

CIRCUIT SCHEMATICS CHEAT SHEET

FOR THE WORKSHOP

HOW TO DEMYSTIFY AUDIO CIRCUITS

ORGANIZED BY

KOMA ELEKTRONIK

1. SYMBOLS + POWER + PROTECTION + HARDWARE

2. TRANSISTOR & OPAMP CONFIGURATIONS

3. FENDER FUZZ WAH PEDAL

PRESENTED BY
MAX GENSON

Workshop by
KOMA Elektronik

Sheet: /

File: schematic_symbols_cheat_sheet.kicad_sch

Title: Cheat Sheet

Size: A4

Date: 2024-11-07

KiCad E.D.A. 8.0.6

Rev:

Id: 1/4

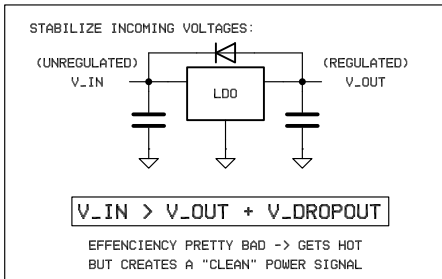
BASIC COMPONENTS

| NAME | EU | US | LETTER |
|-------------------------|----|----|--------|
| RESISTOR | | | R |
| CAPACITOR (POLARIZED) | | | C, CP |
| CAPACITOR (UNPOLARIZED) | | | C |
| INDUCTOR | | | L |

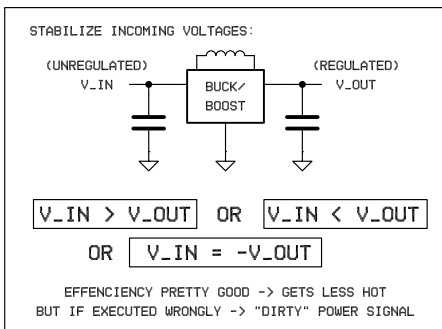
TRANSISTORS

| NAME | N-TYPE | P-TYPE |
|----------------------------------|--------|--------|
| BIPOLAR JUNCTION TRANSISTOR | | |
| FIELD EFFECT TRANSISTOR | | |
| JUNCTION FIELD EFFECT TRANSISTOR | | |
| DARLINGTON BJT | | |

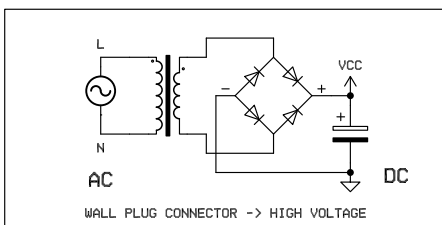
LDO VOLTAGE REGULATOR



BUCK/BOOST CONVERTERS



SWITCHING MODE



POWER SYMBOLS

| NAME | SYMBOL |
|---------|--------|
| GROUND | |
| + POWER | |
| - POWER | |

HARDWARE

| NAME | SYMBOL |
|--------------------------|--------|
| POTENTIOMETER (KNOB) | |
| DOUBLE ON-OFF SWITCH | |
| 3-POS SWITCH | |
| MOMENTARY SWITCH | |
| MONO (TS) JACK | |
| STEREO (TRS) JACK | |
| MONO (TS) JACK SWITCHED | |
| DC BARREL JACK | |
| GENERIC 4-POLE CONNECTOR | |

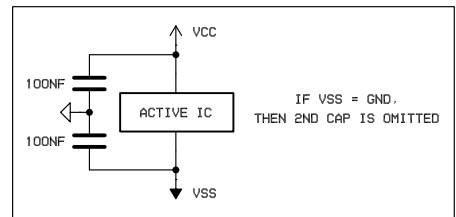
DIODES

| NAME | SYMBOL | FUNCTION |
|--------------|--------|------------------------------------|
| SMALL SIGNAL | | STANDARD DIODE |
| LED | | EMITS LIGHT |
| ZENER | | CONSTANT REVERSE BREAKDOWN VOLTAGE |
| SCHOTTKY | | LOW BARRIER VOLTAGE |

OPAMPS

| NAME | SYMBOL |
|-------------------------|--------|
| VOLTAGE FEEDBACK OPAMP | |
| TRANS-CONDUCTANCE OPAMP | |

POWER CONDITIONING



PROTECTION

| | |
|-------------------------------------|--|
| STATIC DISCHARGE TVS DIODES | |
| REVERSE VOLTAGE RECTIFIER DIODES | |
| OVERVOLTAGE SCHOTTKY DIODES | |
| OVERCURRENT FUSES | |

THESE ARE USUALLY FOUND AT INPUTS OF POWER CIRCUITS OR SOMETIMES AUDIO INPUTS

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Sheet: /1. Symbols + Power + Protection + Hardware/

File: symbols.kicad_sch

Title: Symbols + Power + Protection + Hardware

Size: A4

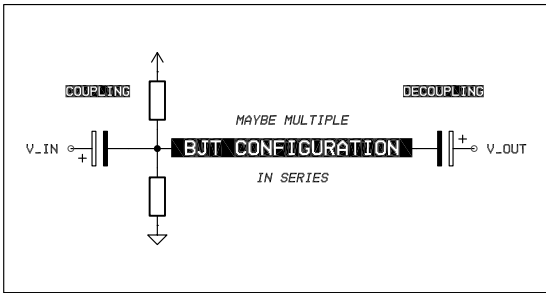
Date: 2024-11-07

KiCad E.D.A. 8.0.6

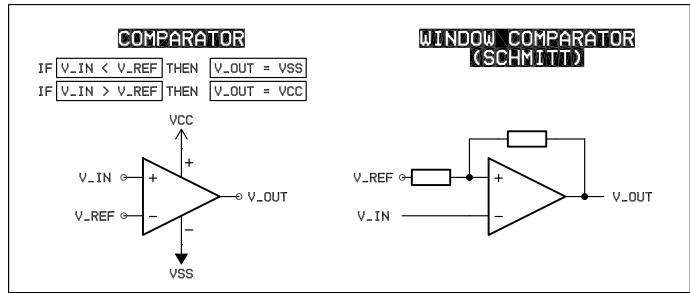
Rev:

Id: 2/4

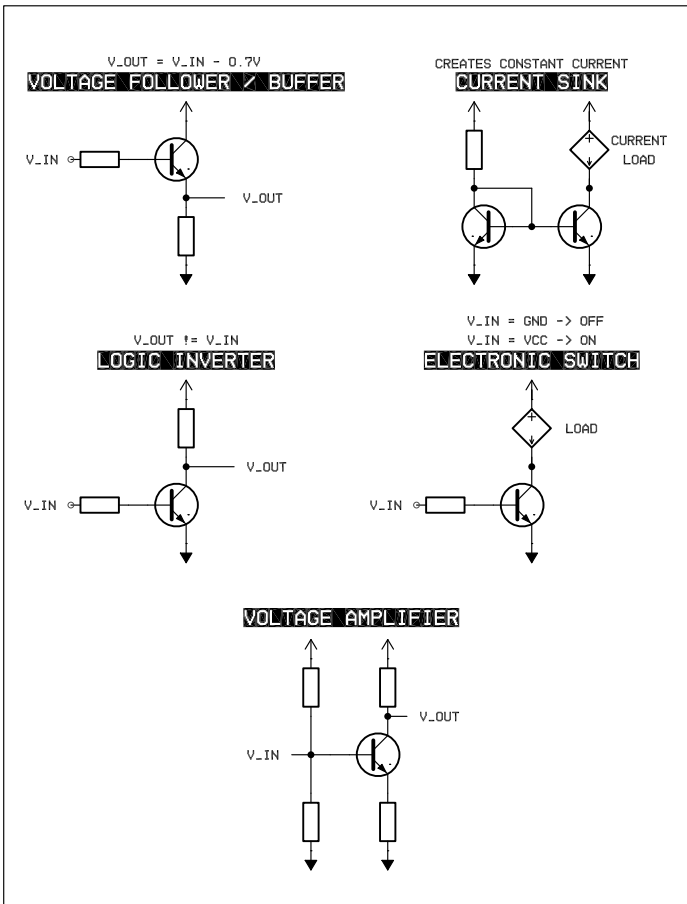
UNIPOLAR STRUCTURE



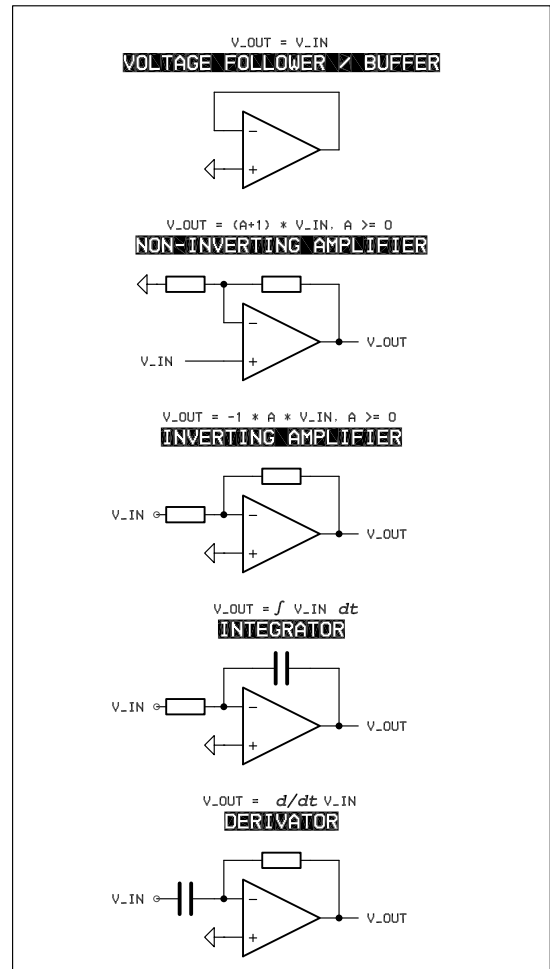
POSITIVE FEEDBACK OPAMPs



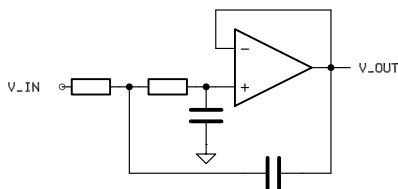
MOST COMMON BJT CONFIGURATIONS



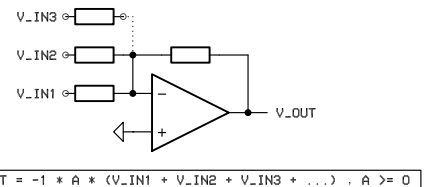
NEGATIVE FEEDBACK OPAMPs



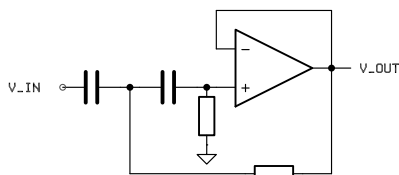
ACTIVE 2ND ORDER LOW PASS



INVERTING SUMMING AMPLIFIER



ACTIVE 2ND ORDER HIGH PASS



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Sheet: /2. Transistor & Opamp Configurations/
File: configurations.kicad_sch

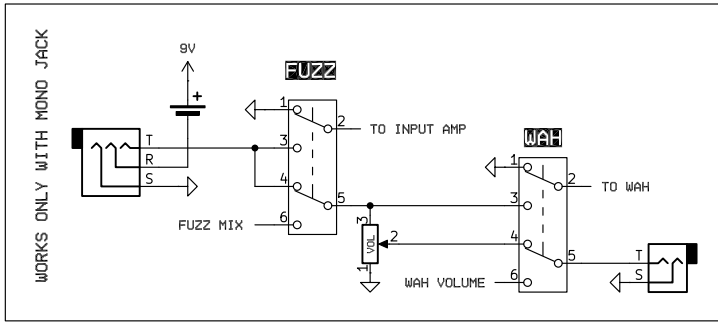
Title: Transistor & Opamp Configurations

Size: A4 Date: 2024-11-07
KiCad E.D.A. 8.0.6

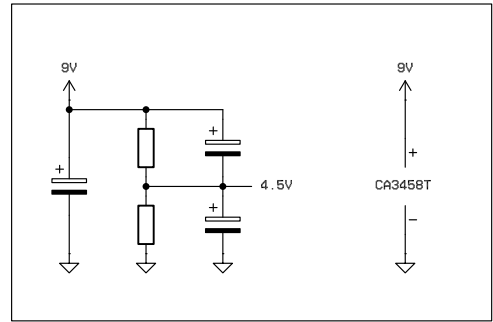
Rev:
Id: 3/4

FENDER FUZZ WAH PEDAL (REVISITED)

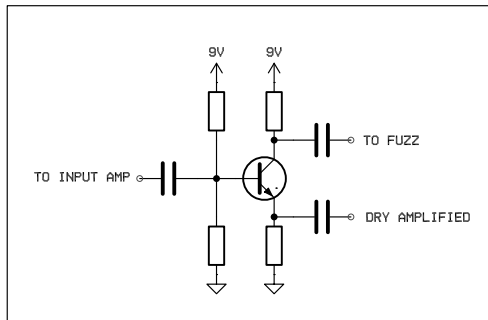
SIGNAL ROUTING



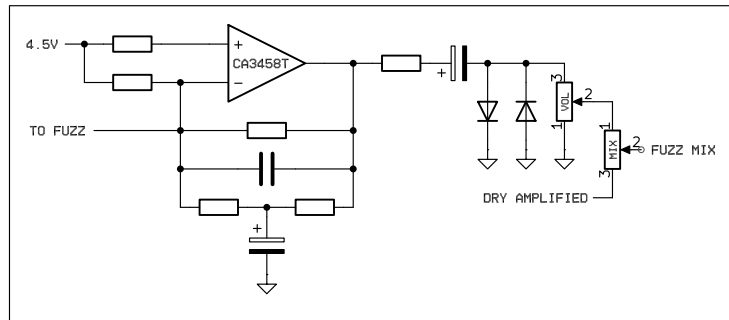
POWER CONDITIONING



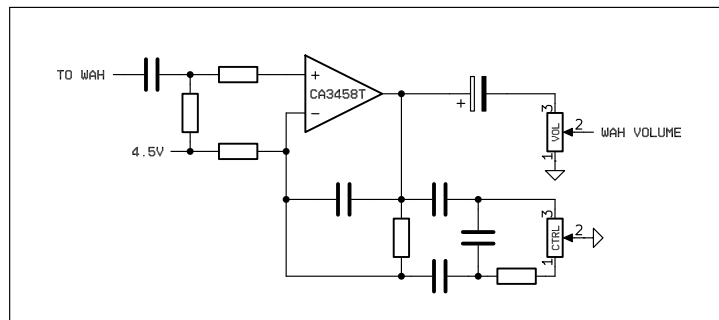
FUZZ INPUT STAGE



FUZZ MAGIC



WAH MAGIC



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 Sheet: /3. Fender Fuzz Wah Pedal/
 File: fuzz.kicad_sch
Title: Fender Fuzz Wah Pedal
 Size: A4 Date: 2024-11-07
 KiCad E.D.A. 8.0.6

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