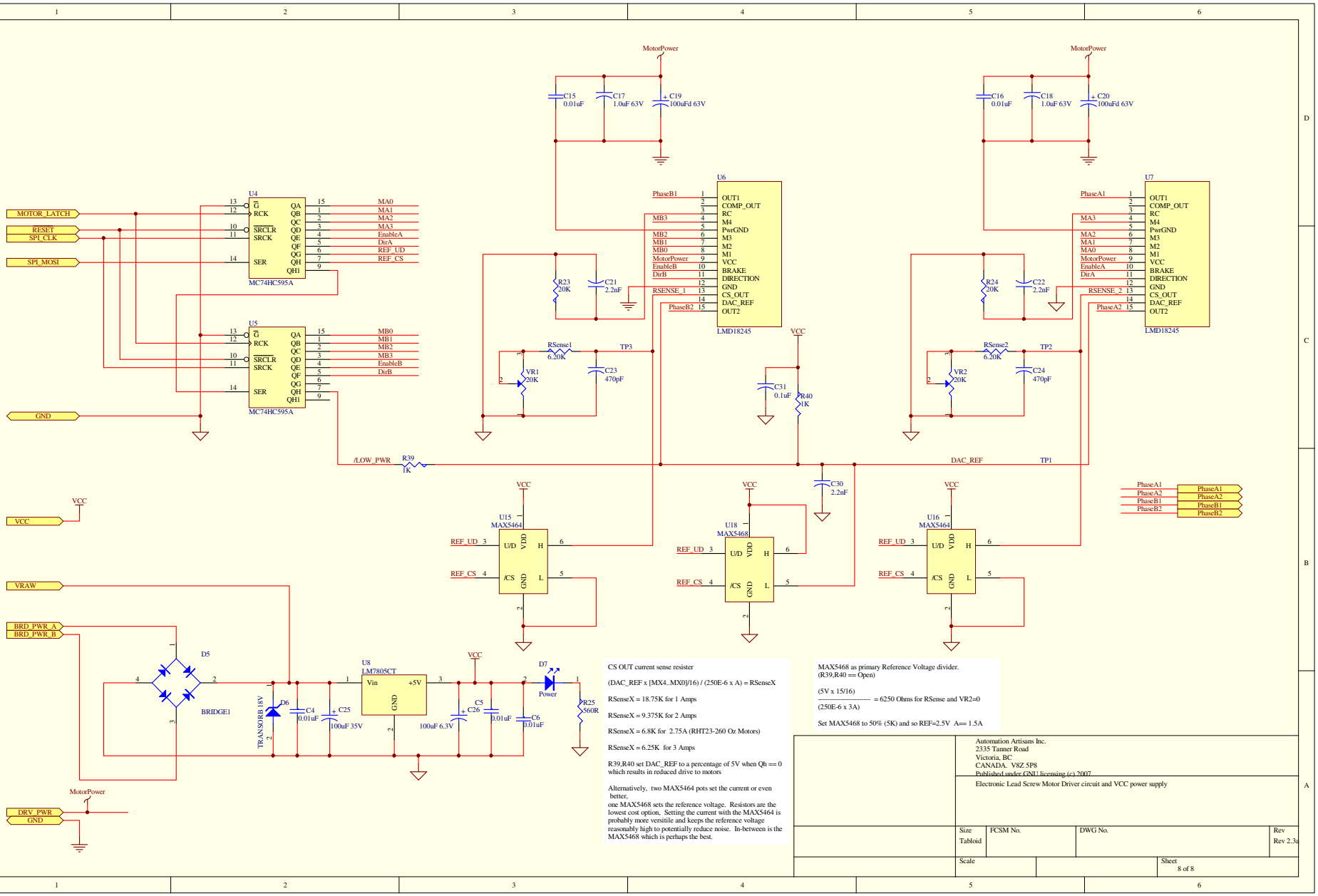
MotorPower
C15 0.01uF
C17 1.0uF 63V
C19 100uFd 63V
U6
LMD18245
PhaseB1
MB3
MB2
MB1
MB0
MotorPower
EnableB
DirB
RSENSE_1
PhaseB2
OUT1
COMP_OUT
RC
M4
PwrGND
M3
M2
M1
VCC
BRAKE
DIRECTION
GND
CS_OUT
DAC_REF
OUT2
R23 20K
C21 2.2nF
RSense1 6.20K
TP3
VR1 20K
C23 470pF
C31 0.1uF
R40 1K
VCC
MOTOR_LATCH
RESET
SPI_CLK
SPI_MOSI
GND
U4
U5
MC74HC595A
MA0
MA1
MA2
MA3
EnableA
DirA
REF_UD
REF_CS
MB0
MB1
MB2
MB3
EnableB
DirB
/LOW_PWR
R39 1K
DAC_REF
TP1
C30 2.2nF
U15
U16
U18
MAX5464
REF_UD
REF_CS
U/D
/CS
VDD
GND
H
L
PhaseA1
PhaseA2
PhaseB1
PhaseB2
VRAW
BRD_PWR_A
BRD_PWR_B
D5
BRIDGE1
D6
TRANSORB 18V
C4 0.01uF
C25 100uF 35V
U8
LM7805CT
Vin
+5V
GND
C5 100uF 6.3V
C26 0.01uF
C6 0.01uF
D7
Power
R25 560R
DRV_PWR
GND
CS OUT current sense resister
(DAC_REF x [MX4..MX0])/16) / (250E-6 x A) = RSenseX
RSenseX = 18.75K for 1 Amps
RSenseX = 9.375K for 2 Amps
RSenseX = 6.8K for 2.75A (RHT23-260 Oz Motors)
RSenseX = 6.25K for 3 Amps
R39,R40 set DAC_REF to a percentage of 5V when Qh == 0 which results in reduced drive to motors
Alternatively, two MAX5464 pots set the current or even better,
one MAX5468 sets the reference voltage. Resistors are the lowest cost option, Setting the current with the MAX5464 is probably more versitile and keeps the reference voltage reasonably high to potentially reduce noise. In-between is the MAX5468 which is perhaps the best.
MAX5468 as primary Reference Voltage divider.
(R39,R40 == Open)
(5V x 15/16)
---------- = 6250 Ohms for RSense and VR2=0
(250E-6 x 3A)
Set MAX5468 to 50% (5K) and so REF=2.5V A== 1.5A
Automation Artisans Inc.
2335 Tanner Road
Victoria, BC
CANADA. V8Z 5P8
Published under GNU licensing (c) 2007
Electronic Lead Screw Motor Driver circuit and VCC power supply
Size
Tabloid
FCSM No.
DWG No.
Rev
Rev 2.3a
Scale
Sheet
8 of 8