

Item No.	Designator	Quantity	Value	Part Number	Manufacturer	Description	Package name	Standard dimensions mm (inch)	Not Mounted
1	IC1, IC3, IC5, IC7, IC10, IC12	6		ISO5851DW	Texas Instruments	Gate Driver	SOIC16		
2	IC2, IC6, IC9	3		LP2951D	Texas Instruments	Voltage Regulator	SOIC8		
3	IC13, IC17	2		OPA4325IPWR	Texas Instruments	Operational Amplifier	TSSOP14		
4	IC14	1		REF2025AIDDCT	Texas Instruments	Voltage Reference	SOT5		
5	IC15, IC16, IC18	3		TLP7920(D4ALF1, F)	TOSHIBA	Photocoupler	DIP8		
6	IC19	1		74VHC541FT	TOSHIBA	Buffer	TSSOP20B		
7	IC20	1		74VHC540FT	TOSHIBA	Buffer	TSSOP20B		
8	Q2	1		SSM3K318R	TOSHIBA	MOSFET, 60 V, 2.5 A	SOT-23F		
9	Q3, Q5	2		TK090N65Z,S1F	TOSHIBA	Power MOSFET, 650 V, 30 A	TO-247		
10	Q4, Q6	2		TPHR9203PL,L1Q	TOSHIBA	Power MOSFET, 30 V, 150 A	SOP Advance		
11	Q7, Q8	2		TK62N60W5,S1V F	TOSHIBA	Nch MOSFET, 600 V, 61.8 A	TO-247		
12	PC2	1		TLP183(TPL,E)	TOSHIBA	Photocoupler	11-4M1S		
13	PS1	1		PSK-S10C-24	CUI Inc.	AC/DC Converter		76 x 31.5	
14	PS3, PS5, PS7	3		R24P209D	RECOM	DC/DC Converter	SIP7	19.5 x 9.8	
15	PS9	1		MGFS102405	COSEL	DC/DC Converter	SIP8	22.0 x 9.5	
16	PS10, PS11	2		H0505S-1WR2	MORNSUN	DC/DC Converter		19.5 x 9.8	
17	D2, D23, D24, D25	4		BAS316,H3F	TOSHIBA	Diode, 100 V	USC		
18	D4, D10, D16, D21, D26, D27, D28, D29	8		CMF05(TE12L,Q, M)	TOSHIBA	Diode, 1000 V	M-FLAT		
19	D5, D9, D11, D15, D17, D19	6		CMS04(TE12L,Q, M)	TOSHIBA	Schottky Barrier Diode, 30 V	M-FLAT		
20	D6, D7, D12, D14	4		TRS6E65F,S1Q	TOSHIBA	SiC Schottky Barrier Diode, 650 V	TO-220-2L		
21	D8, D13, D18, D20	4		1SS417CT,L3F	TOSHIBA	Schottky Barrier Diode, 40 V	CST2		
22	D22	1		1SS423(TE85L,F)	TOSHIBA	Schottky Barrier Diode Array, 40 V	SSM		
23	ZD1	1		SMBJ30A	Littelfuse	TVS Diode	DO-214AA		
24	ZNR1	1		TND14V-471KB00AAA0	Nippon chemi-con	Varistor, 470 V		15.5 x 6.2	

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25	LED1, LED3	2		VCDG1111C-4BY3C-TR	STANLEY	LED, Green		1.6 x 0.8 (0603)	
26	LED4, LED5	2		VFHR1111C-3BY2A-TR	STANLEY	LED, Red		1.6 x 0.8 (0603)	
27	R1, R2, R4, R5	4	56 Ω			±5 %, 5 W		13.0 x 9.0	
28	R3	1	470 kΩ			±5 %, 1 W		9.5 x 3.5	
29	R12	1	10 kΩ			±5 %, 250 mW		2.0 x 1.2 (0805)	
30	R11, R13, R18, R26, R30, R37, R42, R49, R67, R74, R130, R131, R132, R133, R136, R141	16	10 kΩ			±1 %, 100 mW		1.6 x 0.8 (0603)	
31	R14	1	390 Ω			±1 %, 100 mW		1.6 x 0.8 (0603)	
32	R15, R83, R85, R134, R135	5	1 kΩ			±5 %, 125 mW		1.6 x 0.8 (0603)	
33	R17	1	3.9 kΩ			±5 %, 100 mW		1.6 x 0.8 (0603)	
34	R21, R31, R40, R50	4	150 Ω			±1 %, 250 mW		2.0 x 1.2 (0805)	
35	R23, R32, R41, R51, R65, R66, R75, R76	8	3.3 Ω			±1 %, 500 mW		2.0 x 1.2 (0805)	
36	R24, R25, R44, R45, R58, R59	6	62 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
37	R27, R46, R60	3	18 kΩ			±1 %, 100 mW		1.6 x 0.8 (0603)	
38	R56, R61	2	75 kΩ			±1 %, 3 W		6.4 x 3.2 (2512)	
39	R64, R77	2	12 kΩ			±1 %, 100 mW		1.6 x 0.8 (0603)	
40	R78, R80	2	10 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
41	R79, R81	2	30 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
42	R82	1	2.2 kΩ			±1 %, 100 mW		1.6 x 0.8 (0603)	
43	R84	1	100 kΩ			±1 %, 100 mW		1.0 x 0.5 (0402)	
44	R86, R129	2	47 kΩ			±5 %, 100 mW		1.6 x 0.8 (0603)	
45	R88, R89, R90, R91, R92, R93, R102, R103, R109, R117, R118, R119, R120, R121, R125	15	180 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	

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46	R94, R110, R122	3	430 Ω			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
47	R95, R98, R107, R112, R116, R123	6	27 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
48	R96, R99	2	39 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
49	R20, R29, R39, R48, R63, R73, R97, R104, R105, R106, R111, R127	12	0 Ω			1 A		1.6 x 0.8 (0603)	
50	R22, R43, R57, R108, R113, R124, R126	7	82 kΩ			±0.1 %, 100 mW		1.6 x 0.8 (0603)	
51	R137, R138	2	620 Ω			±1 %, 100 mW		1.6 x 0.8 (0603)	
52	R139, R140	2	100 Ω			±1 %, 100 mW		1.6 x 0.8 (0603)	
53	L1, L2	2	7.4 mH	LDFL011742VV-V0E	Nippon Chemi-Con	11 A		34.0 x 23.5	
54	L3	1	222 μH	TXN40H-10221	TMP	10 A		53 x 53	
55	L4	1	1 μH			1.15 A, ± 20 %		1.6 x 0.8 (0603)	
56	L5, L6, L7	3	100 μH	ACT1210-101-2P-TL00	TDK	150 mA, - 30 %, + 50 %		3.2x2.5	
57	L8, L9, L10	3	22 nH			1.3 A, ±10 %		1.0 x 0.5 (0402)	
58	L11, L12	2	5 μH	AB3X2X4.5W	TOSHIBA	AMOBeads		4.0 x 1.5 x 6.0	
59	C4, C10, C14, C16, C19, C21, C23, C25, C31, C33, C37, C38, C40, C42, C52, C53, C56, C58, C65, C67, C78, C79, C81, C85, C86, C90, C91, C92, C96, C98, C102, C106, C109	33	1 μF			Ceramic, 50 V, ±10 %		1.6 x 0.8 (0603)	
60	C2, C3	2	0.22 μF			Film, 480 V, ± 20 %		Through Hole	
61	C6, C7	2	2.2 μF			Film, 330 V, ± 20 %		Through Hole	
62	C110, C111, C112, C113, C114, C115	6	2.2 μF			Ceramic, 450 V, ±10 %		5.7 x 5.0 (2220)	
63	C8, C9, C120, C121	4	2200 pF			Ceramic, X1: AC 440V,		Through Hole	

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						Y1:AC 400V, ±20%			
64	C11	1	68 µF			Aluminum, 35 V, ±20 %		6.6 x 7.8	
65	C15, C17, C18, C24, C32, C35, C36, C41, C50, C51, C57, C66, C76, C77	14	10 µF			Ceramic, 50 V, ±10 %		3.2 x 2.5 (1210)	
66	C20, C39, C60, C69	4	33 pF			Ceramic, 50 V, ±5 %		1.6 x 0.8 (0603)	
67	C22, C26, C34, C43, C59, C68	6	6800 pF			Ceramic, 50 V, ±5 %		1.6 x 0.8 (0603)	
68	C48, C49, C54, C55	4	1000 µF			Aluminum, 250 V, ±20 %		Through Hole	
69	C70, C73	2	27 pF			Ceramic, 50 V, ±1 %		1.0 x 0.5 (0402)	
70	C71, C72, C75, C82, C83, C103, C104	7	0.1 µF			Ceramic, 50 V, ±10 %		1.0 x 0.5 (0402)	
71	C74, C87, C93, C99	4	1000 pF			Ceramic, 50 V, ±5 %		1.6 x 0.8 (0603)	
72	C88, C89	2	2200 pF			Ceramic, 50 V, ±5 %		1.6 x 0.8 (0603)	
73	C80, C84, C101, C105	4	10 µF			Ceramic, 10 V, ±10 %		1.6 x 0.8 (0603)	
74	C94, C95, C97, C100	4	1000 pF			Ceramic, 50 V, ±5 %		1.0 x 0.5 (0402)	
75	C122, C123	2	100 pF			Ceramic, X1: AC 440V. Y1:AC 400V, ±10 %		Through Hole	
76	CT1	1		F02P015S05L	Tamura	Current Transducer, 15 A		Through Hole	
77	F1	1		0487016.MXEP	Littelfuse	Fuse, 16 A, 420 VAC		21.5 x 5.5	
78	RLY2	1		G6QE-1A DC24V	OMRON	Power Relay, 36 A, AC 277 V/DC 24 V		Through Hole	
79	CN1, CN2, CN3, CN4, CN5, CN6	6		6-1460820-1	TE Connectivity	MMCX Connector		5 x 5	
80	CN7	1		BM02B-PASS-TFT(LF)(SN)	JST	Connector		8 x 5.7	
81	CN8	1		WR-60S-VFH05-N1	JAE	Connector		16.5 x 5	
82	TB1, TB2, TB3, TB4, TB5	5		OT-264	Osada	Terminal		Through Hole	

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83	TP2, TP7, TP8, TP9, TP10, TP11, TP12, TP17, TP18, TP19, TP22, TP26, TP27, TP28, TP31, TP33, TP36, TP37, TP42, TP43, TP44, TP45, TP46, TP47, TP48, TP49, TP50, TP51, TP52, TP53, TP54, TP55, TP56, TP57, TP58, TP59, TP60, TP61, TP62, TP63, TP64, TP65, TP66, TP67, TP68, TP69, TP70, TP71, TP72, TP74	50		HK-3-G	MAC8	Test Pin		2.0 x 1.3	
84	R19, R28, R38, R47, R62, R72	6						1.6 x 0.8 (0603)	Not Mounted
85	R87, R100, R101, R114, R115, R128	6						1.0 x 0.5 (0402)	Not Mounted
86	C107, C108	2						1.6 x 0.8 (0603)	Not Mount

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