

**General Notes:**

- The PCB contains two identical circuits separated by a vertical black line. There is also a third section found at the base of the PCB for the external noise input. The components for this section are listed under "Section 1" below. In "Section 2", each value in the "Reference" column appears twice (2x) on the PCB. The "Total" column reflects this.

**Section 1****Resistors (1/4 watt, +/- 5%)**

Value	Reference	Total	Description	Mouser # (or option)
1K	R6, R7	2		660-MF1/4LCT52R102J
1K5	R10	1		660-MF1/4LCT52R152J
10K	R5, R8,	2		660-MF1/4LCT52R103J
22K	R3	1		660-MF1/4LCT52R223J
47K	R1, R2, R4	3		660-MF1/4LCT52R473J
4M7	R9	1		603-CFR-25JT-52-4M7

**Capacitors**

Value	Reference	Total	Description	Mouser # (or option)
100nf	C2	1		810-FA16C0G1H10400
1uf	C1	1		581-TAP105K025CRS

**Transistors**

Value	Reference	Total	Description	Mouser # (or option)
2N3904	Q1, Q2	2		610-2N3904
2N3906	Q3	1		610-2N3906

## Section 2

### **Resistors (1/4 watt, +/- 5%)**

<b>Value</b>	<b>Reference</b>	<b>Total</b>	<b>Description</b>	<b>Mouser # (or option)</b>
47R	R41	2		660-MF1/4LCT52R470J
150R	R37, R39	4		660-MF1/4LCT52R151J
220R	R54	2		660-MF1/4LCT52R221J
470R	R30	2		660-MF1/4LCT52R471J
1K	R42	2		660-MF1/4LCT52R102J
2K2	R52	2		660-MF1/4LCT52R222J
3K3	R16, R31, R34, R38, R50	10		660-MF1/4LCT52R332J
4K7	R23, R29, R49	6		660-MF1/4LCT52R472J
10K	R12, R21, R22, R24, R25, R28, R35, R51	16		660-MF1/4LCT52R103J
15K	R32, R36	4		71-CCF0715K0JKE36
22K	R13, R18, R26, R27, R33	10		660-MF1/4LCT52R223J
33K	R40	2		71-CCF0733K0JKE36
47K	R17, R19, R20	6		660-MF1/4LCT52R473J
68K	R11, R53	4		279-RR02J68KTB
100K	R14, R15, R45, R47	8		660-MF1/4LCT52R104J
1M	R46	2		603-CFR-25JR-521M
4M7	R48	2		603-CFR-25JT-52-4M7
22M	R43, R44	4		594-VR2522M5%

## Capacitors

Value	Reference	Total	Description	Mouser # (or option)
22pf	C5	2		810-FG18C0G1H220JNT0
470pf	C12,	2		505-FKP2G004701D00KS
1nf	C4, C6, C7, C8, C13, C15	12		75-1C20C0G102J050B
10nf	C14	2		581-SR215C103K
47nf	C9	2		594-K473K10X7RF5UH5
15uf	C3, C10, C11	6		581-TAP156K016SCS

## Diodes

Value	Reference	Total	Description	Mouser # (or option)
1N457	D1, D2, D3	6		512-1N457

## Transistors

*Q9, Q10, Q14, Q16 are selected for high beta value.*

*Q18 is selected for low beta value.*

Value	Reference	Total	Description	Mouser # (or option)
2N3904	Q4, Q5, Q7, Q11, Q13, Q15, Q17	14		610-2N3904
2N3906	Q6, Q8, Q9, Q10, Q12, Q18	12		610-2N3906
PN3565	Q14, Q16	4		610-PN3565

## Miscellaneous

	Total	Description	Mouser # (or option)
Banana jacks (black)	4		530-108-0903-1
Banana jacks (red)	2		530-108-0902-1
Relay	2		655-RT424024
Standoffs	4	14mm, M3	855-R30-3011402
EDAC power connector	1	<i>optional</i>	587-306-50-010

## **Mouser Cart**

*\*NB: potentiometers, screws, EDAC power connector are not included in the Mouser Cart.*

*\*Some items may be backordered.*

<https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=da4aa99af6>

## **Selected Transistors**

The following Hfe values can serve as guidelines for the selected transistors.

Q14 & Q16: Hfe > ~250

Q9 & Q10: Hfe > ~200

Q18: Hfe < ~160