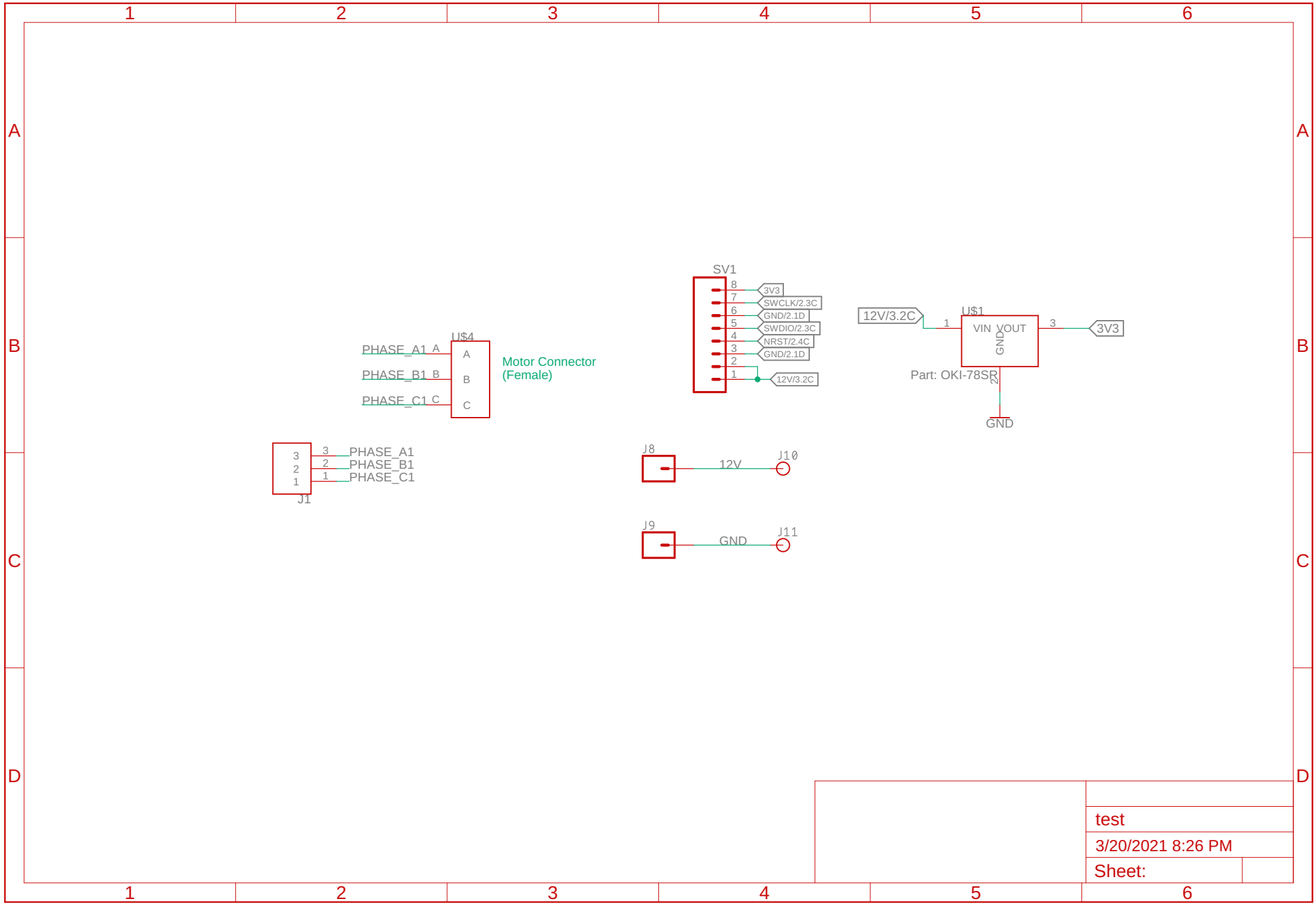
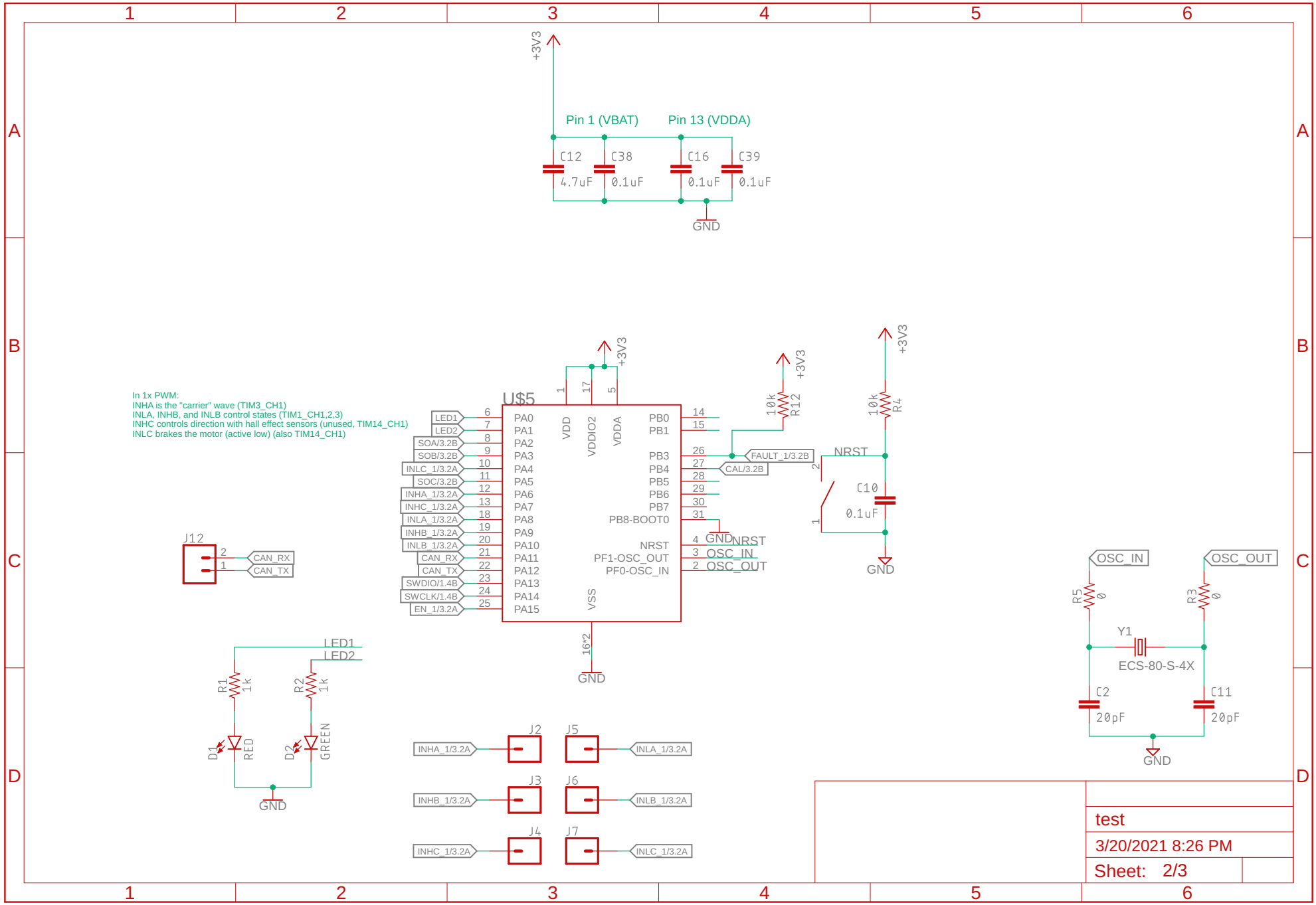

SV1
8
7
6
5
4
3
2
1
3V3
SWCLK/2.3C
GND/2.1D
SWDIO/2.3C
NRST/2.4C
GND/2.1D
12V/3.2C
U$4
PHASE_A1 A
PHASE_B1 B
PHASE_C1 C
A
B
C
Motor Connector
(Female)
12V/3.2C
1
U$1
VIN VOUT
GND
3
3V3
Part: OKI-78SR
2
GND
3
2
1
J1
3 PHASE_A1
2 PHASE_B1
1 PHASE_C1
J8
12V
J10
J9
GND
J11
test
3/20/2021 8:26 PM
Sheet:


+3V3
Pin 1 (VBAT)
Pin 13 (VDDA)
C12
4.7uF
C38
0.1uF
C16
0.1uF
C39
0.1uF
GND
In 1x PWM:
INHA is the "carrier" wave (TIM3_CH1)
INLA, INHB, and INLB control states (TIM1_CH1,2,3)
INHC controls direction with hall effect sensors (unused, TIM14_CH1)
INLC brakes the motor (active low) (also TIM14_CH1)
U$5
LED1
LED2
SOA/3.2B
SOB/3.2B
INLC_1/3.2A
SOC/3.2B
INHA_1/3.2A
INHC_1/3.2A
INLA_1/3.2A
INHB_1/3.2A
INLB_1/3.2A
CAN_RX
CAN_TX
SWDIO/1.4B
SWCLK/1.4B
EN_1/3.2A
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9
PA10
PA11
PA12
PA13
PA14
PA15
VDD
VDDIO2
VDDA
VSS
PB0
PB1
PB3
PB4
PB5
PB6
PB7
PB8-BOOT0
NRST
PF1-OSC_OUT
PF0-OSC_IN
FAULT_1/3.2B
CAL/3.2B
OSC_IN
OSC_OUT
16*2
10k
R12
10k
R4
NRST
C10
0.1uF
J12
R1
1k
R2
1k
D1
RED
D2
GREEN
J2
J5
J3
J6
J4
J7
R5
0
R3
0
Y1
ECS-80-S-4X
C2
20pF
C11
20pF
test
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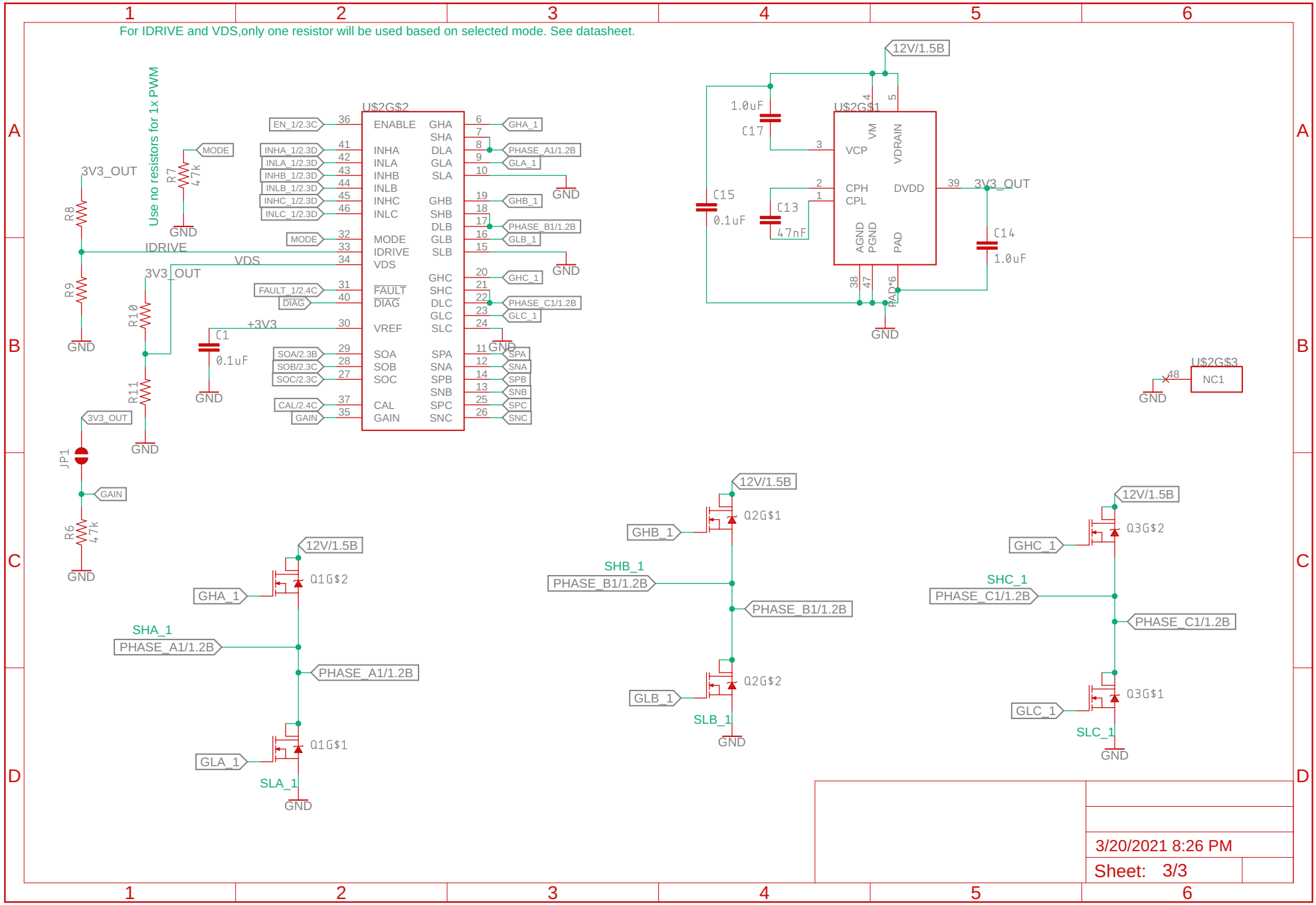
Sheet: 2/3


For IDRIVE and VDS,only one resistor will be used based on selected mode. See datasheet.
Use no resistors for 1x PWM
U$2G$2
ENABLE
INHA
INLA
INHB
INLB
INHC
INLC
MODE
IDRIVE
VDS
FAULT
DIAG
VREF
SOA
SOB
SOC
CAL
GAIN
GHA
SHA
DLA
GLA
SLA
GHB
SHB
DLB
GLB
SLB
GHC
SHC
DLC
GLC
SLC
SPA
SNA
SPB
SNB
SPC
SNC
EN_1/2.3C
INHA_1/2.3D
INLA_1/2.3D
INHB_1/2.3D
INLB_1/2.3D
INHC_1/2.3D
INLC_1/2.3D
FAULT_1/2.4C
SOA/2.3B
SOB/2.3C
SOC/2.3C
CAL/2.4C
3V3_OUT
+3V3
GND
R7 47k
R8
R9
R10
R11
R6 47k
C1 0.1uF
JP1
12V/1.5B
U$2G$1
VCP
VM
VDRAIN
CPH
CPL
DVDD
AGND
PGND
PAD
C17 1.0uF
C15 0.1uF
C13 47nF
C14 1.0uF
U$2G$3
NC1
Q1G$2
Q1G$1
Q2G$1
Q2G$2
Q3G$2
Q3G$1
GHA_1
GLA_1
GHB_1
GLB_1
GHC_1
GLC_1
SHA_1
SLA_1
SHB_1
SLB_1
SHC_1
SLC_1
PHASE_A1/1.2B
PHASE_B1/1.2B
PHASE_C1/1.2B
3/20/2021 8:26 PM
Sheet: 3/3