A

P1
Digital Arduino
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

VCC
P3
VCC

P4
Analog Arduino
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

VCC

R2
Res1
1K

+ C1
Cap Pol1
0.1uF

GND

GND

Knob Speed1
1
2
Header 2

Knob Depth1
1
2
Header 2

R3
Res1
1K

P2
1
2
3
MIDI

U4A
1   7
2   8
6N138

D1
Diode 1N4148

U4B
4   6
3   5
6N138

R1
Res1
1K

R17
Res1
1K

P3
1   2
3   4
5   6
7   8
9   10
11 12
13 14
15 16
17 18
19 20
Header 10X2

GND   GND

B

C2
+ Cap Pol1
GND 0.1uF

VCC

VCC C3
+ Cap Pol1
0.1uF   GND

R4
R5
Res1
1K
RPot
1K

VCC
+ C5
Cap Pol1
0.1uF
GND

C6
+ Cap Pol1
100pF

R10
Res1
1K

2
−
8
1
4.5V
3
+
4
U1A
NE5532P

R11
Res1
1K

R13
Res1
1K

VCC
C4
+ GND
Cap Pol1
0.1uF

1
4.5V
4
−
11
2
5
3
+
8
7
6
U2A
LM13700N

R6
Res1
1K

R7
RPot
1K

6
4.5V
−
8
7
5
+
4
U1B
NE5532P

R12
Res1
1K

R8
Res1
1K

R9
RPot
1K

2
4.5V
−
8
1
3
+
4
U3A
NE5532P

C7
+ Cap Pol1
100pF

R14
RPot
1K

J1
Phonejack2
GND

J2
Phonejack2
GND

VCC
R15
Res1
1K
R16
Res1
1K

4.5V
+ C8
Cap Pol1
0.1uF
GND

GND

GND

GND

GND

GND

C

D

Comment	Description	Designator	Footprint	LibRef	Quantity
Cap Pol1	Polarized Capacitor (Radial)	C1, C2, C3, C4, C5, C6, C7, C8	RAD-0.1	Cap Pol1	8
Diode 1N4148	High Conductance Fast Diode	D1	DO-35	Diode 1N4148	1
Phonejack2	Jack Socket, 1/4" [6.5mm], Thru-Hole, Vertical, 2-Conductor Open Circuit	J1, J2	JACK/6-V2	Phonejack2	2
Header 2	Header, 2-Pin	Knob Depth1, Knob Speed1	HDR1X2	Header 2	2
Digital Arduino	Header, 15-Pin	P1	HDR1X15	Header 15	1
MIDI	Header, 3-Pin	P2	HDR1X3	Header 3	1
Header 10X2	Header, 10-Pin, Dual row	P3	HDR2X10	Header 10X2	1
Analog Arduino	Header, 15-Pin	P4	HDR1X15	Header 15	1
Res1	Resistor	R1, R2, R3, R5, R6, R8, R10, R11, R12, R13, R15, R16, R17	AXIAL-0.3	Res1	13
RPot	Potentiometer	R4, R7, R9, R14	VR5	RPot	4
NE5532P	Dual Low-Noise Operational Amplifier	U1, U3	P008	NE5532P	2
LM13700N	Dual Operational Transconductance Amplifier with Linearizing Diodes and Buffers, 16-pin MDIP	U2	N16E	LM13700N	1
6N138	Optocoupler, Phototran	U4	DIP8	ILD74	1