

Designator	Value	Digi-Key Part Number	Manufacturer Part Number	Description / Substitute / Comment
C1	510p			CAP CER C0G, NP0 100V RADIAL
C2	510p			CAP CER C0G, NP0 100V RADIAL
C3	47n	Mouser: 505-MKP2C024701C00JS	MKP2C024701C00JSSD	Metallized Polypropylene Capacitor .047uF 63 Volts 5%
C4	47n	Mouser: 505-MKP2C024701C00JS	MKP2C024701C00JSSD	Metallized Polypropylene Capacitor .047uF 63 Volts 5%
C5	47n	Mouser: 505-MKP2C024701C00JS	MKP2C024701C00JSSD	Metallized Polypropylene Capacitor .047uF 63 Volts 5%
C6	47n	Mouser: 505-MKP2C024701C00JS	MKP2C024701C00JSSD	Metallized Polypropylene Capacitor .047uF 63 Volts 5%
C7	1u	Mouser: 667-ECQ-E2105RJB	ECQ-E2105RJB	Film Capacitor 250VDC 1.0uF 5% MPET
C8	1u	Mouser: 667-ECQ-E2105RJB	ECQ-E2105RJB	Film Capacitor 250VDC 1.0uF 5% MPET
C9	0.1u	445-181261-ND	FG24X7R2A104KNT00	CAP CER 0.1UF 100V X7R RADIAL
C10	0.1u	445-181261-ND	FG24X7R2A104KNT00	CAP CER 0.1UF 100V X7R RADIAL
C11	1u	Mouser: 667-ECQ-E2105RJB	ECQ-E2105RJB	Film Capacitor 250VDC 1.0uF 5% MPET
C12	0.1u	445-181261-ND	FG24X7R2A104KNT00	CAP CER 0.1UF 100V X7R RADIAL
C13	0.1u	445-181261-ND	FG24X7R2A104KNT00	CAP CER 0.1UF 100V X7R RADIAL
C14	100u	493-4655-3-ND	UKA1H101MPD1TD	CAP ALUM 100UF 20% 50V
C15	100u	493-4655-3-ND	UKA1H101MPD1TD	CAP ALUM 100UF 20% 50V
C16	100u	493-4655-3-ND	UKA1H101MPD1TD	CAP ALUM 100UF 20% 50V
C17	100u	493-4655-3-ND	UKA1H101MPD1TD	CAP ALUM 100UF 20% 50V
C18	100u	493-4655-3-ND	UKA1H101MPD1TD	CAP ALUM 100UF 20% 50V
C19	100u	493-4655-3-ND	UKA1H101MPD1TD	CAP ALUM 100UF 20% 50V
C22	0.33u	Mouser: 505-MKP2D033301M00JO	MKP2D033301M00JO00	Metallized Polypropylene Capacitor 0.33 uF 100 VDC 5%
C23	0.33u	Mouser: 505-MKP2D033301M00JO	MKP2D033301M00JO00	Metallized Polypropylene Capacitor 0.33 uF 100 VDC 5%
C24	0.33u	Mouser: 505-MKP2D033301M00JO	MKP2D033301M00JO00	Metallized Polypropylene Capacitor 0.33 uF 100 VDC 5%
C25	0.33u	Mouser: 505-MKP2D033301M00JO	MKP2D033301M00JO00	Metallized Polypropylene Capacitor 0.33 uF 100 VDC 5%
D1	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D2	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D3	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D4	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D5	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D6	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D7	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D8	1N4148	1N4148FS-ND	1N4148	DIODE GEN PURP 100V 200MA DO35 or any other general purpose diode
D9	3.5mA	Mouser: 954-E-352	E-352	Diode Current Regulator J510 https://www.trendsetter.com/j510-to-92-2l.html
D10	1N5250	1N5250BTRFSCT-ND	1N5250BTR	DIODE ZENER 20V 500MW DO35
D11	3.5mA	Mouser: 954-E-352	E-352	Diode Current Regulator J510 https://www.trendsetter.com/j510-to-92-2l.html
D12	1N5250	1N5250BTRFSCT-ND	1N5250BTR	DIODE ZENER 20V 500MW DO35
D13	3.5mA	Mouser: 954-E-352	E-352	Diode Current Regulator J510 https://www.trendsetter.com/j510-to-92-2l.html
D14	1N5255	Mouser: 78-1N5255B	1N5255B-TR	DIODE ZENER 28V 500MW DO35
D15	3.5mA	Mouser: 954-E-352	E-352	Diode Current Regulator J510 https://www.trendsetter.com/j510-to-92-2l.html
D16	1N5255	Mouser: 78-1N5255B	1N5255B-TR	DIODE ZENER 28V 500MW DO35
HS1		Mouser: 490-HSE-B20254035H02	HSE-B20254-035H-02	Heatsink TO-220 25.4x25x12.7mm with pin
HS2		Mouser: 490-HSE-B20254035H02	HSE-B20254-035H-02	Heatsink TO-220 25.4x25x12.7mm with pin
HS3		Mouser: 490-HSE-B20254035H02	HSE-B20254-035H-02	Heatsink TO-220 25.4x25x12.7mm with pin
HS4		Mouser: 490-HSE-B20254035H02	HSE-B20254-035H-02	Heatsink TO-220 25.4x25x12.7mm with pin
HS5	DNP			
HS6	DNP			
HS7	DNP			
HS8	DNP			
J1		A113511-ND	3-641126-3	CONN HEADER VERT 3POS 2.54MM
J2		A113511-ND	3-641126-3	CONN HEADER VERT 3POS 2.54MM

J5		A113512-ND	3-641126-4	CONN HEADER VERT 4POS 2.54MM
Q1	LSK489			LSK489 SOIC or LSK489 TO-71 https://www.trendsetter.com/catalogsearch/result/?q=lsk489
Q2	LSJ689			LSJ689 SOIC or LSJ689 TO-71 https://www.trendsetter.com/catalogsearch/result/?q=lsj689
Q3	KSD1691	KSD1691YSTU-ND	KSD1691YSTU	TRANS NPN 60V 5A TO-126
Q4	KSB1151	KSB1151YSTU-ND	KSB1151YSTU	TRANS PNP 60V 5A TO-126
Q5	KSB1366	KSB1366GTU-ND	KSB1366GTU	TRANS PNP 60V 3A TO-220F
Q6	KSD2012	KSD2012GTU-ND	KSD2012GTU	TRANS NPN 60V 3A TO-220F
Q7	KSB1366	KSB1366GTU-ND	KSB1366GTU	TRANS PNP 60V 3A TO-220F
Q8	KSD2012	KSD2012GTU-ND	KSD2012GTU	TRANS NPN 60V 3A TO-220F
Q9	KSD1691	KSD1691YSTU-ND	KSD1691YSTU	TRANS NPN 60V 5A TO-126
Q10	KSB1151	KSB1151YSTU-ND	KSB1151YSTU	TRANS PNP 60V 5A TO-126
Q11	KSD1691	KSD1691YSTU-ND	KSD1691YSTU	TRANS NPN 60V 5A TO-126
Q12	KSB1151	KSB1151YSTU-ND	KSB1151YSTU	TRANS PNP 60V 5A TO-126
Q13	KSD1691	KSD1691YSTU-ND	KSD1691YSTU	TRANS NPN 60V 5A TO-126
Q14	KSB1151	KSB1151YSTU-ND	KSB1151YSTU	TRANS PNP 60V 5A TO-126
Q15	ZVN2106	ZVN2106A-ND	ZVN2106A	MOSFET N-CH 60V 450MA TO92-3
Q16	ZVP2106	ZVP2106A-ND	ZVP2106A	MOSFET P-CH 60V 280MA TO92-3
Q17	KSD2012	KSD2012GTU-ND	KSD2012GTU	TRANS NPN 60V 3A TO-220F
Q18	KSB1366	KSB1366GTU-ND	KSB1366GTU	TRANS PNP 60V 3A TO-220F
Q19	BC550	BC550CBUFS-ND	BC550CBU	TRANS NPN 45V 0.1A TO-92 or any other NPN general purpose
Q20	BC560	BC556BTACT-ND	BC556BTA	TRANS PNP 45V 0.1A TO-92 or any other PNP general purpose
Q21	BC550	BC550CBUFS-ND	BC550CBU	TRANS NPN 45V 0.1A TO-92 or any other NPN general purpose
Q22	BC560	BC556BTACT-ND	BC556BTA	TRANS PNP 45V 0.1A TO-92 or any other PNP general purpose
Q23	ZVN2106	ZVN2106A-ND	ZVN2106A	MOSFET N-CH 60V 450MA TO92-3
Q24	ZVP2106	ZVP2106A-ND	ZVP2106A	MOSFET P-CH 60V 280MA TO92-3
R1	49.9			0.125...0.5W metal film, metal oxide film
R2	49.9			0.125...0.5W metal film, metal oxide film
R3	1M			0.125...0.5W metal film, metal oxide film
R4	1M			0.125...0.5W metal film, metal oxide film
R5	20			0.125...0.5W metal film, metal oxide film
R6	20			0.125...0.5W metal film, metal oxide film
R7	20			0.125...0.5W metal film, metal oxide film
R8	20			0.125...0.5W metal film, metal oxide film
R9	20			0.125...0.5W metal film, metal oxide film
R10	20			0.125...0.5W metal film, metal oxide film
R11	100	3362P-101LF-ND	3362P-1-101LF	TRIMMER 100 OHM 0.5W PC PIN TOP
R12	4.99			0.125...0.5W metal film, metal oxide film
R13	4.99			0.125...0.5W metal film, metal oxide film
R14	100			2W metal film, metal oxide film
R15	100			2W metal film, metal oxide film
R16	1.4k			0.125...0.5W metal film, metal oxide film
R17	1.4k			0.125...0.5W metal film, metal oxide film
R18	487			gain setting resistor, highest possible quality, can be adjusted for required gain
R19	1k			load resistor, highest possible quality (DNP if volume control attached to the output)
R20	20			0.125...0.5W metal film, metal oxide film
R21	20			0.125...0.5W metal film, metal oxide film
R22	100	3362P-101LF-ND	3362P-1-101LF	TRIMMER 100 OHM 0.5W PC PIN TOP
R23	4.99			0.125...0.5W metal film, metal oxide film
R24	4.99			0.125...0.5W metal film, metal oxide film
R25	100			2W metal film, metal oxide film

R26	1.4k			0.125...0.5W metal film, metal oxide film
R27	1.4k			0.125...0.5W metal film, metal oxide film
R28	1k			load resistor, highest possible quality (DNP if volume control attached to the output)
R29	1M			0.125...0.5W metal film, metal oxide film
R30	1M			0.125...0.5W metal film, metal oxide film
R31	20			0.125...0.5W metal film, metal oxide film
R32	20			0.125...0.5W metal film, metal oxide film
R33	10k			0.125...0.5W metal film, metal oxide film
R34	10k			0.125...0.5W metal film, metal oxide film
R35	10k			0.125...0.5W metal film, metal oxide film
R36	10k			0.125...0.5W metal film, metal oxide film
R37	10k			0.125...0.5W metal film, metal oxide film
R38	10k			0.125...0.5W metal film, metal oxide film
R39	1M			0.125...0.5W metal film, metal oxide film
R40	1M			0.125...0.5W metal film, metal oxide film
R41	20			0.125...0.5W metal film, metal oxide film
R42	20			0.125...0.5W metal film, metal oxide film
R43	10k			0.125...0.5W metal film, metal oxide film
R44	10k			0.125...0.5W metal film, metal oxide film
R45	10k			0.125...0.5W metal film, metal oxide film
R46	10k			0.125...0.5W metal film, metal oxide film
R47	10k			0.125...0.5W metal film, metal oxide film
R48	10k			0.125...0.5W metal film, metal oxide film
R49	100			0.125...0.5W metal film, metal oxide film
R50	100			0.125...0.5W metal film, metal oxide film
R51	10k			0.125...0.5W metal film, metal oxide film
R52	10k			0.125...0.5W metal film, metal oxide film
R53	100			0.125...0.5W metal film, metal oxide film
R54	100			0.125...0.5W metal film, metal oxide film
R57	100			0.125...0.5W metal film, metal oxide film
R58	100			0.125...0.5W metal film, metal oxide film
R59	10k			0.125...0.5W metal film, metal oxide film
R60	10k			0.125...0.5W metal film, metal oxide film
R65	100			2W metal film, metal oxide film
R74	10k			0.125...0.5W metal film, metal oxide film
R75	20			0.125...0.5W metal film, metal oxide film
R76	10k			0.125...0.5W metal film, metal oxide film
R77	20			0.125...0.5W metal film, metal oxide film
R78	10k			0.125...0.5W metal film, metal oxide film
R79	20			0.125...0.5W metal film, metal oxide film
R80	10k			0.125...0.5W metal film, metal oxide film
R81	20			0.125...0.5W metal film, metal oxide film
U7	TL052	296-7163-5-ND	TL052CP	OPAMP JFET 2 CIRCUIT 8DIP
U8	TL052	296-7163-5-ND	TL052CP	OPAMP JFET 2 CIRCUIT 8DIP
	socket for Q1	ED11229-ND	803-47-006-10-002000	socket for TO-71 6-pin
	socket for Q2	ED11229-ND	803-47-006-10-002000	socket for TO-71 6-pin
	socket for U7	ED90032-ND	110-43-308-41-001000	CONN IC DIP SOCKET 8POS
	socket for U8	ED90032-ND	110-43-308-41-001000	CONN IC DIP SOCKET 8POS