

VS

GND

B2

B1

A2

A1

GND

DIAGO

ENCA

ENCB

ENCN

VCC_IO

GND

CSN

SCK

SDI

SDO

GND

CLK16

DRV_ENN

REFL

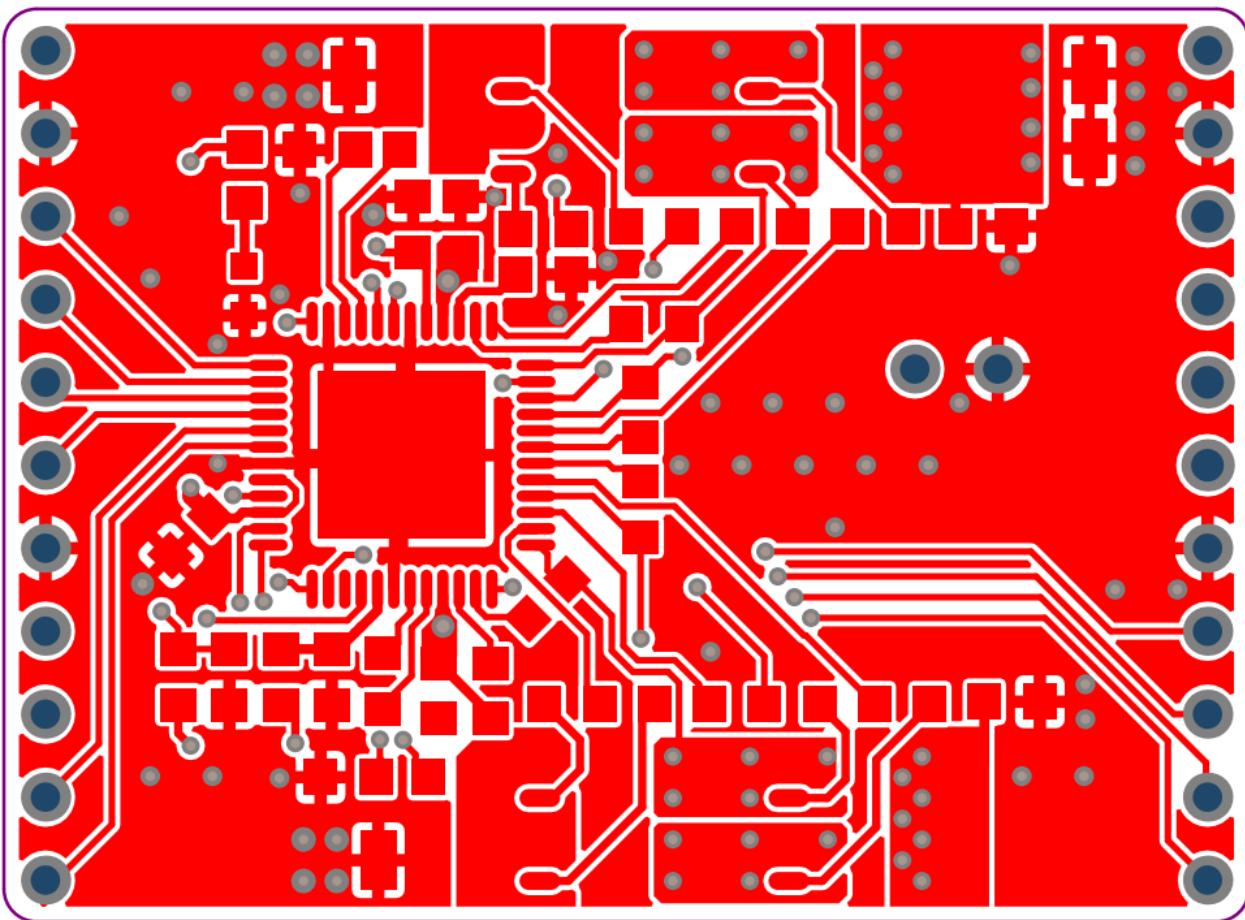
REFR

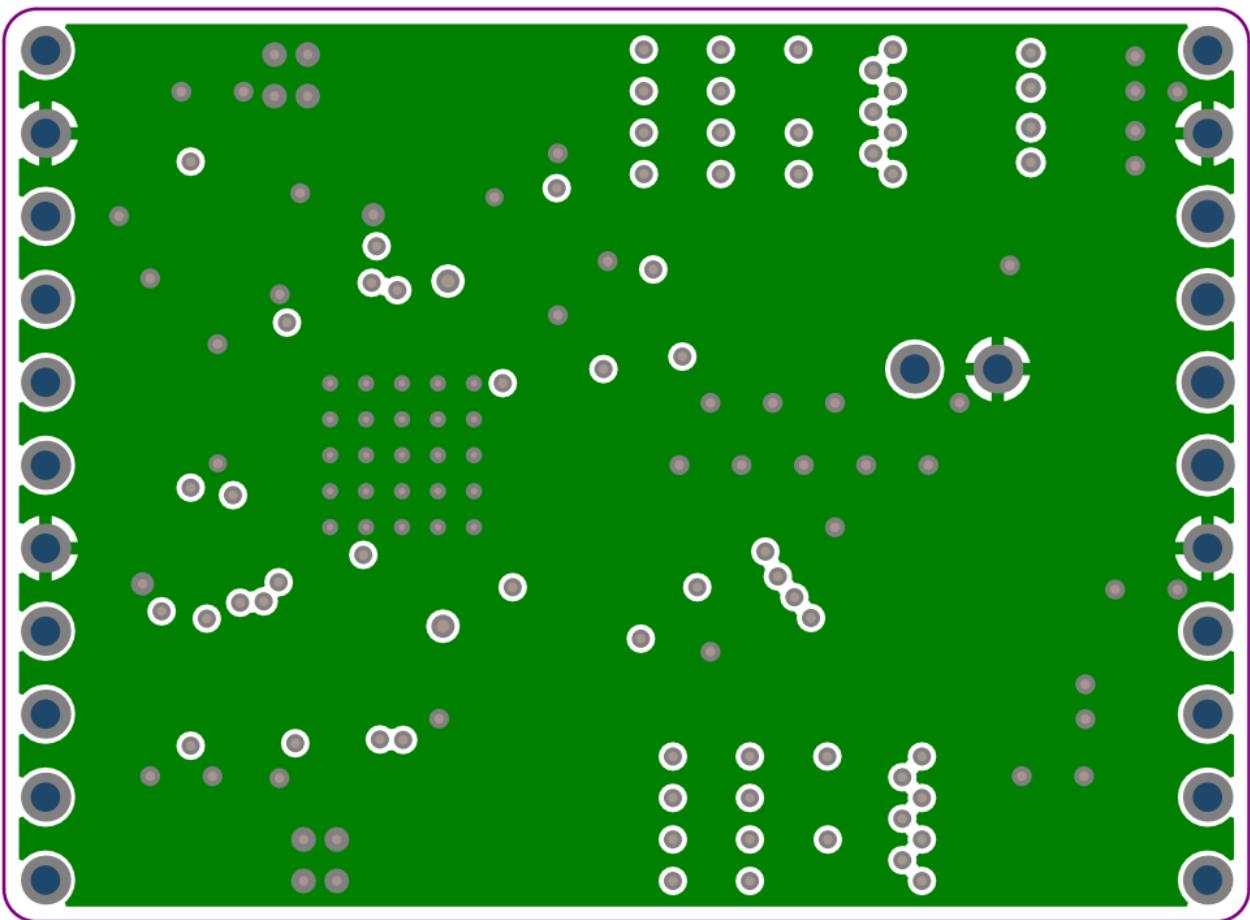
TMC5160_BOB 1.2

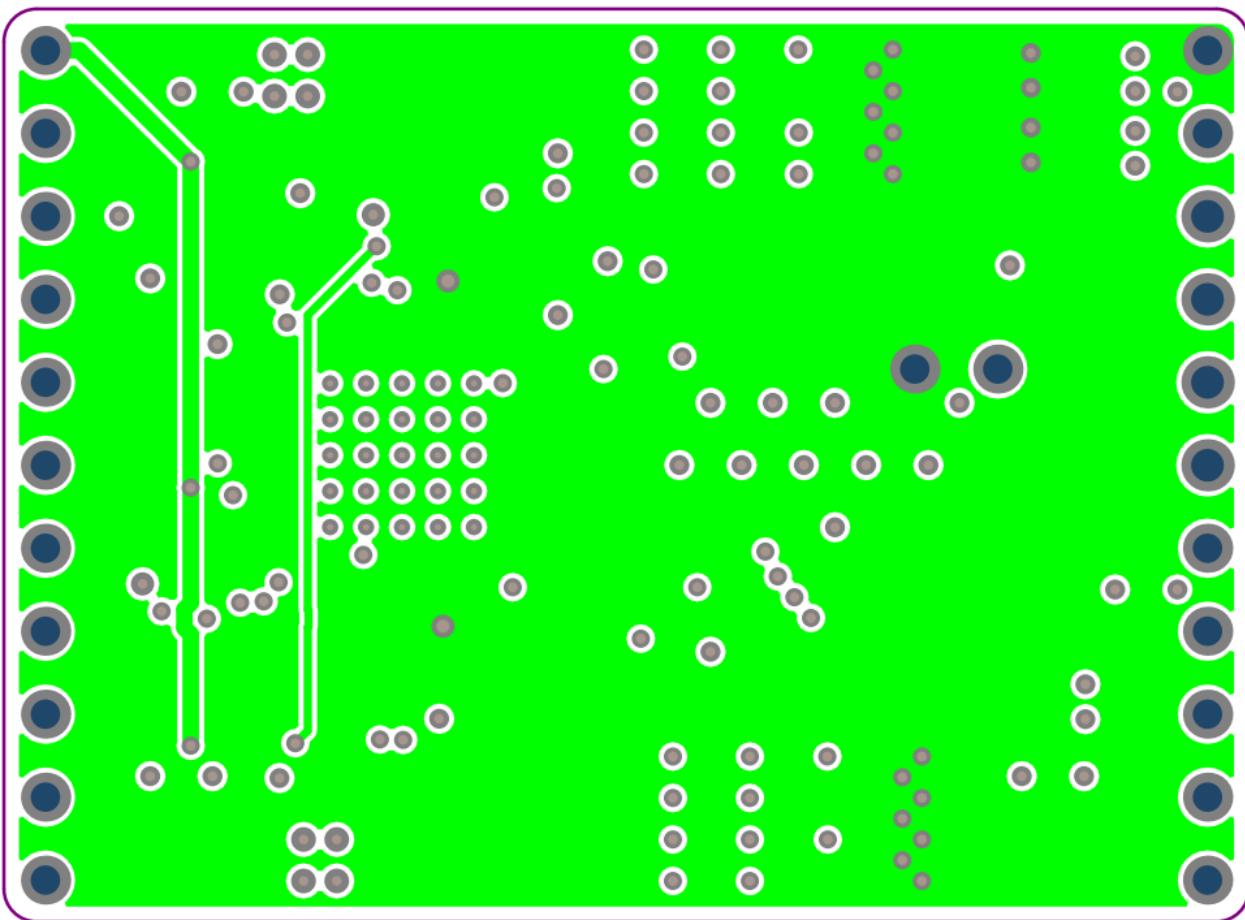
Chip: TMC5160-TA

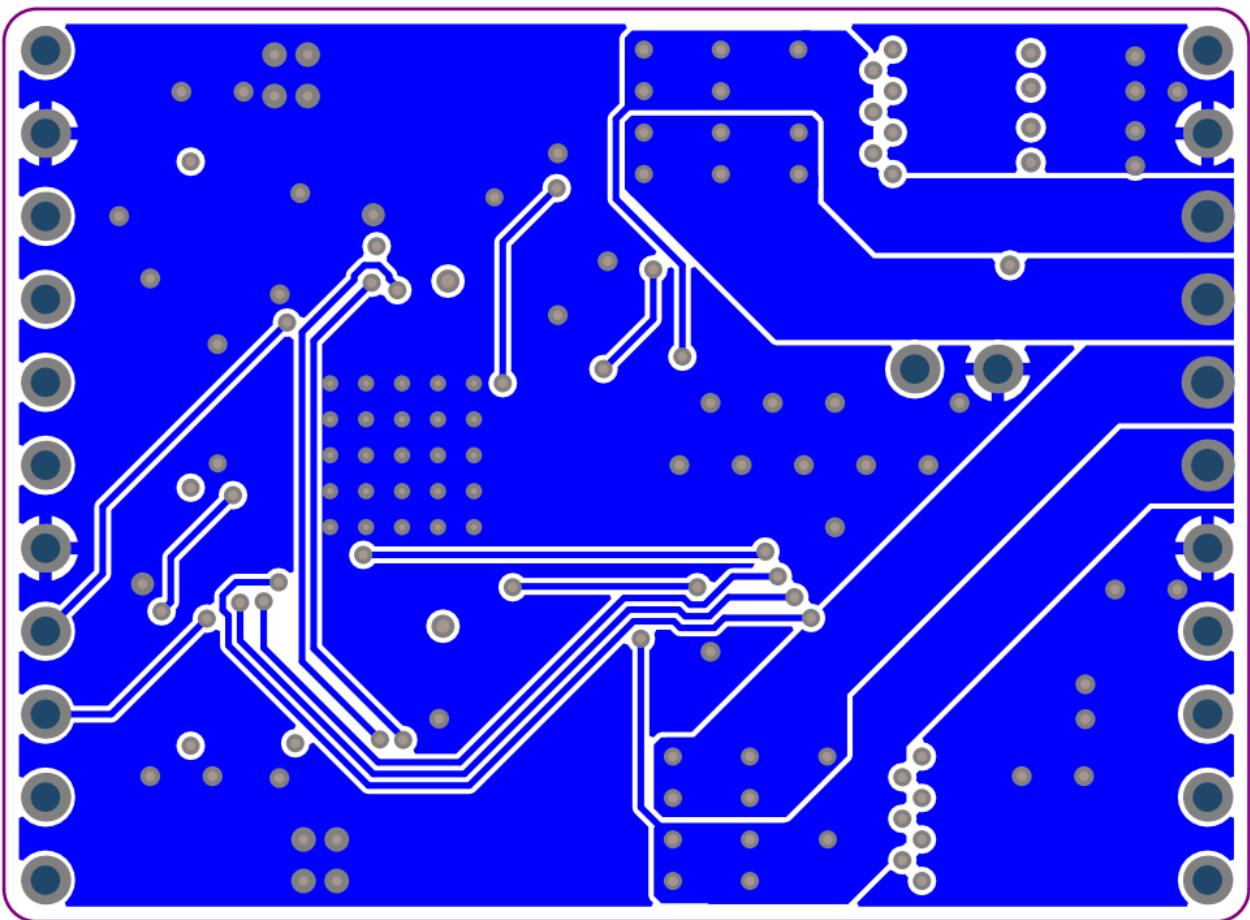
VSupply: 9...36V

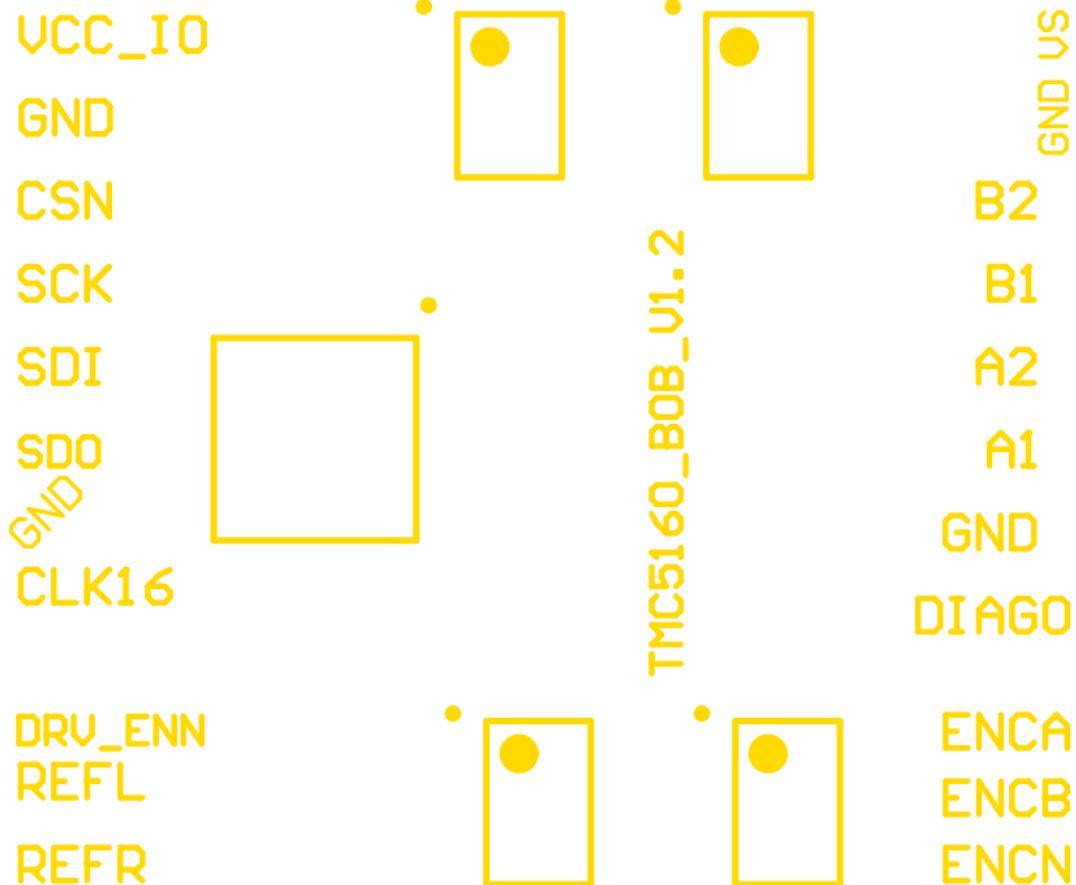
Iphase, RMS: 2.8A



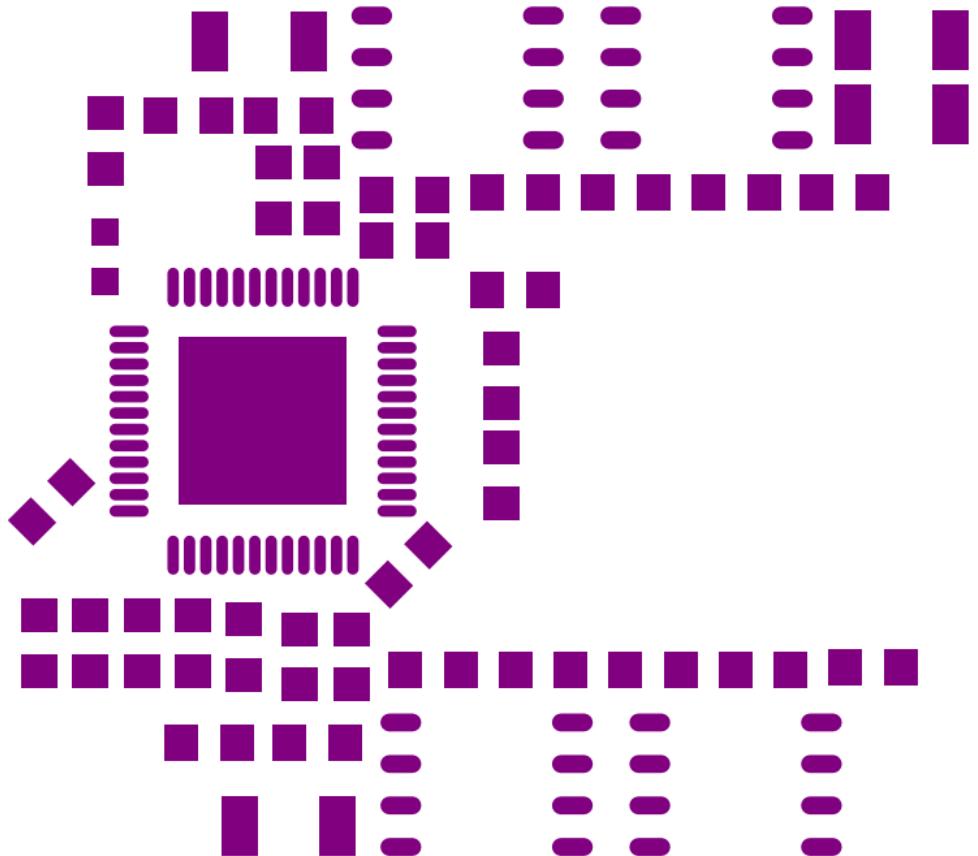








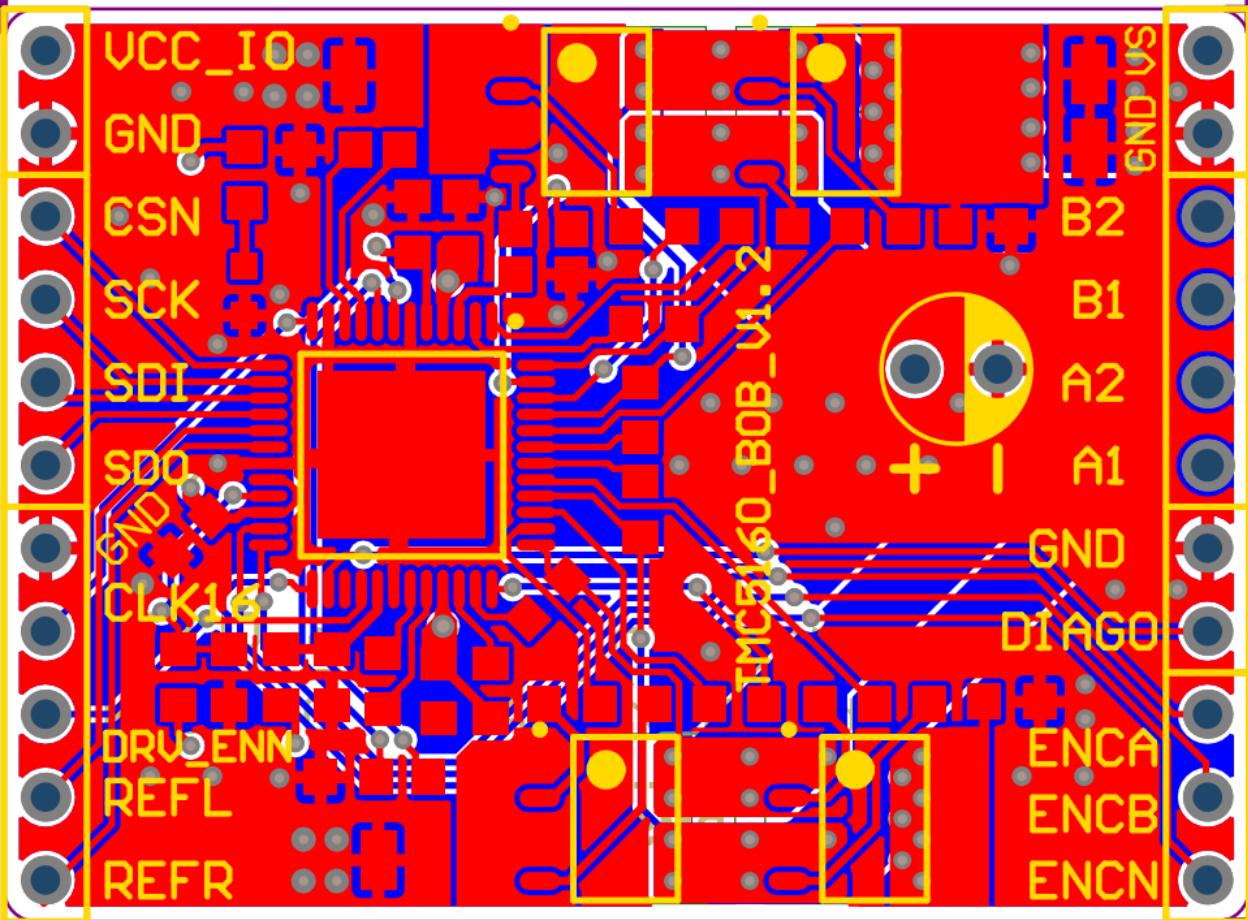
VS		VCC_IO
GND		GND
B2		CSN
B1		SCK
A2		SDI
A1		SDO
GND		GND
DIAGO	TMC5160_BOB 1.2	CLK16
ENCA	Chip: TMC5160-TA	DRV_ENN
ENCB	VSupply: 9...36V	REFL
ENCN	Iphase, RMS: 2.8A	REFR



1,50

1,10

1, 50



1, 10

ChangeLog

V1.0 - Initial design

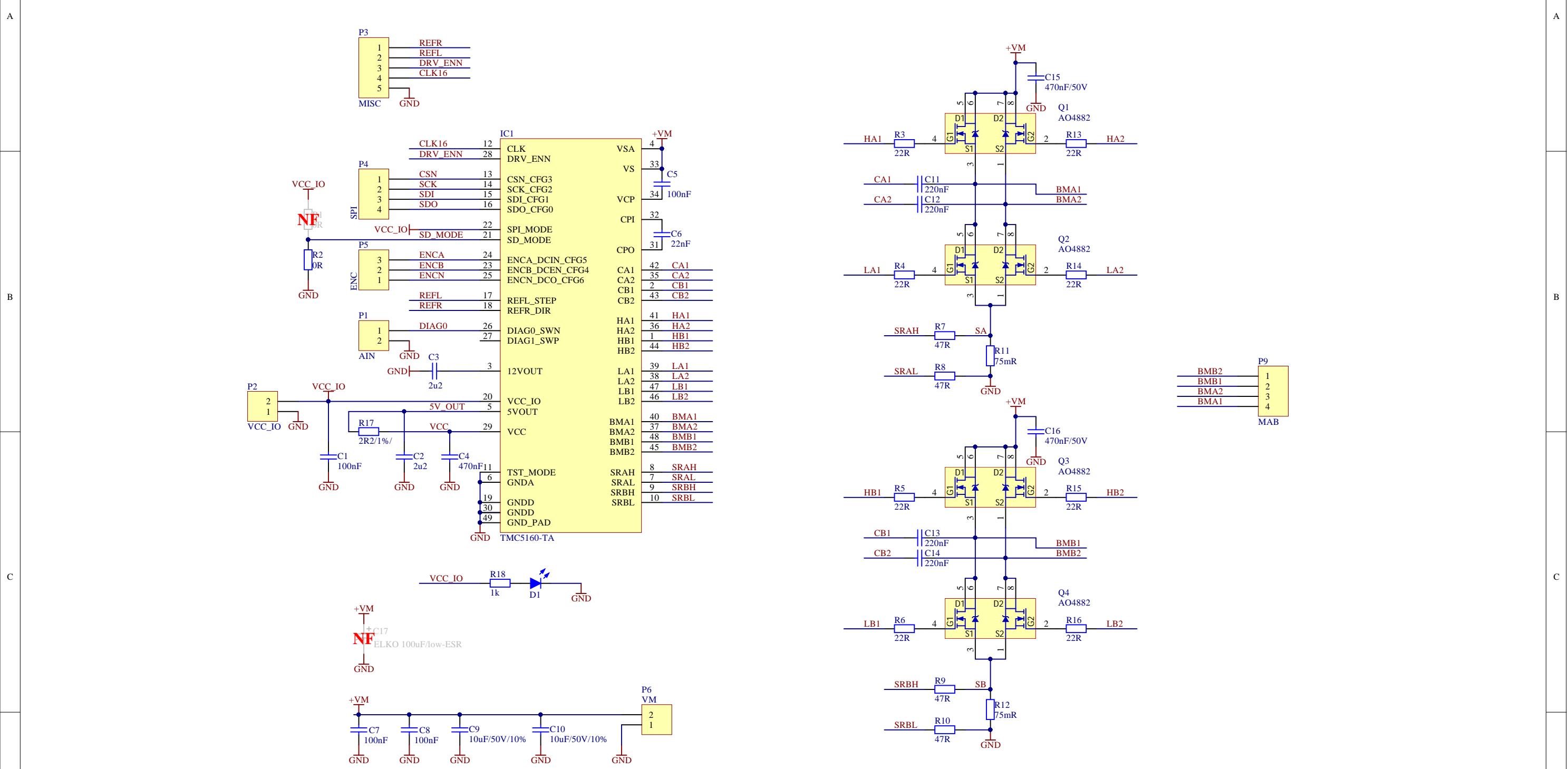
V1.1 - Cosmetics and pinheader fix

- + Changed silkscreen text width from 5mil to 7mil.
- + Changed board name text height to 35mil.
- + Changed pin hole diameters from 0.9mm to 1mm for header P9 (MAB).

V1.2 - Component value changes

- + Changed sense resistors to 75milliOhm
- + Changed optional ELKO to 100uF/low-ESR
- + Changed bottom silk values to:
 - Vsupply: 9...36V
 - Iphase,RMS: 2.8A

Title <i>TMC5160_BOB</i>		
Size A4	Number	Revision 1.2
Date: 31.08.2017	Sheet of	
File: C:\Users\...\ChangeLog.SchDoc	Drawn By:	



Title <i>TMC5160_BOB</i>		
Size A3	Number	Revision 1.2
Date: 31.08.2017	Sheet of	
File: C:\Users\...\TMC5160_BOB_V1_2.SchD	Drawn By:	

A

B

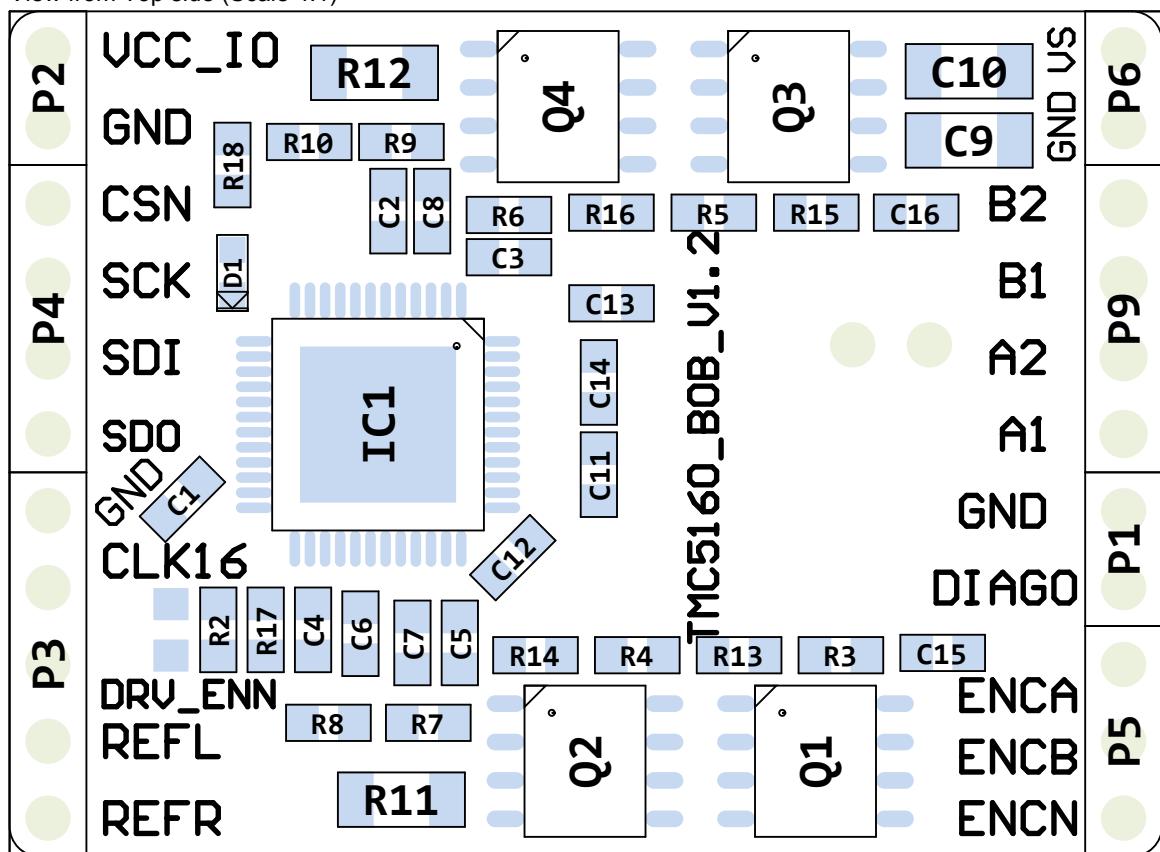
C

D

1

1

View from Top side (Scale 4:1)



2

2

3

3

4

4

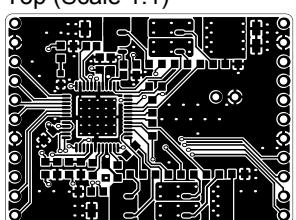
5

5

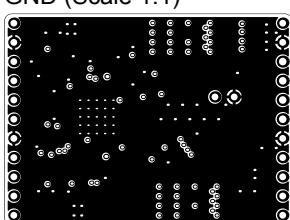
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6

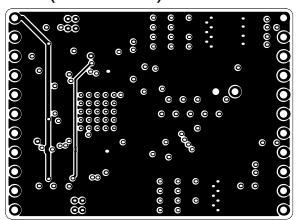
Top (Scale 1:1)



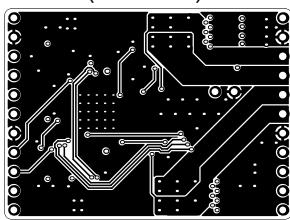
GND (Scale 1:1)



VM (Scale 1:1)



Bottom (Scale 1:1)



A

B

C

D

BOM

Project: TMC5160_BOB

Version: 1.2

Date: 31.08.2017

#	Quantity	MPN	Comment	Designator	Footprint	Description	Note	MF
1	4	MC0603F104M500CT	100nF	C1, C5, C7, C8	C0603	Ceramic capacitor		
2	2	GRM188R61E225KA12D	2u2	C2, C3	C0603	SMD Multilayer Ceramic Capacitor, 0603 [1608 Metric], 2.2 μ F, 25 V, \pm 10%, X5R, GRM Series		MURATA
3	1	MC0603X474K160CT	470nF	C4	C0603	Ceramic capacitor		Multicomp
4	1	MC0603B223K500CT	22nF	C6	C0603	Ceramic capacitor		Multicomp
5	2	GRM31CR61H106MA12L	10uF/50V/10%	C9, C10	C1206	SMD Multilayer Ceramic Capacitor, 1206 [3216 Metric], 10 μ F, 50 V, \pm 20%, X5R, GRM Series		MURATA
6	4	GCM188R71H224KA64D	220nF	C11, C12, C13, C14	C0603	SMD Multilayer Ceramic Capacitor, 0603 [1608 Metric], 0.22 μ F, 50 V, \pm 10%, X7R, GCM Series		MURATA
7	2	C1608X7R1H474K080AC	470nF/50V	C15, C16	C0603	SMD Multilayer Ceramic Capacitor, 0603 [1608 Metric], 0.47 μ F, 50 V, \pm 10%, X7R, C Series		TDK
8	1	LTST-C191TBKT-5A	LED, Blue, SMD, 20mA, 2.8V, 465 nm	D1	LED_0603	LED, Blue, SMD, 20mA, 2.8V, 465 nm		Lite-On
9	1	TMC5160-TA	TMC5160-TA	IC1	TMC5160_TSQFP50P900X900X120_HS-49L			TRINAMIC
10	4	AO4882	AO4882	Q1, Q2, Q3, Q4	SOP12TP600X170-8L	Mosfet Array 2 N-Channel (Dual) 40V 8A 2W Surface Mount 8-SOIC		Alpha & Omega Semiconductor Inc.
11	1	MCWR06X000 PTL	0R	R2	R0603	SMD Chip Resistor, Thick Film, 0 ohm, 0603 [1608 Metric], 100 mW, MCWR Series		MULTICOMP
12	8	MCWR06X22R0FTLV	22R / 100mW / 1%	R3, R4, R5, R6, R13, R14, R15, R16	R0603	SMD Chip Resistor, Thick Film, 22 ohm, 50 V, 0603 [1608 Metric], 100 mW, \pm 1%, MCWR Series		MULTICOMP
13	4	MCSR06X47R0FTL	47R / 1%	R7, R8, R9, R10	R0603	SMD Chip Resistor, Ceramic, 47 ohm, 75 V, 0603 [1608 Metric], 100 mW, \pm 1%, MCSR 06 Series		MULTICOMP
14	2	ERJ-8BWFR075V	75mR	R11, R12	R1206	SMD Chip Resistor, Thick Film, Current Sense Resistors - SMD 1W 0.075ohm 1%		Panasonic Electronic Components
15	1	MC0063W060312R2	2R2/1%	R17	R0603	Resistor		Multicomp
16	1	MC0063W060311K	1k	R18	R0603	1 kohm, 50 V, 0603 [1608 Metric], 63 mW, \pm 1%, MC Series		MULTICOMP
Approved		Notes						46

