

TSI BOM

Ref	Value	Description	Manufacturer	Manufacturer P/N	Supplier	Supplier	Unit Price	Quantity	Qty on board	Ordered?	Key
U13		DC/DC CONVERTER 5V 10W	CUI Inc.	PDQ10-Q24-S5-D	Digikey	102-3865-	\$25.82	1	1 on board		Removed From Design
U1		Isolated Module DC DC Converter 1		RUW15SL12C	Digikey	811-2783-	\$5.71	0	1 on board	1	New component
SW1		SWITCH PUSH SPST-NO 0.1A 42V	RAFI USA	1.14100.5030000	Digikey	1715-1676-	\$2.40	2	1 on board		
SW2		IC ANLG SW SPDT SOT23-6	Texas Instruments	TS5A3159QDBVRQ1	Digikey	296-39512-	\$0.98	1	1 on board		
U4		SENSOR TEMPERATURE SPI SOT23-5	Texas Instruments	LM95071QIMFX/NOPB	Digikey	296-40259-	\$2.90	2	1 on board		
U8		IC GATE NAND 1CH 8-INP 14-SOIC	Texas Instruments	74ACT11030DR	Digikey	296-4180-	\$2.28	2	1 on board		
R44	120Ω	RES SMD 120 OHM 1% 1/8W 0805	Yageo	RC0805FR-07120RL	Digikey	311-	\$0.10	50	1 on board		
R12	150Ω	RES SMD 150 OHM 1% 1/8W 0805	Yageo	RC0805FR-07150RL	Digikey	311-	\$0.10				
R15	150Ω	RES SMD 150 OHM 1% 1/8W 0805	Yageo	RC0805FR-07150RL	Digikey	311-	\$0.10	47	3 on board		
R27	150Ω	RES SMD 150 OHM 1% 1/8W 0805	Yageo	RC0805FR-07150RL	Digikey	311-	\$0.10				
R70	47kΩ	RES SMD 47K OHM 1% 1/8W 0805	Yageo	RC0805FR-0747KL	Digikey	311-	\$0.10	24	1 on board		
C5	10pF	CAP CER 10PF 50V NP0 0805	KEMET	C0805C100J5GACTU	Digikey	399-1108-	\$0.10	23	2 on board		
C6	10pF	CAP CER 10PF 50V NP0 0805	KEMET	C0805C100J5GACTU	Digikey	399-1108-	\$0.10				
C28	100pF	CAP CER 100PF 50V NP0 0805	KEMET	C0805C101J5GACTU	Digikey	399-1122-	\$0.10				
C29	100pF	CAP CER 100PF 50V NP0 0805	KEMET	C0805C101J5GACTU	Digikey	399-1122-	\$0.10				
C30	100pF	CAP CER 100PF 50V NP0 0805	KEMET	C0805C101J5GACTU	Digikey	399-1122-	\$0.10				
C41	100pF	CAP CER 100PF 50V NP0 0805	KEMET	C0805C101J5GACTU	Digikey	399-1122-	\$0.10	19	6 on board		
C46	100pF	CAP CER 100PF 50V NP0 0805	KEMET	C0805C101J5GACTU	Digikey	399-1122-	\$0.10				
C47	100pF	CAP CER 100PF 50V NP0 0805	KEMET	C0805C101J5GACTU	Digikey	399-1122-	\$0.10				
C1	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C12	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C14	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C15	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C16	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C17	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C18	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C2	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C22	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C23	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C25	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C9	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C31	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C32	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C33	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C34	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C35	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C37	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C38	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C40	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C42	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C43	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C44	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C45	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C7	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
C8	0.1uF	CAP CER 0.1UF 25V X7R 0805	KEMET	C0805C104K3RACTU	Digikey	399-1168-	\$0.10				
SW3		SWITCH SLIDE DPDT 300MA 6V	C&K	JS202011CQN	Digikey	401-2001-	\$0.41	4	1 on board		
D1		LED GREEN DIFFUSED 0805 SMD	OSRAM Opto	LG R971-KN-1	Digikey	475-1410-	\$0.25	9	1 on board		

D2		LED YELLOW DIFFUSED 0805 SMD	OSRAM Opto	LY R976-PS-36	Digikey	475-2560-	\$0.35	9	1 on board		
D3		LED RED DIFFUSED 0805 SMD	OSRAM Opto	LS R976-NR-1	Digikey	475-1278-	\$0.26	9	1 on board		
C10	10uF	CAP CER 10UF 35V X5R 0805	Murata Electronics North	GRM21BR6YA106ME43	Digikey	490-10515-	\$0.36	6	3 on board		
C11	10uF	CAP CER 10UF 35V X5R 0805	Murata Electronics North	GRM21BR6YA106ME43	Digikey	490-10515-	\$0.36				
C19	10uF	CAP CER 10UF 35V X5R 0805	Murata Electronics North	GRM21BR6YA106ME43	Digikey	490-10515-	\$0.36				
C24	1uF	CAP CER 1UF 250V X7R 2220	Murata Electronics North	GRM55DR72E105KW01	Digikey	490-3550-	\$0.85	5	1 on board		
C4	47uF	CAP CER 47UF 16V X5R 1210	Murata Electronics North	GRM32ER61C476KE15K	Digikey	490-6538-	\$0.86	2	1 on board		
U18		IC OPAMP GP 1.4MHZ RRO 8SO	STMicroelectronics	TS912IYDT	Digikey	497-10252-	\$1.54		2 on board		
U6		IC OPAMP GP 1.4MHZ RRO 8SO	STMicroelectronics	TS912IYDT	Digikey	497-10252-	\$1.54		2 on board		
U22		IC COMP LP DUAL CMOS VOLT 8 SOIC	STMicroelectronics	TS372IDT	Digikey	497-2271-	\$0.62	2	2 on board		
D4		LED BLUE DIFFUSED 0805 SMD	Broadcom Limited	HSMR-C170	Digikey	516-1445-	\$0.89	9	1 on board		
U19		IC OPAMP ISOLATION 100KHZ 8SO	Broadcom Limited	ACPL-C870-000E	Digikey	516-2578-	\$5.39	3	2 on board		
U20		IC OPAMP ISOLATION 100KHZ 8SO	Broadcom Limited	ACPL-C870-000E	Digikey	516-2578-	\$5.39				
C3	10uF	CAP ALUM 10UF 20% 250V SMD	Nichicon	ULR2E100MNL1GS	Digikey	493-6705-	\$0.84	0	1 on board		
L1	100uH	FIXED IND 100UH 1A 377 MOHM SMD	Taiyo Yuden	NR8040T101M	Digikey	587-2004-	\$0.60	2	1 on board		
CON1		CONN HEADER 10POS DUAL SHRD SMD	Amphenol FCI	20021521-00010T1LF	Digikey	609-4054-	\$1.11		1 on board		
Y1		CRYSTAL 10.000MHZ 12PF SMD	TSC Corporation	7A-10.000MAAE-T	Digikey	887-1741-	\$0.66	2	1 on board		
P1		CONN RCPT 2POS 11.18MM PCB SLDR	TE Connectivity AMP	556881-2	Digikey	A113980-	\$7.13	1	1 on board		
U7		IC MCU 8BIT 128KB FLASH 64TQFP	Microchip Technology	AT90CAN128-16AUR	Digikey	AT90CAN1	\$7.66	2	1 on board		
U5		IC REG LDO 10V 1A TO220-3	Fairchild / ON	LM7810ACT	Digikey	LM7810AC	\$0.64	3	1 on board		
U16		IC REG BUCK ADJ 0.25A 16MSOP	Linear Technology	LTC3638EMSE#PBF	Digikey	LTC3638E	\$7.79	2	1 on board		
U10		IC TRANSCEIVER CAN HI-SPD 8-SOIC	Microchip Technology	MCP2551-I/SN	Digikey	MCP2551-	\$1.05	3	1 on board		
U21		IC OPAMP GP 1MHZ RRO SOT23-5	Microchip Technology	MCP6001T-I/OT	Digikey	MCP6001T-	\$0.25	3	1 on board		
U2		IC OPAMP GP 1MHZ RRO 8SOIC	Microchip Technology	MCP6002T-I/SN	Digikey	MCP6002T-	\$0.34	3	2 on board		
U17		IC OPAMP GP RRO 1MHZ 14-SOIC	Microchip Technology	MCP6004T-I/SL	Digikey	MCP6004T-	\$0.45	4	7 on board		
U3		IC OPAMP GP RRO 1MHZ 14-SOIC	Microchip Technology	MCP6004T-I/SL	Digikey	MCP6004T-	\$0.45				
Q2		MOSFET N-CH 60V 500MA SOT-23	Fairchild / ON	MMBF170	Digikey	MMBF170	\$0.35	7	2 on board		
Q3		MOSFET N-CH 60V 500MA SOT-23	Fairchild / ON	MMBF170	Digikey	MMBF170	\$0.35				
R37	1kΩ	RES SMD 1K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1001V	Digikey	P1.00KCCT-	\$0.10	24	1 on board		
R11	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10	40	28 on board		
R13	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R14	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R17	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R18	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R21	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R22	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R23	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R28	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R29	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R3	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R31	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R39	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R4	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R40	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R41	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R42	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R43	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R5	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				
R50	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10				

PCB

R56	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R57	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R59	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R6	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R60	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R62	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R63	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R7	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R8	10kΩ	RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1002V	Digikey	P10.0KCCT-	\$0.10			
R24	100kΩ	RES SMD 100K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1003V	Digikey	P100KCCT-	\$0.10	23	2 on board	
R30	100kΩ	RES SMD 100K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1003V	Digikey	P100KCCT-	\$0.10			
R10	137kΩ	RES SMD 137K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1373V	Digikey	P137KCCT-	\$0.10	21	2 on board	
R36	137kΩ	RES SMD 137K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1373V	Digikey	P137KCCT-	\$0.10			
R58	15kΩ	RES SMD 15K OHM 1% 1/8W 0805								
R61	150kΩ	RES SMD 150K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1503V	Digikey	P150KCCT-	\$0.10			
R65	150kΩ	RES SMD 150K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1503V	Digikey	P150KCCT-	\$0.10	46	4 on board	
R67	150kΩ	RES SMD 150K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1503V	Digikey	P150KCCT-	\$0.10			
R68	150kΩ	RES SMD 150K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1503V	Digikey	P150KCCT-	\$0.10			
R20	16kΩ	RES SMD 16K OHM 5% 1/8W 0805	Panasonic Electronic	ERJ-6GEYJ163V	Digikey	P16KACT-	\$0.10			
R35	16kΩ	RES SMD 16K OHM 5% 1/8W 0805	Panasonic Electronic	ERJ-6GEYJ163V	Digikey	P16KACT-	\$0.10	46	4 on board	
R45	16kΩ	RES SMD 16K OHM 5% 1/8W 0805	Panasonic Electronic	ERJ-6GEYJ163V	Digikey	P16KACT-	\$0.10			
R46	16kΩ	RES SMD 16K OHM 5% 1/8W 0805	Panasonic Electronic	ERJ-6GEYJ163V	Digikey	P16KACT-	\$0.10			
R77	196kΩ	RES SMD 196 OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF1960V	Digikey	P196CCT-	\$0.10	24	1 on board	
R32	4.kΩ	RES SMD 4K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF4751V	Digikey	P4.75KCCT-	\$0.10			
R34	4kΩ	RES SMD 4K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF4751V	Digikey	P4.75KCCT-	\$0.10	0	4 on board	
R25	4kΩ									
R26	4kΩ									
RV1	2kΩ	TRIMMER 2K OHM 0.25W SMD	Nidec Copal Electronics	ST4ETB202	Digikey	ST4ETB202	\$1.13			
RV2	2kΩ	TRIMMER 2K OHM 0.25W SMD	Nidec Copal Electronics	ST4ETB203	Digikey	ST4ETB202	\$1.13	0	4 on board	
RV3	2kΩ	TRIMMER 2K OHM 0.25W SMD	Nidec Copal Electronics	ST4ETB204	Digikey	ST4ETB202	\$1.13			
RV4	2kΩ	TRIMMER 2K OHM 0.25W SMD	Nidec Copal Electronics	ST4ETB205	Digikey	ST4ETB202	\$1.13			
R54	24.9kΩ	RES SMD 24.9K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2492V	Digikey	P24.9KCCT-	\$0.10			
R55	24.9kΩ	RES SMD 24.9K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2492V	Digikey	P24.9KCCT-	\$0.10	45	4 on board	
R64	24.9kΩ	RES SMD 24.9K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2492V	Digikey	P24.9KCCT-	\$0.10			
R66	24.9kΩ	RES SMD 24.9K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2492V	Digikey	P24.9KCCT-	\$0.10			
R19	4.3kΩ	RES SMD 4.3K OHM 1% 1/8W 0805	Panasonic Electronic	ERA-6AEB432V	Digikey	P4.3KDACT-	\$0.10		0	
R19	250kΩ	RES SMD 249K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2493V	Digikey	P249KCCT-	\$0.10			
R2	250kΩ	RES SMD 249K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2493V	Digikey	P249KCCT-	\$0.10			
R16	250kΩ	RES SMD 249K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2493V	Digikey	P249KCCT-	\$0.10	43	4 on board	
R51	250kΩ	RES SMD 249K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2493V	Digikey	P249KCCT-	\$0.10			
R52	250kΩ	RES SMD 249K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2493V	Digikey	P249KCCT-	\$0.10			
R69	250kΩ	RES SMD 249K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF2493V	Digikey	P249KCCT-	\$0.10			
R71	330Ω	RES SMD 330 OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF3300V	Digikey	P330CCT-	\$0.10			
R72	330Ω	RES SMD 330 OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF3300V	Digikey	P330CCT-	\$0.10	21	4 on board	
R73	330Ω	RES SMD 330 OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF3300V	Digikey	P330CCT-	\$0.10			
R74	330Ω	RES SMD 330 OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF3300V	Digikey	P330CCT-	\$0.10			
R33	499Ω	RES SMD 499 OHM 0.1% 1/8W 0805	Panasonic Electronic	ERA-6AEB4990V	Digikey	P499DACT-	\$0.39			
R79	499Ω	RES SMD 499 OHM 0.1% 1/8W 0805	Panasonic Electronic	ERA-6AEB4990V	Digikey	P499DACT-	\$0.39			
R81	499Ω	RES SMD 499 OHM 0.1% 1/8W 0805	Panasonic Electronic	ERA-6AEB4990V	Digikey	P499DACT-	\$0.39	20	5 on board	



R82	499Ω	RES SMD 499 OHM 0.1% 1/8W 0805	Panasonic Electronic	ERA-6AEB4990V	Digikey	P499DACT-	\$0.39		
R83	499Ω	RES SMD 499 OHM 0.1% 1/8W 0805	Panasonic Electronic	ERA-6AEB4990V	Digikey	P499DACT-	\$0.39		
R1	665kΩ	RES SMD 665K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF6653V	Digikey	P665KCCT-	\$0.10	23	2 on board
R9	665kΩ	RES SMD 665K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF6653V	Digikey	P665KCCT-	\$0.10		
R76	750kΩ	RES SMD 750K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF7503V	Digikey	P750KCCT-	\$0.10	24	1 on board
R38	9.31kΩ	RES SMD 9.31K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF9311V	Digikey	P9.31KCCT-	\$0.10		
R80	9.31kΩ	RES SMD 9.31K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF9311V	Digikey	P9.31KCCT-	\$0.10	23	2 on board
D5		DIODE SCHOTTKY 100V 3A DO214AC	Micro Commercial Co	SK310A-LTP	Digikey	SK310A-	\$0.60	3	1 on board
U11		OPTOISOLATOR 3.75KV TRANS 4-SO	Toshiba Semiconductor and	TLP293(GB-TPL,E	Digikey	TLP293(GB-	\$0.52		
U12		OPTOISOLATOR 3.75KV TRANS 4-SO	Toshiba Semiconductor and	TLP293(GB-TPL,E	Digikey	TLP293(GB-	\$0.52		
U23		OPTOISOLATOR 3.75KV TRANS 4-SO	Toshiba Semiconductor and	TLP293(GB-TPL,E	Digikey	TLP293(GB-	\$0.52		
U24		OPTOISOLATOR 3.75KV TRANS 4-SO	Toshiba Semiconductor and	TLP293(GB-TPL,E	Digikey	TLP293(GB-	\$0.52		
U27		OPTOISOLATOR 3.75KV TRANS 4-SO	Toshiba Semiconductor and	TLP293(GB-TPL,E	Digikey	TLP293(GB-	\$0.52		
U9		OPTOISOLATOR 3.75KV TRANS 4-SO	Toshiba Semiconductor and	TLP293(GB-TPL,E	Digikey	TLP293(GB-	\$0.52		
J1		CONN HEADER 12POS 4.2MM VERT TIN	Molex LLC	39281123	Digikey	WM3805-	\$1.62	0	1 on board
J2		CONN HEADER 10POS 4.2MM VERT TIN	Molex LLC	39281103	Digikey	WM3804-	\$1.54	0	1 on board
J3		CONN HEADER 8POS 4.2MM VERT TIN	Molex LLC	39281083	Digikey	WM3803-	\$1.30	0	2 on board
J9		CONN HEADER 3MM 8POS R/A GOLD	TE Connectivity AMP	2-1445098-8	Digikey	A34864-	\$1.69		1 on board
J4		CONN HEADER 4POS .100 VERT GOLD	Molex LLC	705430003	Digikey	WM4802-	\$0.94	1	1 on board
J7		CONN HEADER 6POS 4.2MM VERT TIN	Molex LLC	39281063	Digikey	WM3802-	\$1.01		2 on board
J8		CONN HEADER 6POS 4.2MM VERT TIN	Molex LLC	39281063	Digikey	WM3802-	\$1.01	0	2 on board
J10		CONN HEADER 4POS 4.2MM VERT TIN	Molex LLC	39281043	Digikey	WM3801-	\$0.77	0	1 on board
J11		CONN HEADER 2POS 4.2MM VERT TIN	Molex LLC	39281023	Digikey	WM3800-	\$0.62		2 on board
J12		CONN HEADER 2POS 4.2MM VERT TIN	Molex LLC	39281023	Digikey	WM3800-	\$0.62	0	2 on board
JP1		JUMPER PLUG 3POS SING ROW	Omron Electronics Inc-EMC	XG8V-0331	Digikey	Z5375-ND	\$0.26	3	1 on board
Q1		MOSFET P-CH 250V 0.265A SOT223	Diodes Incorporated	ZVP4525GTA	Digikey	ZVP4525G	\$0.68	3	1 on board
		MODULAR DIN RAIL-MOUNT	N/A	N/A	McMaster Carr	7641K921	\$1.19		
		JUMPER FOR STANDARD DIN 1&3, 5	N/A	N/A	McMaster Carr	7641K925	\$8.35		
		STRAIGHT 3-PIN PLUG FOR TRAILER	N/A	N/A	Super Bright LEDS	PL-3S	\$1.49		
		PT SERIES CHROME BEZEL WITH HOOD	N/A	N/A	Super Bright LEDS	KC-65	\$2.95		
		3/4 IN. NON-METALLIC (nm TWIN-	N/A	N/A	Home Depot	279782	\$4.21		
		EVERBILT #8-32 x 3/4 IN. PHILLIPS FLAT-	N/A	N/A	Home Depot	492405	\$1.18		
		3/8 IN. HEX BOLT	N/A	N/A	Home Depot	661872	\$0.20		
		3/8 IN. HEX NUT	N/A	N/A	Home Depot	655449	\$0.12		
		2 SLIDE POTENTIOMETERS 15MM	Bourns	PTA4553-2015DPB502	Mouser	652-	\$1.20	10	
		WIREWOUND RESISTORS - THROUGH	Vishay/Draloric	AC05000001002JAC00	Mouser	594-	\$0.58	2	
		POWER TO THE BOARD CONTACT	TE Connectivity AMP	556880-2	Mouser	571-	\$0.81		
	4.7kΩ	RES SMD 4.7K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF4701V	Digikey	P4.70KCCT-	\$0.04	10	
	4.87kΩ	RES SMD 4.87K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF4871V	Digikey	P4.87KCCT-	\$0.04	10	
	4.99kΩ	RES SMD 4.99K OHM 1% 1/8W 0805	Panasonic Electronic	ERJ-6ENF4991V	Digikey	P4.99KCCT-	\$0.04	9	
		CONN IDC SKT 14POS W/POL 15 GOLD	TE Connectivity AMP	1658621-2	Digikey	AKC14H-	\$1.44		
		CONN HOUSING 4POS .100 W/LATCH	Molex LLC	50579404	Digikey	WM2902-	\$0.27	1	
		CONN HOUSING 8POS .100 W/LATCH	Molex LLC	50579408	Digikey	WM2906-	\$0.48	2	
		CONN HSG PLUG 2POS 11.18MM	TE Connectivity AMP	556879-2	Digikey	556879-2-	\$3.89	1	
		FUSE HLDR CART 500V 15A IN LINE	Littelfuse INC.	01500322H	Digikey	F4564-ND	\$6.35	2	
		FUSE CERAMIC 500MA 250VAC 125VDC	Littelfuse INC.	0314.500HXP	Digikey	F3212-ND	\$0.90	9	
		OVAL LED STROBE TRUCK AND TRAILER	N/A	N/A	Super Bright LEDS	PT-STRB-	\$24.95		
		OVAL LED STROBE TRUCK AND TRAILER	N/A	N/A	Super Bright LEDS	M9-R4	\$4.95	2	
		PRESS-FIT NUT FOR SOFT METAL AND	N/A	N/A	McMaster Carr	95117A43	\$12.69		

Mountings

		STEEL PHILLIPS ROUNDED HEAD SCREW	N/A	N/A	McMaster Carr	90272A14	\$1.99			
		ELECTRICAL-INSULATING FEMALE	N/A	N/A	McMaster Carr	94335A14	\$5.76			
		ELECTRICAL-INSULATING FEMALE	N/A	N/A	McMaster Carr	94335A12	\$3.56			
		6061 ALUMINIUM (1'	N/A	N/A	McMaster Carr	8975K11	\$4.42			
		18-8 STAINLESS STEEL HEX DRIVE	N/A	N/A	McMaster Carr	92095A45	\$6.50			
		3" MADE TO ORDER PEEL AND STICK SET	N/A	N/A	McMaster Carr	8216T77	\$6.88			
		SLIDE POTENTIOMETERS 2K LINEAR	Bourns	PTA4543-2015CPB202	Mouser	652-	\$1.01			
		KNOBS & DIALS SLIDE CONTROL GY/BK	Eagle Plastic Devices	450-SL4514	Mouser	450-	\$1.14			
Non PCB Parts		PUSHBUTTON SWITCHES OFF-(ON	CW Industries	GPB507A05BR	Mouser	629-	\$2.16			
		RTDS						1		
		Brake Overtravel Switch						1		
		Black 4MM Banana Jack For Sheathed Plug	Pomona Electronics	72930-0	Mouser	565-7293	\$2.68	4		
		Red 4MM Banana Jack For Sheathed Plug	Pomona Electronics	72930-0	Mouser	565-7293	\$2.68	4		N/A
		Liquid Tight Fit Connector						0		N/A
		Divider for High and Low Voltage						0		No
		IMD IR155-3204						1		No
		39K 39Kohm 2W Resistors						5		
		Omron 24V DC Relay						2		
	BBM-01 Bus Bar Current Sensor						1			
	CANOP	B&B Electronics					1			
Extra Components that Could Be Useful		IC 12-BIT LP A/D CONV 8VSSOP		ADS7823E				3		
		IC DAC 12BIT VOUT TSOT23-8		LTC2631ITS8-LM12				1		
		IC MONITOR PWR/CURR BIDIR 10 MSOP		296-29034-1-ND				10		
		IC LOAD SW HIGH SIDE 6SOT		296-34970-1-ND				1		
		OPTOISO 3.75KV PSH PULL S06-5		TLP2361(TPLECT-ND				2		
		IC OPAMP GP R-R 210 KHZ 8SOIC		296-26730-1-ND				4		
		IC OPAMP INSTR R-R 150KHZ 8MSOP		296-23564-1-ND				10		
		RES SMD 10k OHM 5% 1/8W 0805		ERJ-6GEYJ103V				47		
		RES SMD 20K OHM 1% 1/8W 0805		RMCF0805FT20k0				41		
		CAP CER 0.1UF 50V Y5V 0805		1276-1007-1-ND				9		
		CAP CER 1UF 16V 10% X7R 0805		399-1284-1-ND				4		
	CAP CER 10UF 25V X5R		490-12737-1-ND				16			
	CAO 4700PF 50V Ceramic X7R 0805		399-115-1-ND				11			