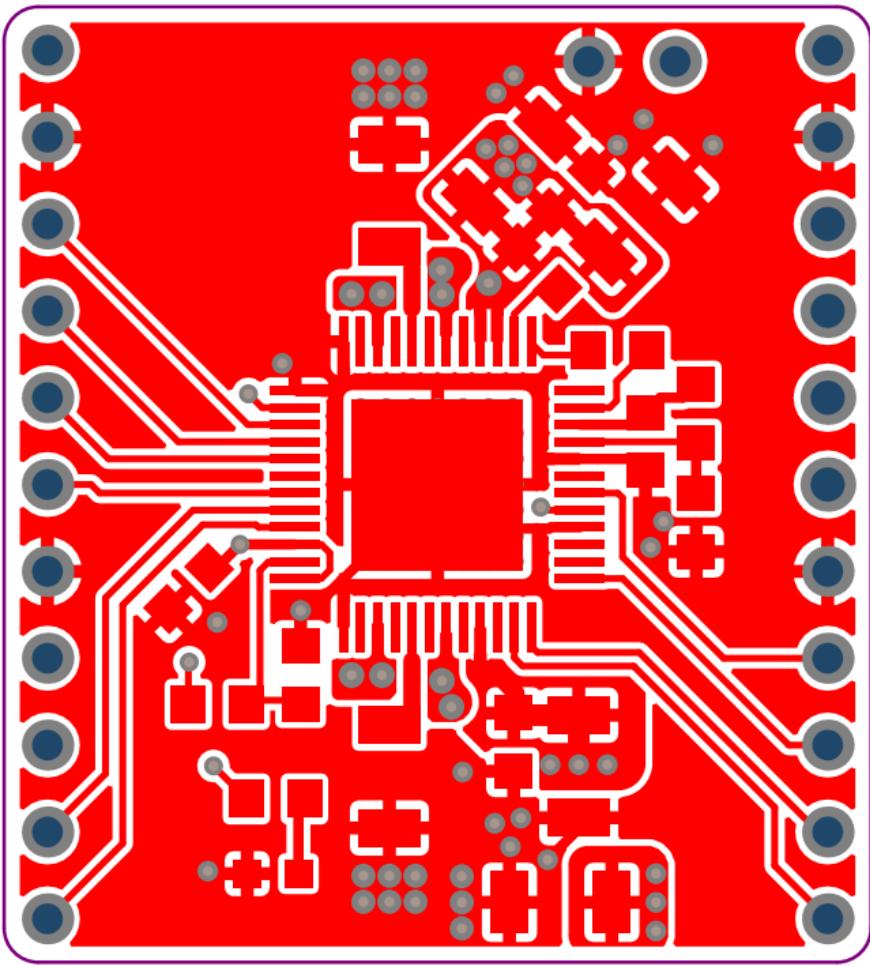
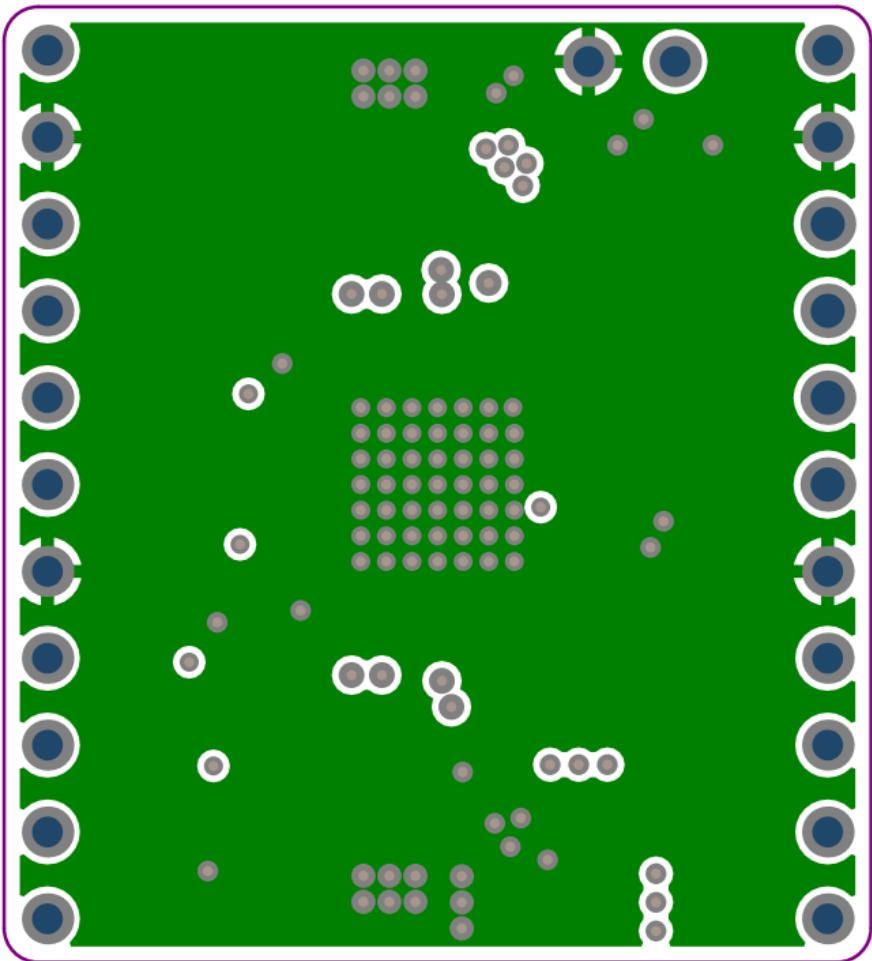
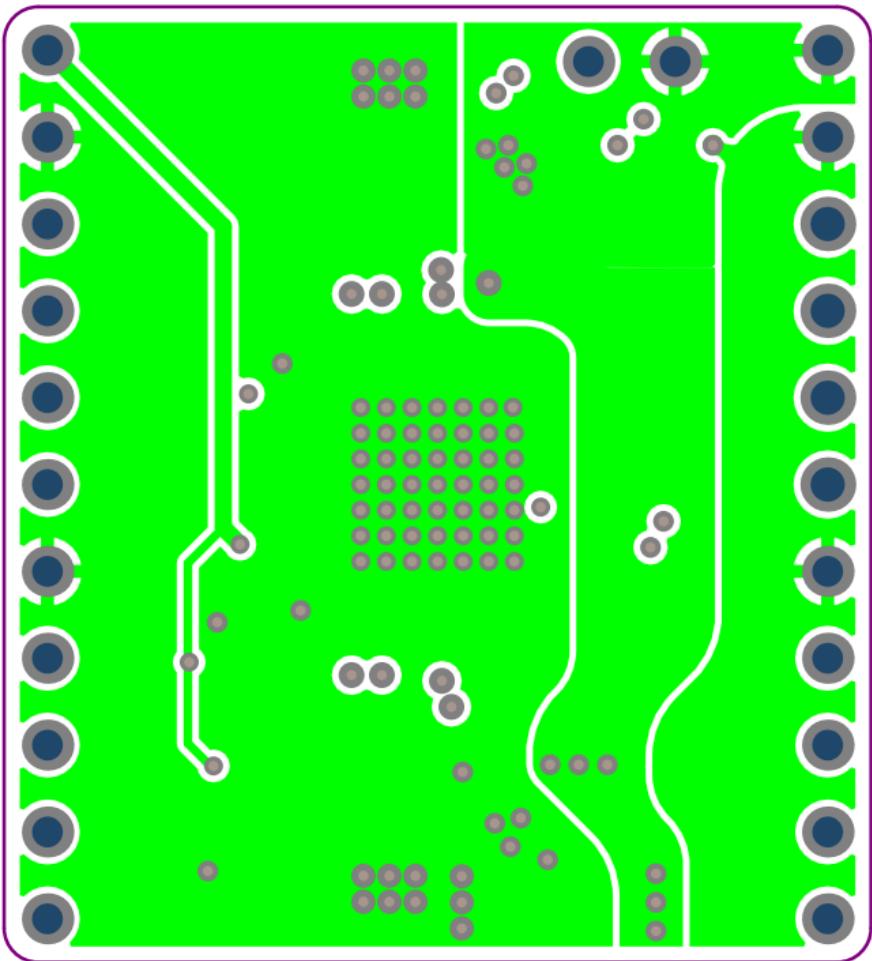


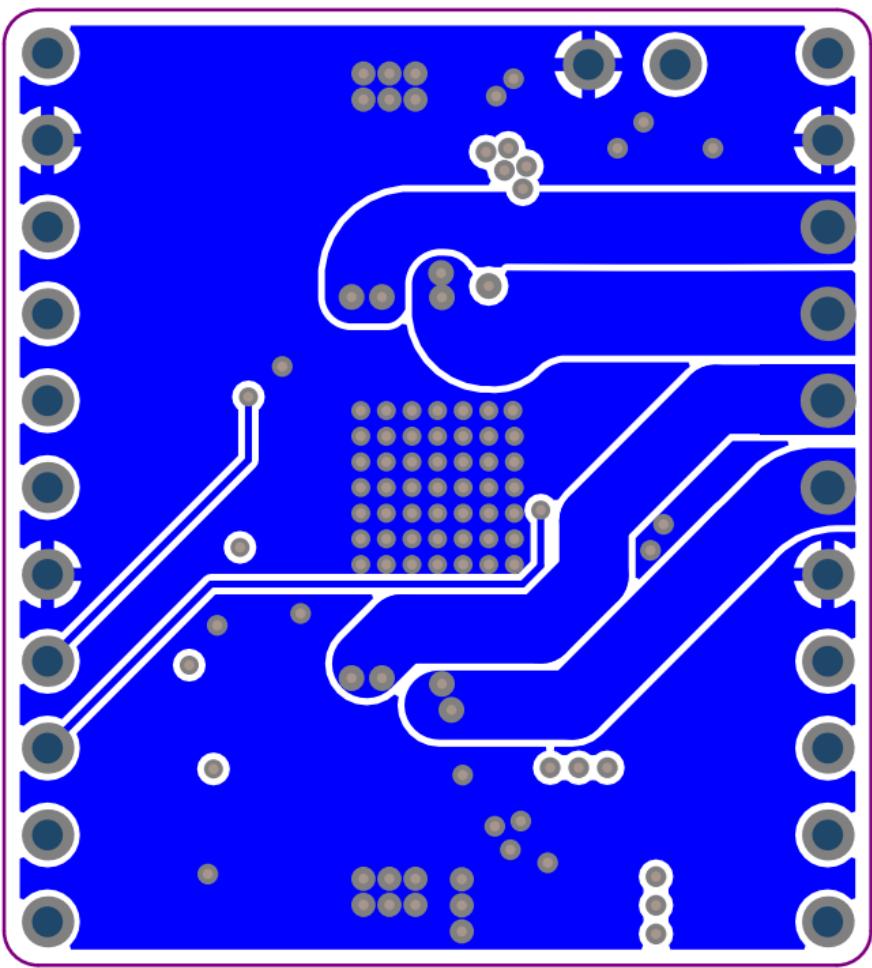
IC name: *TMC5130A-TA*

Supply range: $VS = 5 \dots 46V$
Max. current: $IRMS = 1.4A$









VCC_IO
GND
CSN
SCK
SDI
SDO
GND

TMC5130A-TA_BOB_1.20



A
1
A
2
B
1
B
2

CLK16

DRV_ENN

REFL

REFR

- GND
AIN_REF

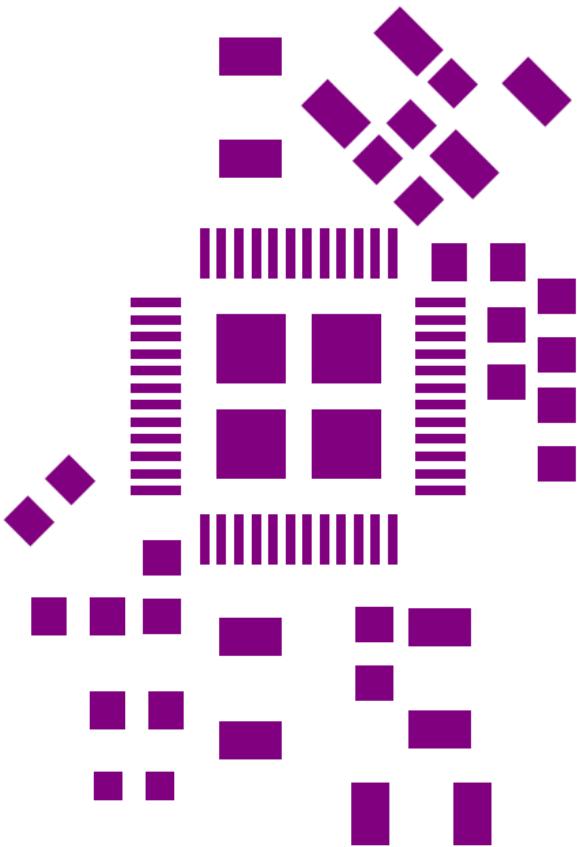
ENCA

ENCB

ENCN

VS	+	-	VCC_IO
GND			GND
A1			CSN
A2			SCK
B1			SDI
B2			SDO
GND			GND
AIN_REF			CLK16
ENCA			DRV_ENN
ENCB			REFL
ENCN			REFR

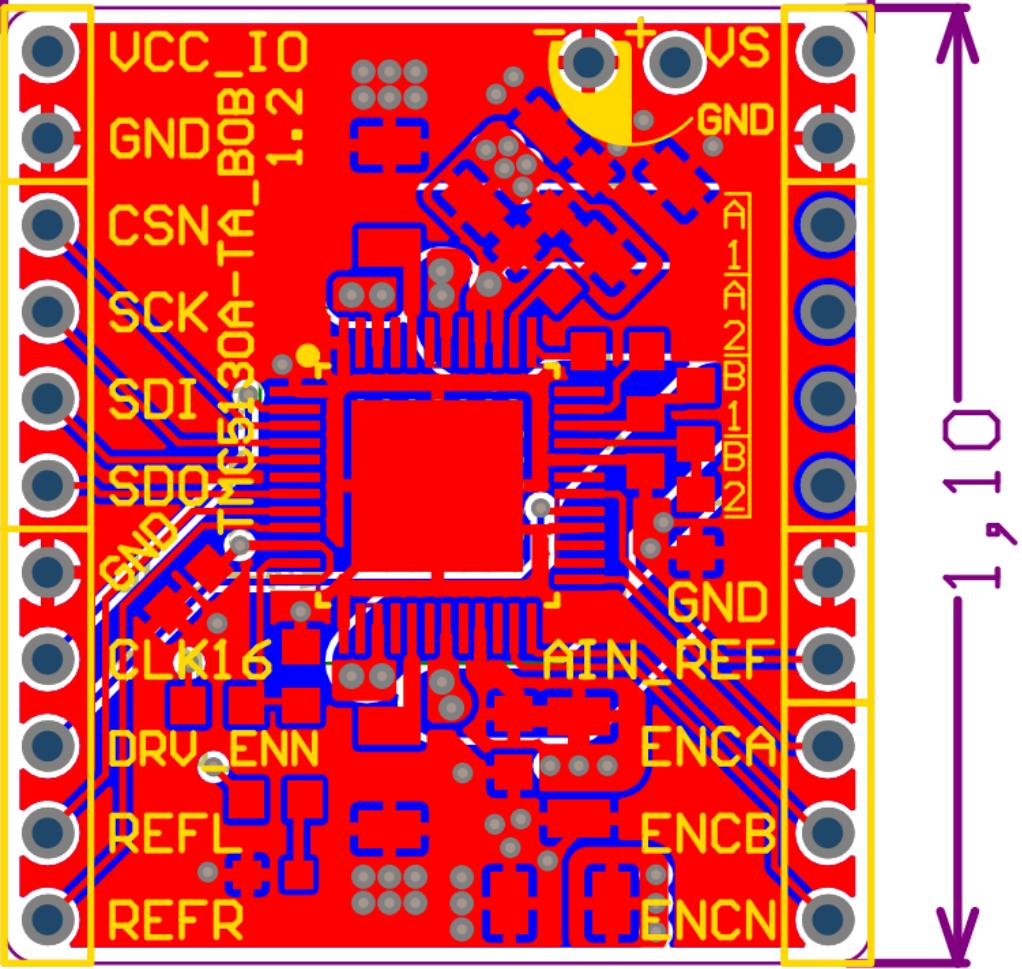
I_C name: TMc5130A-TA
 Supply range: VS = 5...46V
 Max. current: IRMS = 1.4A



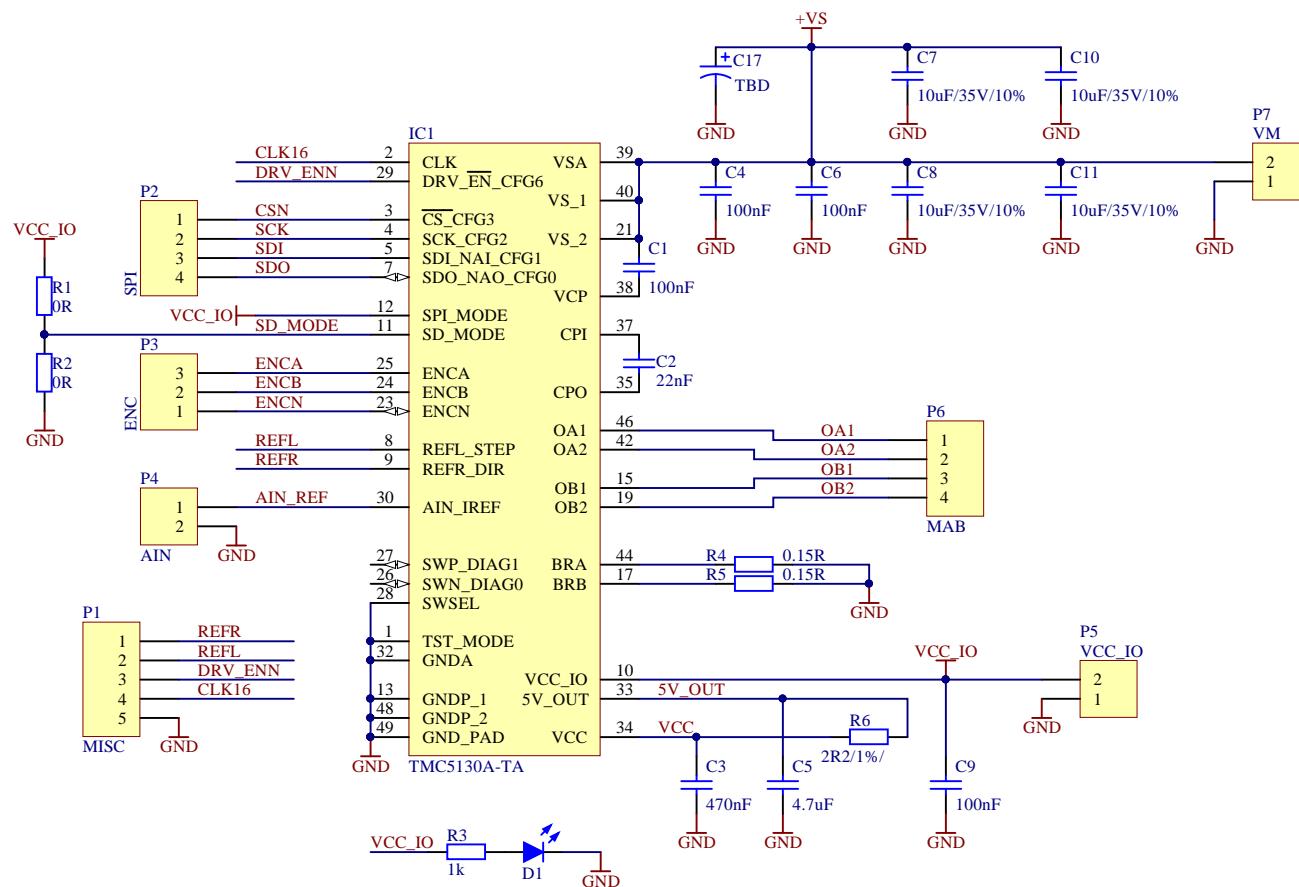
1 , 00

1 , 10

1 , 00



A



Title
TMC5130A-TA_BOB

Size	Number	Revision
A4		1.2
Date:	18.07.2017	Sheet of
File:	C:\Users\...\TMC5130A-TA_BOB_V1_2.sch	Document By:

A

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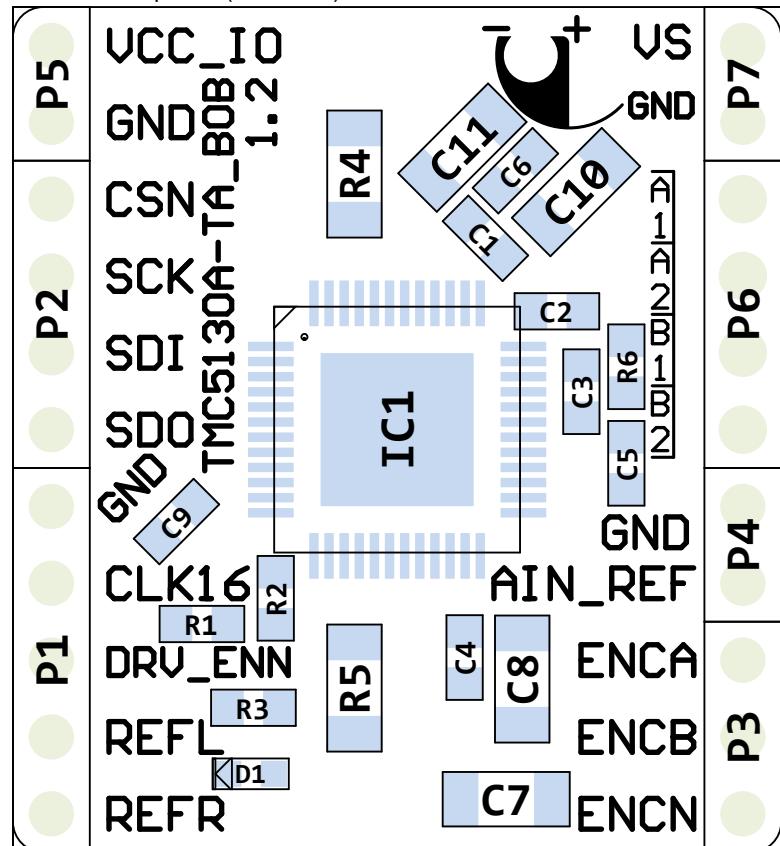
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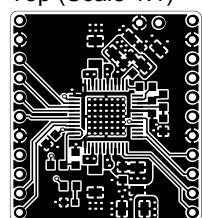
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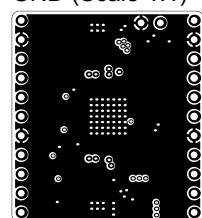
View from Top side (Scale 4:1)



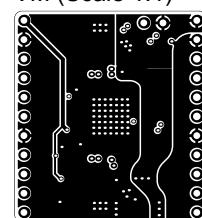
Top (Scale 1:1)



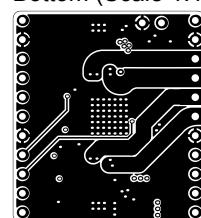
GND (Scale 1:1)



VM (Scale 1:1)



Bottom (Scale 1:1)



A

B

C

D

BOM

Project: TMC5130A-TA_BOB

Version: 1.2

Date: 18.07.2017

#	Quantity	MPN	Comment	Designator	Footprint	Description	Note	MF
1	4	MC0603F104M500CT	100nF	C1, C4, C6, C9	C0603	Ceramic capacitor		Multicomp
2	1	MC0603B223K500CT	22nF	C2	C0603	Ceramic capacitor		Multicomp
3	1	MC0603X474K160CT	470nF	C3	C0603	Ceramic capacitor		Multicomp
4	1	MC0603X475K100CT	4.7uF	C5	C0603	Ceramic capacitor		Multicomp
5	4	GRM31CC8YA106KA12L	10uF/35V/10%	C7, C8, C10, C11	C1206	Ceramic capacitor		MURATA
6	1		Cap Pol1	C17	EXT_POL_CAP_2	Polarized Capacitor (Radial)		
7	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
8	1	TMC5130A-TA	TMC5130A-TA	IC1	TMC5130_TQFP48-EP_0.5_7.0X7.0	High voltage(up to 46V) controller for two-phase bipolar stepper motor, with SPI, Step/Dir, UART, TQFP48-EP(7x7)		TRINAMIC
9	2	MCWR06X000 PTL	0R	R1, R2	R0603	SMD Chip Resistor, Thick Film, 0 ohm, 0603 [1608 Metric], 100 mW, MCWR Series		MULTICOMP
10	1	MC0063W060311K	1k	R3	R0603	1 kohm, 50 V, 0603 [1608 Metric], 63 mW, ± 1%, MC Series		MULTICOMP
11	2	ERJ-8BSFR15V	0.15R / 0.5W / 1%	R4, R5	R1206	0.15 Ohm±1% 0.5W, 1/2W Chip Resistor 1206 (3216 Metric) Automotive AEC-Q200, Current Sense Thick Film		Panasonic
12	1	MC0063W060312R2	2R2/1%	R6	R0603	Resistor		Multicomp
Approved		Notes						27

ChangeLog

V1.0 - Initial design

V1.1 - Redesign and Optimization after 1st Round

- + Rearranged right side connector signals starting from top (Made sure there is sufficient space to have a JST EH 4pin mounted there):

VS / GND / A1 / A2 / B1 / B2

- + Removed solder bridge for SPI_MODE. Connected permanently to VCCIO.
- + Modified solder bridge for SD_MODE. Default assembly with a 0Ohm R connected to GND.
- + Added 2nd option for SD_MODE to be connected to VCCIO.
- + Added 2x 10uF.
- + Added two solder holes +/- for an optional 470µF Elko.
- + Added bottom side labels (IC Name, supply range, max. current of this BOB):
TMC5130A-TA, VS = 5...46V, IphaseRMS = 1.4A
- + Changed silkscreen text width from 5mil to 7mil.
- + Changed board name text height to 35mil.

V1.2 - Changed pin hole diameters from 0.9mm to 1mm for header P6 (MAB).

Title <i>TMC5130A-TA_BOB</i>		
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Date: 18.07.2017	Sheet of	
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