Microcontroller

U1

STM32F446VET6TR

Pin	Signal
1	PE2
2	PE3
3	PE4
4	PE5
5	PE6
6	VBAT
7	PC13
8	PC14-OSC32_IN
9	PC15-OSC32_OUT
10	VSS1
11	VDD1
12	PH0-OSC_IN
13	PH1-OSC_OUT
14	NRST
15	PC0
16	PC1
17	PC2
18	PC3
19	VDD2
20	VSSA/VREF-
21	VDDA
22	VREF+
23	PAD
24	PA1
25	PA2/UART2_TX
26	PA3/UART2_RX
27	VSS2
28	VDD3
29	PA4/SPI1_NSS
30	PA5/SPI1_SCK
31	PA6/SPI1_MISO
32	PA7/SPI1_MOSI
33	PC4
34	PC5
35	PB0
36	PB1
37	PB2
38	PE7
39	PE8
40	PE9
41	PE10
42	PE11
43	PE12
44	PE13
45	PE14
46	PE15
47	PB10
48	VCAP_1
49	VSS3
50	VDD4

Pin	Signal
100	VDD6 / +3V3
99	VSS5 / GND
98	PE1
97	PE0
96	PB9/CAN1_TX / CAN_TX
95	PB8/CAN1_RX / CAN_RX
94	BOOT0
93	PB7
92	PB6/CAN2_TX
91	PB5/CAN2_RX
90	PB4
89	PB3
88	PD7
87	PD6
86	PD5
85	PD4
84	PD3
83	PD2
82	PD1
81	PD0
80	PC12/SPI3_MOSI / MOSI
79	PC11/SPI3_MISO / MISO
78	PC10/SPI3_SCK / SCK
77	PA15/SPI3_NSS / CS
76	PA14/JTCK-SWCLK / TCK
75	VDD5 / +3V3
74	VSS4
73	VCAP_2 / TMS
72	PA13
71	PA12
70	PA11 / ENABLE
69	PA10 / PWMA
68	PA9 / PWMB
67	PA8 / PWMC
66	PC9
65	PC8
64	PC7
63	PC6
62	PD15
61	PD14
60	PD13
59	PD12
58	PD11
57	PD10
56	PD9
55	PD8
54	PB15
53	PB14
52	PB13
51	PB12

G1 CSTNE8M00GH5L000R0

R3 47 1%
FB1 600@100MHz/0.5A
C5 1 uF 10v, C8, C6 .1 uF 10v, C9

R1 150k 1% +24V
R2 10k 1%
PA0_SENSE

C10 2.2 uF 10v

C1 1 uF 10v, C2 1 uF 10v, C3 1 uF 10v, C4 1 uF 10v, C7, C12 1 uF 10v, C13 1 uF 10v, C14 4.7 uF 10v
C11 .1 uF 10v

S1 KMR221GLFS
C15 .1 uF 10v

R4 200, R6 200
D1, D2

NRST
INDICATOR

Gate Drive

U3 DRV8323SRTAT

ENABLE 30 / CAL 31
PWMC 34 INHA, PWMB 36 INHB, PWMA 37 INHC, 35 INLA, ENABLE 39 INLB, INLC
SPI-NSS-DRV 29 NSCS, SPI-SCK 28 SCLK, SPI-MOSI 27 SDI, 7 SHA, PHASA 14 SHB, PHASB 17 SHC, PHASC SNA, GND 10 SNB, GND 11 SNC, GND 20 SPA, SPA 9 SPB, SPB 12 SPC, GND 19 VDRAIN, +24V 5

DVDD 33, VREF 24, CPH 2, CPL 1, VM, VCP 3
GHA 6, GHB 15, GHC 8, GLA 13, GLB 18, GLC 25, NFAULT, SDO 26, SOA 23, SOB 22, SOC 21
AGND 32, PGND 40, EXP 41*13

C26 .1 uF 10v
C24 47 nF 50v, C25 1 uF 50v, C29, C32
R7 10k FAULT, R8 10k
I_A, I_B

U4 LMR16006XDDCR
VIN 5, SHDN 4, GND 1, CB, SW, FB
C22 10 uF 50v, C28 .1 uF 50v, L1 22uH
R9 54.9k 1%, R10 10k 1%, C34 22 uF 25v

U5 LDFM33PUR
VI 6, EN 5, GND, VO 1, PG
C19 dnp, C20 dnp, C21, C23 1 uF 25v, C27 22 uF 10v, C31 22 uF 10v
BODY1, BODY2

BRIDGE

C35 C36 C37 C38 C39 C40 C41 C42 C43 C44 C45 C46 C47 C48 C49 C50
10 uF 50v

Q1 CSD18540Q5BT, Q3, Q5
Q2, Q4, Q6
X4, X5, X6 AWG
GHA, GHB, GHC
PHASA, PHASB, PHASC
GLA, GLB, GLC
SPA, SPB
R11 1m, R12 1m

Connectors

X1 M80-8430342
GND 1, CANH 2, CANL 3

X2 SM07B-SRSS-TB
+3V3 1, TCK 2, GND 3, TMS 4, NRST 5, USART_TX 6, USART_RX 7

X3 FIT0586
GND -, +24V +

CAN

U2 MCP2542FD-H/SN
VDD 3, VIO 5, TXD 1, RXD 4, STBY 8
CANH 7, CANL 6, VSS 2
C17 .1 uF 25v, C18 .1 uF 10v
CAN_TX, CAN_RX

ANGLE

U6 MA700GQ-Z
VDD 13, GND 8*2, A 6, B 2, Z 3, NC1 1, NC2 9, NC3
MOSI 4, MISO 7, SCLK 12, CS 11, NC4, NC5, NC6 14, VFLASH 16 15
C30 .1 uF 10v