

TI DESIGNS TIDA-00436

36V, 32A Power Stage for BLDC motor  
with cycle by cycle stall current limiter

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Note
6	C1, C9, C28, C29, C30, C39	CAP, CERM, 2.2uF, 100V, +/-10%, X7R, 1210	MuRata	GRM32ER72A225KA35L	1210	Fitted
1	C10	CAP, CERM, 22uF, 4V, +/-20%, X5R, 0603	TDK	C1608X5R0G226M080AA	0603	Fitted
1	C11	CAP, CERM, 33pF, 50V, +/-5%, COG/NP0, 0402	Kemet	C0402C330J5GAC	0402	Fitted
1	C12	CAP, CERM, 0.012uF, 16V, +/-10%, X7R, 0402	MuRata	GRM155R71C123KA01D	0402	Fitted
1	C14	CAP, CERM, 0.1uF, 25V, +/-20%, Y5V, 0603	Kemet	C0603C104M3VACTU	0603	Fitted
2	C16, C17	CAP, CERM, 1uF, 25V, +/-10%, X5R, 0603	MuRata	GRM188R61E105KA12D	0603	Fitted
1	C19	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	TDK	C1608X7R1E104K	0603	Fitted
2	C2, C22	CAP, CERM, 0.1uF, 100V, +/-10%, X7R, 0603	MuRata	GRM188R72A104KA35D	0603	Fitted
2	C20, C21	CAP 270UF 80V RADIAL	United Chemi-Con	EKYB800ELL271MK20S	Through Hole Radial G	Fitted
4	C23, C34, C35, C36	CAP, CERM, 0.1uF, 16V, +/-5%, X7R, 0603	Kemet	C0603C104J4RACTU	0603	Fitted
1	C24	CAP, CERM, 0.01uF, 100V, +/-10%, X7R, 0603	TDK	C1608X7R2A103K	0603	Fitted
3	C25, C26, C27	CAP, CERM, 2200pF, 16V, +/-10%, X7R, 0603	MuRata	GRM188R71C222KA01D	0603	Fitted
1	C3	CAP, CERM, 0.022uF, 50V, +/-10%, X7R, 0603	TDK	C1608X7R1H223K	0603	Fitted
1	C31	CAP, CERM, 1000pF, 50V, +/-5%, COG/NP0, 0603	Kemet	C0603C102J5GAC	0603	Fitted
2	C4, C15	CAP, CERM, 2.2uF, 25V, +/-10%, X5R, 0805	MuRata	GRM219R1E225KA12D	0805	Fitted
3	C5, C6, C7	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	TDK	C1608X7R1H104K	0603	Fitted
1	C8	CAP, CERM, 0.01 uF, 25 V, +/- 10%, X7R, 0402	TDK	C1005X7R1E103K	0402	Fitted
1	D1	LED THIN 585NM YEL DIFF 0805 SMD	Lumex Opto/Components Inc	SML-LXT0805YW-TR	0805	Fitted
1	D2	LED THIN660NM SUPRED DIF0805SMD	Lumex Opto/Components Inc	SML-LXT0805SRW-TR	0805	Fitted
1	D3	Diode, Superfast Rectifier, 400V, 1A, SMA	Littelfuse	1.5SMC56CA	SMA	Fitted
2	D4, D5	LED THIN 565NM GRN DIFF 0805 SMD	Lumex Opto/Components Inc	SML-LXT0805GW-TR	0805	Fitted
1	H1	1/8 BRICK HEATSINK 58X23X22.9MM	Advanced Thermal Solutions Inc	ATS-1181-C1-R0	Rectangular, Angled Fins	Fitted
2	J3, J4	CONN RCPT 20POS .100 DL STR SMD	FCI	89898-310ALF		Fitted
1	L1	Inductor, Drum Core, Ferrite, 120uH, 0.22A, 3.2 ohm, SMD	Bourns	SDR0302-121KL	3x2.5x2.8mm	Fitted
2	Q1, Q2	MOSFET P-CH 8V 5.4A SOT23-3	Vishey Siliconix	SI2325DS-T1-E3	SOT-23-3	Fitted
6	Q3, Q4, Q5, Q6, Q7, Q8	MOSFET, N-CH, 60V, 100A, SON 5x6mm	Texas Instruments	CSD18540Q5B	SON 5x6mm	Fitted
3	R1, R4, R24	RES, 330 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603330RJNEA	0603	Fitted
1	R10	RES, 34.8 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040234K8FKED	0402	Fitted
1	R11	RES, 38.3k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040238K3FKED	0402	Fitted
1	R12	RES, 10.0k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040210K0FKED	0402	Fitted
1	R14	RES, 0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW0603000Z0EA	0603	Fitted
2	R2, R3	RES, 3.3 k, 5%, 0.1 W, 0603	Vishay-Dale	CRCW06033K30JNEA	0603	Fitted
4	R20, R37, R39, R41	RES, 34.8k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060334K8FKEA	0603	Fitted
1	R21	RES, 3.3 ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW12063R30JNEA	1206	Fitted
4	R22, R38, R40, R42	RES, 2.20k ohm, 1%, 0.1W, 0603	Yageo America	RC0603FR-072KL	0603	Fitted
1	R23	RES, 12k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060312K0JNEA	0603	Fitted
3	R25, R26, R27	RES, 56 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060356R0JNEA	0603	Fitted
6	R28, R29, R30, R31, R32, R33	RES, 10 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060310R0JNEA	0603	Fitted
3	R34, R35, R36	RES, 0.0 ohm, 63.2A JUMP, 2512	Panasonic	HCJ2512ZT0R00	2512	Fitted
1	R49	RES, 97.6k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040297K6FKED	0402	Fitted
1	R5	RES, 1.0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06031R00JNEA	0603	Fitted
2	R51, R61	RES, 0.001 ohm, 1%, 2W, 2512	Panasonic	CSNL2512FT1L00	2512	Fitted
2	R58, R59	RES, 0, 5%, 0.063 W, 0402	Yageo America	RC0402JR-070RL	0402	Fitted
2	R6, R9	RES, 1.0k ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06031K00JNEA	0603	Fitted
1	R7	RES, 30.9k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW040230K9FKED	0402	Fitted
1	R8	RES, 909 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402909KFKED	0402	Fitted
2	TP1, TP2	Test Point, 0.040 Hole	STD	STD		Fitted
1	U1	THREE PHASE PRE-DRIVER WITH DUAL CURRENT SHUNT AMPLIFIERS, DCA0048A	Texas Instruments	DRV8303DCA	DCA0048A	Fitted
1	U2	ESD Solution for High-Speed Differential Interface, 4 Channels, -40 to +85 degC, 6-pin SOT-32 (DBV), Green (RoHS & no Sb/Br)	Texas Instruments	TPD4S009DBVR	DBV0006A	Fitted
1	U4	IC, 60V/0.2A Synchronous Buck Regulator	TI	TPS54061DRB	QFN	Fitted
1	U5	Analog Temperature Sensors with Class-AB Output, DCK0005A	Texas Instruments	LMT84DCK	DCK0005A	Fitted
0	C13	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E104KA01D	0603	Not Fitted
0	C32, C33	CAP, CERM, 1000pF, 50V, +/-5%, COG/NP0, 0603	Kemet	C0603C102J5GAC	0603	Not Fitted
0	C37	CAP, CERM, 0.1uF, 16V, +/-5%, X7R, 0603	Kemet	C0603C104J4RACTU	0603	Not Fitted
0	C38	CAP, CERM, 2.2uF, 10V, +/-20%, X5R, 0603	Kemet	C0603C225M8PACTU	0603	Not Fitted
0	R43, R47	RES, 20.0 k, 1%, 0.1 W, 0603	Vishay-Dale	CRCW060320K0FKEA	0603	Not Fitted
0	R44, R45	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA	0603	Not Fitted
0	R46, R48	RES, 10.0k ohm, 0.1%, 0.1W, 0603	Susumu Co Ltd	RG1608P-103-B-T5	0603	Not Fitted
0	R50	RES, 100, 1%, 0.1 W, 0603	Vishay-Dale	CRCW0603100RFKEA	0603	Not Fitted
0	R52, R53, R54, R55, R56, R57	RES, 0, 5%, 0.063 W, 0402	Yageo America	RC0402JR-070RL	0402	Not Fitted
0	U3	Dual 6.5 MHz, 585 uA, Rail-to-Rail I/O CMOS Operational Amplifier, 2.3 to 5.5 V, -40 to 125 degC, 8-pin SOIC (D0008A), Green (RoHS & no Sb/Br)	Texas Instruments	OPA2374AID	D0008A	Not Fitted
1	Thermal Pad	THERMALLY CONDUCTIVE FILLER PAD, 5W/m.K, 0.5MM	AMEC THERMASOL	W8TR500G-0.5	mm X 24 mm Rectangu	Fitted
2	Machine Screw	MACHINE SCREW PAN PHILLIPS 6-32	B&F Fastener Supply	PMS 632 0050 PH	6-32 Thread	Fitted
2	Hex Nut	HEX NUT 5/16" 6-32	B&F Fastener Supply	HNZ 632	Hex, 6-32 Thread	Fitted
3	Machine Screw	MACHINE SCREW PAN PHILLIPS M3	B&F Fastener Supply	MPMS 003 0005 PH	M3 thread	Fitted
3	Screw Terminal, Power Tap	POWER ELEMENT BUSH	Würth Electronics Inc	7466203	M3 thread	Fitted

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