM1 27
LSNS1/LSNS2 28

R19
620 mΩ
Q6
100.0 V
OUTP1

SCCP Circuit 1
3V3   3V3
SCCPI_1   SCCPI
SCCPO_1   SCCPO
SW1   SW

J4
TBP02R1-381-03BE

OUTM1

R12
160 mΩ

HSNSP2 44
HSNSM2 43   HSNSM2
HGATE2 42   HGATE2
OUTP2 41
SW2 18
OUTM2 29

R17
240 mΩ
Q4
100.0 V
OUTP2

SCCP Circuit 2
3V3   3V3
SCCPI_2   SCCPI
SCCPO_2   SCCPO
SW2   SW

J3
TBP02R1-381-03BE

OUTM2

62 mΩ
R13

HSNSP3 40
HSNSM3 39   HSNSM3
HGATE3 38   HGATE3
OUTP3 37
SW3 19
OUTM3 30
LSNS3/LSNS4 31

R16
100 mΩ
Q3
100.0 V
OUTP3

SCCP Circuit 3
3V3   3V3
SCCPI_3   SCCPI
SCCPO_3   SCCPO
SW3   SW

J5
TBP02R1-381-03BE

OUTM3

R10
24 mΩ

HSNSP4 36
HSNSM4 35   HSNSM4
HGATE4 34   HGATE4
OUTP4 33
SW4 20
OUTM4 32

R15
240 mΩ
Q2
100.0 V
OUTP4

SCCP Circuit 4
3V3   3V3
SCCPI_4   SCCPI
SCCPO_4   SCCPO
SW4   SW

J2
TBP02R1-381-03BE

LSNS
62 mΩ
R11
OUTM4

RT 22 RT

R9
24.3 kΩ
GND

GND 21 GND
GND 49 GND
LSRC 24 LSRC

LGATE 23 LGATE

D2
Q1 100 V
100.0 V

R20
49.9 kΩ

R21
0 mΩ

C7
2.2 µF
GND

GND

POWER SNUBBER

AUXILIARY SNUBBER

SERIAL COMMUNICATION AND CLASIFICATION PROTOCOL DRIVERS

OUTP

D3
100 V

C13
2.2 µF

GND

3V3

R27
4.99 kΩ

R42
20 Ω

SWD

R32
10 kΩ

C18
2.2 nF

Q7
100 V

R37
5.1 Ω

OUTM

C8
100 nF

R22
49.9 Ω

3V3

R47
49.9 kΩ

D8
30.0 V

Q12
80 V

R57
10 kΩ

SCCPI

R52
100 Ω

D13
30.0 V

GND

GND

C23
2.2 nF

Q17
100 V

R67
4.99 kΩ

SCCPO

Q22
40 V

R62
5.1 Ω

GND

GND

POWER
SNUBBER

AUXILIARY
SNUBBER

SERIAL COMMUNICATION AND
CLASIFICATION PROTOCOL DRIVERS

OUTP

D4
100 V

C14
2.2 µF

GND

3V3   3V3

R28
4.99 kΩ

R43
20 Ω

SWD

R33
10 kΩ

C19
2.2 nF

Q8
100 V

R38
5.1 Ω

OUTM

C9
100 nF

R23
49.9 Ω

3V3

R48
49.9 kΩ

D9
30.0 V

Q13
80 V

R58
10 kΩ

SCCPI

R53
100 Ω

D14
30.0 V

GND   GND

C24
2.2 nF

Q18
100 V

R68
4.99 kΩ

SCCPO

Q23
40 V

R63
5.1 Ω

GND   GND

POWER
SNUBBER

AUXILIARY
SNUBBER

SERIAL COMMUNICATION AND
CLASIFICATION PROTOCOL DRIVERS

OUTP

3V3   3V3

SWD

OUTM

D5
100 V

C15
2.2 µF

GND

R29
4.99 kΩ

R44
20 Ω

R34
10 kΩ

C20
2.2 nF

Q9
100 V

R39
5.1 Ω

C10
100 nF

R24
49.9 Ω

3V3

R49
49.9 kΩ

D10
30.0 V

Q14
80 V

R59
10 kΩ

SCCPI

R54
100 Ω

D15
30.0 V

GND   GND

C25
2.2 nF

Q19
100 V

R69
4.99 kΩ

SCCPO

Q24
40 V

R64
5.1 Ω

GND   GND

POWER
SNUBBER

AUXILIARY
SNUBBER

SERIAL COMMUNICATION AND
CLASIFICATION PROTOCOL DRIVERS

OUTP

D6
100 V

C16
2.2 µF

GND

3V3

SWD

R30
4.99 kΩ

R45
20 Ω

R35
10 kΩ

C21
2.2 nF

Q10
100 V

R40
5.1 Ω

OUTM

C11
100 nF

R25
49.9 Ω

3V3

R50
49.9 kΩ

D11
30.0 V

Q15
80 V

R60
10 kΩ

SCCPI

R55
100 Ω

D16
30.0 V

GND

GND

C26
2.2 nF

Q20
100 V

R70
4.99 kΩ

SCCPO

Q25
40 V

R65
5.1 Ω

GND

GND

POWER
SNUBBER

AUXILIARY
SNUBBER

SERIAL COMMUNICATION AND
CLASIFICATION PROTOCOL DRIVERS

OUTP

D7
100 V

C17
2.2 µF

GND

3V3   3V3

R31
4.99 kΩ

R46
20 Ω

SWD

R36
10 kΩ

C22
2.2 nF

Q11
100 V

R41
5.1 Ω

OUTM

C12
100 nF

R26
49.9 Ω

3V3

R51
49.9 kΩ

D12
30.0 V

Q16
80 V

R61
10 kΩ

SCCPI

R56
100 Ω

D17
30.0 V

GND   GND

C27
2.2 nF

Q21
100 V

R71
4.99 kΩ

SCCPO

Q26
40 V

R66
5.1 Ω

GND   GND