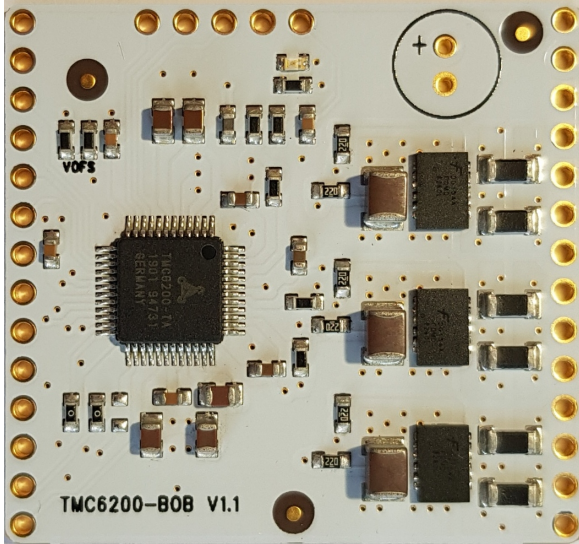


# TMC6200-BOB Description

Document Revision V1.00 • 2019-Mar-19

## Module Top View



## Features and additional Information

- TMC6200-TA 3-phase gate driver & 48V power stage
- Supply voltage 7-48V (60V limit with the onboard FETs)
- $I_{phase,peak}$  up to 10A
- Configuration via SPI, control via 3-phase PWM
- Placeholder for optional lowESR ELCO
- Standalone mode (via assembly option)
- Onboard temperature sensor
- Board width 1.5", board height 1.4"
- 2x14 pin, 1x5 pin 0.1" header rows
- Link to [additional information and IC data sheet](#)
- Link to [schematic information](#)
- Link to [evaluation kit](#)
- The MOSFETs have a very good switching characteristic: use BOB with a BBM time of ca. 250ns and lowest gate driver strength setting of TMC6200

## Pin List

Left Edge	Signal	Right Edge	Signal	Top Edge	Signal
1	VCC_IO (3.3V or 5V)	15	VM (7-48V)	29	CURW from TMC6200 Shunt Amp
2	GND	16	VM (7-48V)	30	CURV from TMC6200 Shunt Amp
3	SPL_CSN	17	GND	31	CURU from TMC6200 Shunt Amp
4	SPL_SCK	18	GND	32	GND
5	SPL_MOSI	19	U Motor Phase	33	TEMP
6	SPL_MISO	20	U Motor Phase		
7	PWM Input WL	21	U Motor Phase		
8	PWM Input WH	22	V Motor Phase		
9	PWM Input VL	23	V Motor Phase		
10	PWM Input VH	24	V Motor Phase		
11	PWM Input UL	25	W Motor Phase		
12	PWM Input UH	26	W Motor Phase		
13	DRV_EN	27	W Motor Phase		
14	FAULT	28	GND		

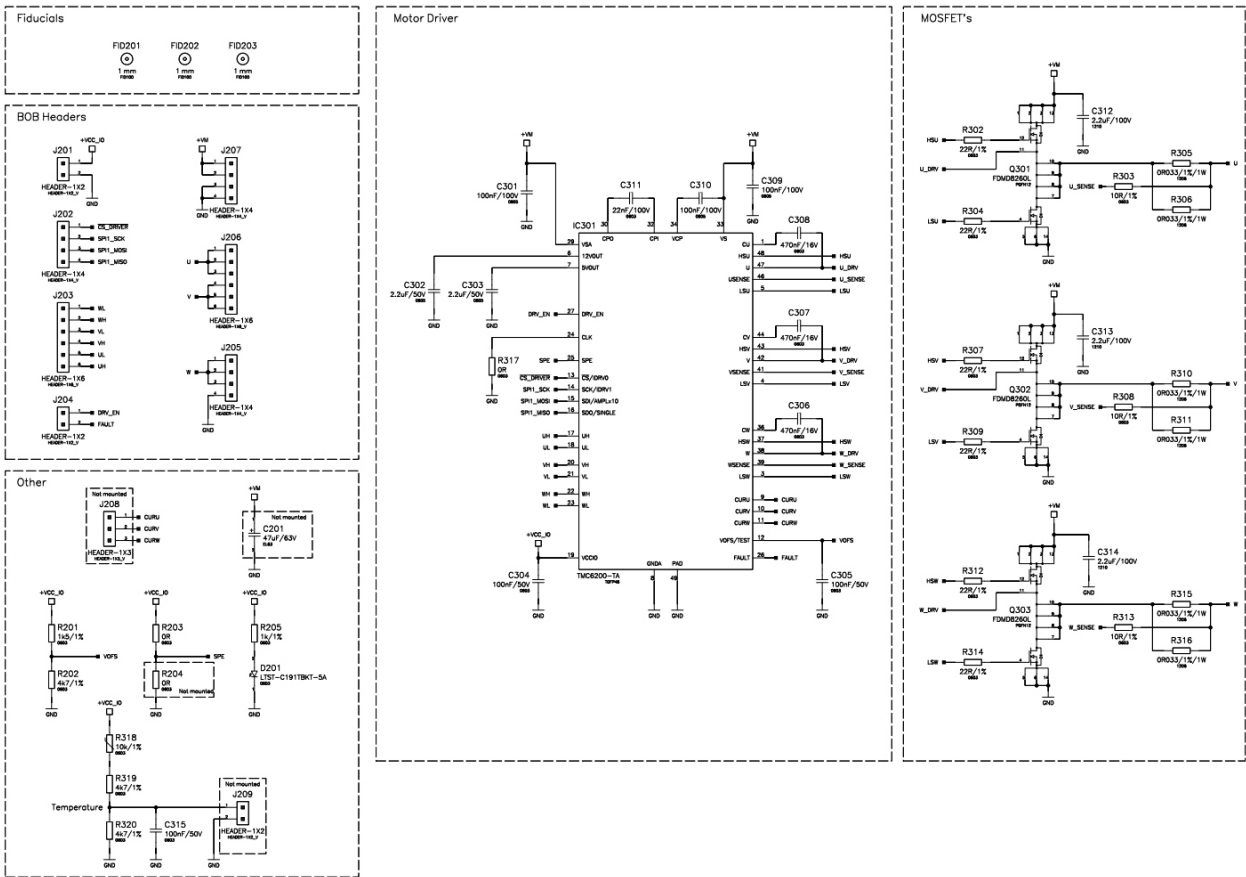
## BOM

Pcs.	MPN	Value	Footprint	Description
2	ERJ-3GEY0R00V	0R	0603	Resistor, Panasonic
6	ERJ-8CWFR033V	0R033/1%/1W	12060	Resistor, Panasonic
1	ERJ-3EKF1501V	1k5/1%	0603	Resistor, Panasonic
1	ERJ-3EKF1001V	1k/1%	0603	Resistor, Panasonic
2	UMK212BB7225KG-T	2.2uF/50V	0805	Capacitor, Taiyo Yuden
3	HMK325B7225KN-T	2.2uF/100V	1210	Capacitor, Taiyo Yuden
6	ERJ-3EKF22R0V	22R/1%	0603	Resistor, Panasonic
3	ERJ-3EKF4701V	4k7/1%	0603	Resistor, Panasonic
1	NCP18XH103F03RB	10k/1%	0603	Resistor, Murata
3	ERJ-3EKF10R0V	10R/1%	0603	Resistor, Panasonic
1	C0603C223K1RACTU	22nF/100V	0603	Capacitor, Kemet
3	C0603C103K5RACTU	100nF/50V	0603	Capacitor, Kemet
3	C2012X7R2A104K125AA	100nF/100V	0805	Capacitor, TDK
3	C0603C474K4RACTU	470nF/16V	0603	Capacitor, KEMET
3	FDMD8260L	FDMD8260L	PQFN12	MOSFET, OnSemi
1	LTST-C191TBKT-5A	LTST-C191TBKT-5A		LED, Lite-On
1	TMC6200-TA	TMC6200-TA	TQFP48, 7x7	Gate Driver, TRINAMIC

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## BOB Schematics



## Mode Selection

- left image = top side, right image = bottom side
- Soldering R203 / not R204 = SPI Mode (default mode)
- Soldering R204 / not R203 = Standalone Mode (with pin configuration options)

