





Designator	Comment	Footprint	Part Number	Part Description	Quantity
B1, B2, B3, B4, B5, B6	VG, V4, V3, V2, V1, GND	c250h130	PLATED_HOLE1.3_PAD2.5	Plated Through Hole: Hole Dia.=1.3mm Pad Dia =2.5mm	6
B7, B8	POS, NEG	c375h250	PLATED_HOLE2.5_PAD3.75	Plated Through Hole: Hole Dia.=2.5mm Pad Dia =3.75mm	2
C1, C2, C3	1n	CAPC2012X135N	CC0805_1NF_50V_5%_X7R	SMD Multilayer Chip Ceramic Capacitor	3
C4, C7, C8, C13, C16, C17, C20, C22, C24, C29	1u	CAPC1005X55N	CC0402_1UF_10V_20%_X5R	SMD Multilayer Chip Ceramic Capacitor	10
C5	1u	CAPC3216X140N	CC1206_1UF_100V_10%_X7R	SMD Multilayer Chip Ceramic Capacitor	1
C6, C15, C19, C21, C31, C33, C36, C37, C38, C39, C40	100n	CAPC1005X55N	CC0402_100NF_50V_10%_X7R	SMD Multilayer Chip Ceramic Capacitor	11
C9, C12	4.7u	CAPC3216X140N	CC1206_4.7UF_50V_10%_X7R	SMD Multilayer Chip Ceramic Capacitor	2
C10, C11	10n	CAPC1005X55N	CC0402_10NF_50V_10%_X7R	SMD Multilayer Chip Ceramic Capacitor	2
C14, C23, C32, C34	22u	CAPC3216X100N	CC1206_22UF_16V_20%_X5R	SMD Multilayer Chip Ceramic Capacitor	4
C18	22n	CAPC1005X55N	CC0402_22NF_16V_10%_X7R	SMD Multilayer Chip Ceramic Capacitor	1
C25, C28	220p	CAPC1005X55N	CC0402_220PF_50V_5%_NPO	SMD Multilayer Chip Ceramic Capacitor	2
C26, C27	6.8p	CAPC1005X55N	CC0402_6.8PF_50V_0.5PF_NPO	SMD Multilayer Chip Ceramic Capacitor	2
C30	100p	CAPC1005X55N	CC0402_100PF_50V_5%_NPO	SMD Multilayer Chip Ceramic Capacitor	1
C35	4.7u	CAPC1608X87N	CC0603_4.7UF_10V_10%_X5R	SMD Multilayer Chip Ceramic Capacitor	1
D1, D2, D3, D4	1N4148W	SOD3715X145N	TN4148W	Small Signal Diode	4
D5, D6, D7	MBRF2060	TO-220-H-OUTSIDE	MBRF2060CTG_h_outside	Switch-mode Schottky Power Rectifier (Common Cathode)	3
D8	MBR1405FTIG	SOD-123FL	MBR1405FTIG	Schottky Power Rectifier	1
J1	Header 4	3M_929550-0104-EU	3M_929550-0104-EU	10 Contacts - Horizontal Contacts Straight Strip Header Pitch 2.54	1
J2	SPOX	MOLEX_22-03-5045	MOLEX_22-03-5045	2.50mm Pitch SPOX Wire-to-Board Header, Vertical, Shrouded, 4 Circuits, Tin Sn Plating	1
J3	=Family	PHOENIX_1725656	PHOENIX_1725656	6A, 63V, Terminal Block, Pitch 2.54mm, 2 Positions, Screw Connection	1
LD1	Red	LEDC1608X80N_RED	LED_OF-SMD1608R	Surface Mount Red LED (0603 Case)	1
LD2	Blue	LEDC1608X80N_BLUE	LED_OF-SMD1608B	Surface Mount Red LED (0603 Case)	1
Q1, Q3, Q4	MMBT5551	SOT95P240X130-3N	MMBT5551L	160V 600A NPN General Purpose Amplifier	3
Q2	BSS139	SOT95P240X110-3N	BSS139	250V 1A N-Channel MOSFET Depletion-mode	1
Q5	BCP56	SOT230P700X180-4N	BCP56	80V 1A NPN Medium Power Transistor	1
Q6, Q7, Q8, Q9	IRF3710	TO-220-H-OUTSIDE	IRF3710_h_outside	100V 57A 0.023 Ohm N-Channel Power MOSFET	4
Q10	IRFH9331	PCFN50P300X300X100_HS-9N	IRFH9331TRPBF	-30V 11A 0.014 Ohm P-Channel MOSFET	1
R1, R2, R9, R37, R38	2k2	RESC1005X40N	R0402_2K2_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	5
R3	100k	RESC2012X60N	R0805_100K_1%_0.125W_100PPM	General Purpose Thick Film Chip Resistor	1
R4, R5, R8, R30, R31	100	RESC1005X40N	R0402_100R_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	5
R6, R17	10	RESC1608X55N	R0603_10R_1%_0.1W_200PPM	General Purpose Thick Film Chip Resistor	2
R7, R25, R33, R34, R36	1k	RESC1005X40N	R0402_1K_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	5
R10, R11, R12, R13	2k2	RESC2012X60N	R0805_2K2_1%_0.125W_100PPM	General Purpose Thick Film Chip Resistor	4
R14	4k7	RESC3216X65N	R1206_4K7_1%_0.25W_100PPM	General Purpose Thick Film Chip Resistor	1
R15, R16	120k	RESC1005X40N	R0402_120K_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	2
R18, R19, R20, R22, R26, R27, R32	10k	RESC1005X40N	R0402_10K_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	7
R21	0.082	RESC6331X80N	R2512_0R082_1%_2W_50PPM	Metal plate chip type low resistance Resistor	1
R23	62	RESC1005X40N	R0402_62R_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	1
R24	20k	RESC1005X40N	R0402_20K_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	1
R28, R29	100k	RESC1005X40N	R0402_100K_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	2
R35	3k3	RESC1005X40N	R0402_3K3_1%_0.0625W_100PPM	General Purpose Thick Film Chip Resistor	1
U1	AD8608	SOP6P640X110-14N	AD8608ARUZ-REEL	Precision, Low Noise, CMOS, Rail-to-Rail, Input/Output Operational Amplifiers	1
U2	NUP4202	SOT65P220X110-6N	NUP4202VVI	ESD Protection Diode, Low Clamping Voltage	1
U3	KIA7812	TO-220-H-OUTSIDE	KIA7812API_h_outside	3-terminal 12V 1A Positive Voltage Regulator	1
U4	LP2985A-33DBV	SOT95P280X145-5N	LP2985A-33DBV	3.3V, 150mA Low-Noise Low-Dropout Regulator Whith Shutdown	1
U5	LP2985A-50DBV	SOT95P280X145-5N	LP2985A-50DBV	5V, 150mA Low-Noise Low-Dropout Regulator Whith Shutdown	1
U6	INA226	SOP5P0490X110-10N	INA226AIDGSR	0V to 10V High Accuracy Bi-Phase Measurement, Bi-Directional Current and Power Monitor with I ₂ C Compatible Interface	1
U7	REF333AIDBZR	SOT95P237X112-3N	REF333AIDBZR	3.3V, 30ppm/C Drift, 3.9uA, Voltage Reference	1
U8	AD8606	SOP6P490X110-8BN	AD8606ARMZ-REEL	Precision, Low Noise, CMOS, Rail-to-Rail, Input/Output Operational Amplifiers	1
U9	DS18B20	TO-92-H-OUTSIDE	DS18B20_h_outside	Programmable Resolution 1-Wire Digital Thermometer	1
U10	LMC7101	SOT95P280X145-5N	LMC7101AIMSX/NOPB	1-Wire Digital Thermometer	1
U11	STM32F373CCT6	QFP50P090X900X160-48N	STM32F373CCT6	ARM® Cortex®-M4 32b MCU+FPU, Up to 256KB Flash +32KB SRAM, Timers, 4 ADCs (16-bit Sig. Delta / 12-bit SAR), 3 DACs, 2 comp., 2.0-3.6 V ± 30ppm at (25±3°C), -30°C to +85°C, 6.6pF Ceramic SMD Crystal, Type	1
X1	24MHz	OSCC160X200X65-4N	Z4MHz_XRCGB24M000F3M00R0	HCR2016	1





