

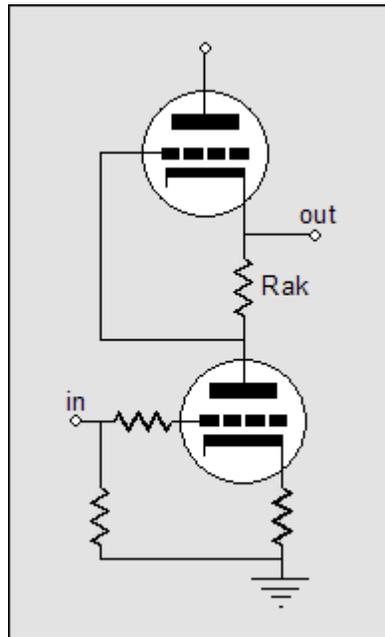
SRPP on Steroids

12 February 2005

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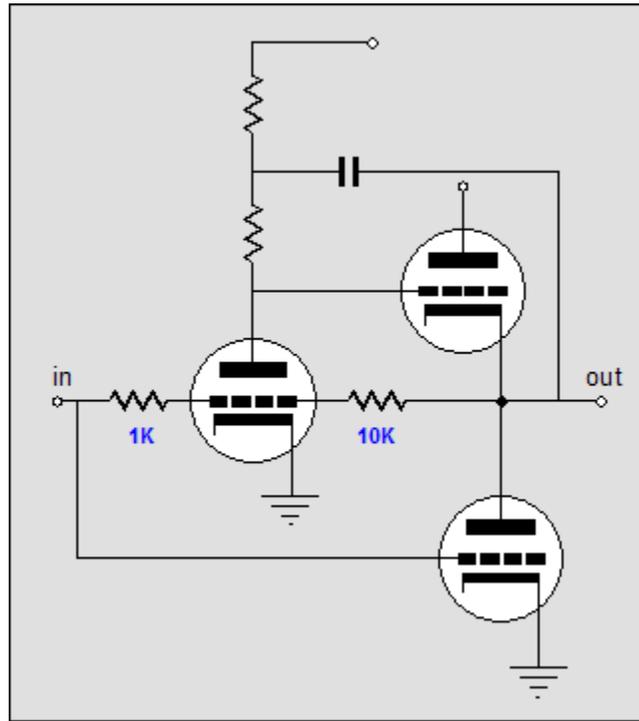
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TCJ My-Stock DB



SRPP translated again

Where have these blogs been going? We started with the [White cathode follower](#), then the [Taylor amplifier](#), then the Taylor source follower, then the [Macaulay amplifier](#), and then the [Broskie-Macaulay amplifier](#), each defining a signpost on the same road. The idea behind all these seemingly different circuits is that a push-pull amplifier can be made that uses the same polarity output devices, but dispenses with the need for a phase splitter by sensing the current flow through a primary output device to derive the needed drive signal for the other output device.



The Murray amplifier (Above) looks like it might be located on the same road; but once again, looks deceive, as both output devices finds their drive signal from the same input, no inverse reflecting the other output device's current.

On the other hand, there is a circuit that can legitimately be found along this road: the SRPP. It is also a push-pull amplifier that cheats the system, by doing away with a phase splitter.

I have displayed how to make **transistor-based SRPP** circuit, but now it's time to supercharge the SRPP and translate it from vacuum to silicon. But let's make our translation in easy steps.

TCJ My-Stock DB [DEMO DATABASE]

Part Type: Diode

Name: 1N4007

Brand: Fairchild

Group: Generic Rectifier

Style: DO-41

Vendor: Jameco

Vendor Part ID: 36011

Project: No Project

Project Part ID: ?

Quantity: 100

Condition: New

Value per item: .029

Paid per item: .029

Total Value: \$2.90

Status: Keep

Location: Bin 17

Comments: 1A / 1000V

Buttons: Clear All, Accept Part, Edit Lookup Database

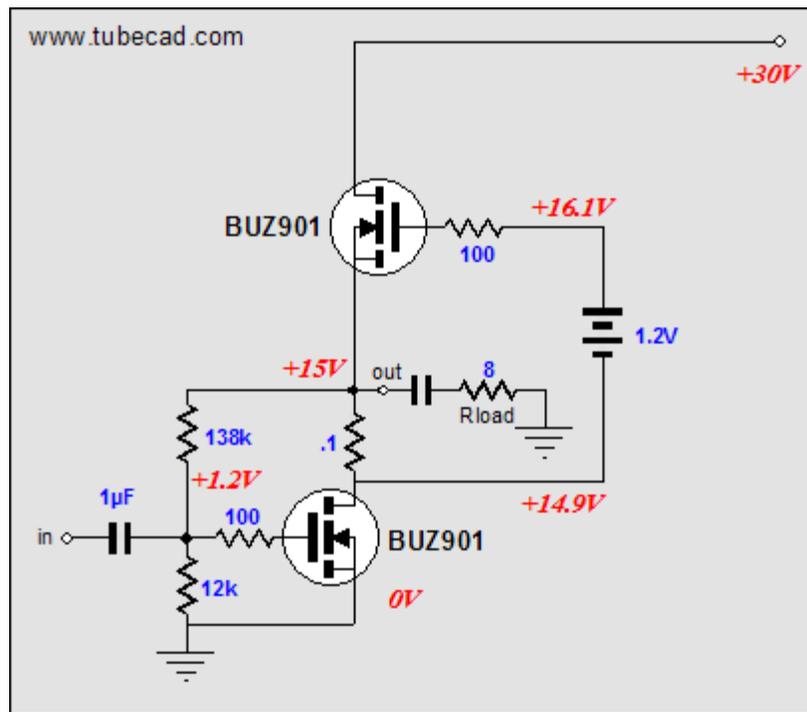
Total Items = 251 | Total Value = \$2,032.24 | Filter

TCJ My-Stock DB [Demo Database] [1491 - RCA]

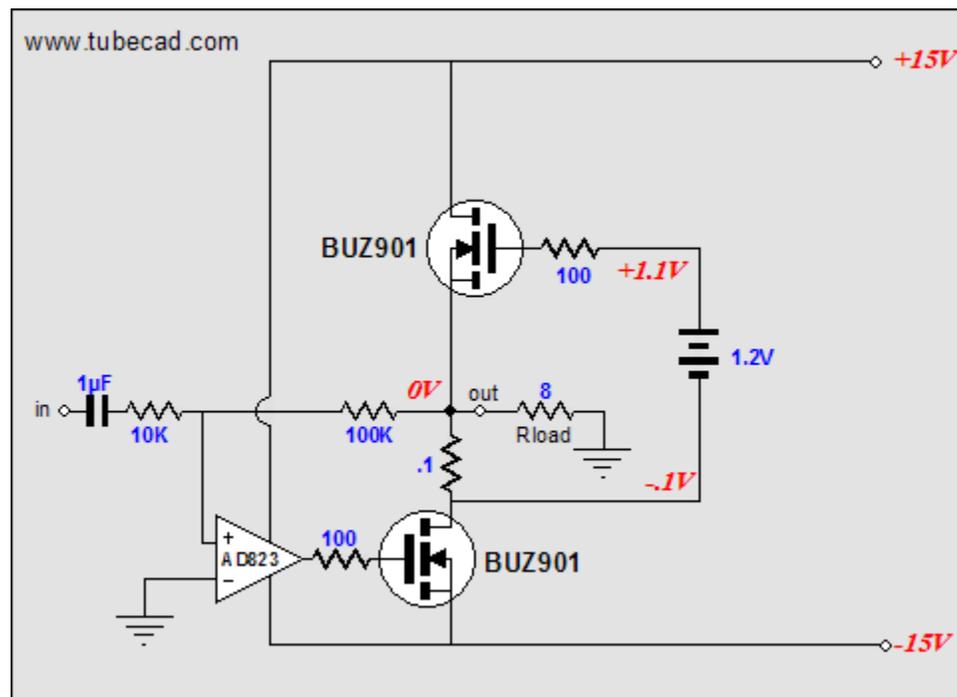
Type	Tube	Tube	Tube
Name	5887WA	5891	6L34
Brand	GE	RCA	Mullard
Group	Trode	Trode	Pentode
Style	9-Pin Min.	Octal	9-Pin Min.
Vendor	Antique Electronic Supply	Swap Meet	Swap Meet
Vendor Part ID	NA	NA	NA
Project	Line Amplifier	No Project	Power Amplifier
Project Part ID	NA	NA	V5
Quantity	4	3	5
Condition	NOB	NOB	NOB
Value	\$6.50	\$25.00	\$25.00
Paid	\$3.50	\$25.00	\$1.00
Total Value	\$26.00	\$150.00	\$150.00
Status	Keep	Sell	Keep
Location	Box 3	Box 3	Box 1
Comments	Tested	Nice tube, should see what they are going for on ebay	Might be worth a bit more!

Search Internet: Google.com, Brand LVL, Mouser.com, Vendor LVL, Digikey.com, Partimage

Total Items = 245 | Total Value = \$2,074.86 | Filtered = F



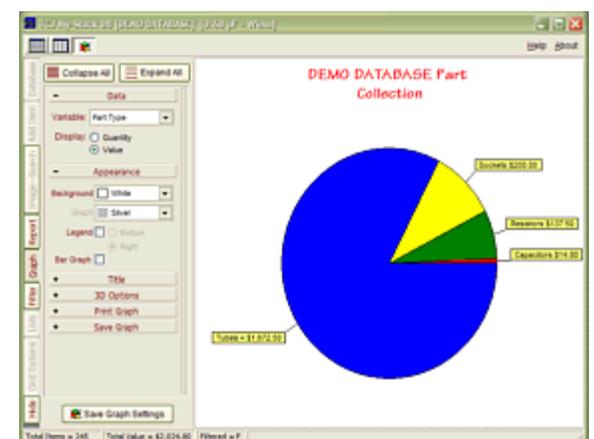
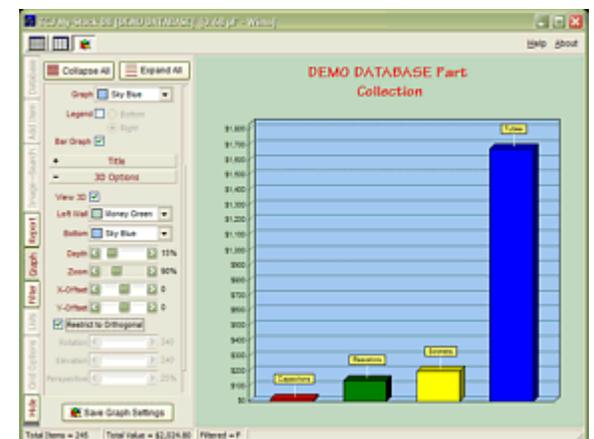
The circuit above is a MOSFET-based SRPP. As the amplifier stands, it will not easily translate into a working amplifier without first carefully matching the output MOSFETs. Second, the amplifier will not offer a low output impedance, as it falls somewhere between being a current amplifier and a voltage amplifier, with an output impedance of 23 ohms. So, the next step is to clean up the bottom output device's output.



The OpAmp's feedback loop encompasses the bottom MOSFET, greatly lowering its distortion and output impedance. The OpAmp also sets the DC

Part	Value	Quantity	Brand	Vendor
Capacitor	1.5uF MKP	4	Vishay	Essey
Resistor	1 ohm	25	Shale	Essey
Tube	2A3	3	BGA	Electronic Plus Market
Tube	6AB4	7	Ampere	Electronic Plus Market
Tube	6BL7	4	Sylvania	Essey Meet
Tube	6BD7	4	Sylvania	Jark TV Repair
Tube	6X4	3	Ampere	Essey Meet
Tube	6SL7	11	Tung-Sol	Jark TV Repair
Tube	6SL7	3	Defonstom	Essey Meet
Tube	6SL7	15	Sylvania	Essey Meet
Tube	12AT7	22	National	Essey Meet
Tube	12AT7	11	Ampere	Essey Meet
Resistor	100 ohm	8	Variety	Electronic Plus Market
Resistor	4000 ohm	10	Variety	Parts Connection
Tube	6BE7	5	Tung-Sol	Essey Meet
Tube	6BD7A	4	GE	Amique Electronic Supply
Tube	6BE7	3	RCA	Essey Meet
Tube	6X4	5	Mullard	Essey Meet
Socket	PCB Socket	100	?	Essey

Part Type	Name	Quantity	Brand	Vendor
Capacitor	0.01 uF	4	Vishay	Essey
Resistor	1 ohm	25	Shale	Essey
Tube	2A3	3	BGA	Electronic Plus Market
Tube	6AB4	7	Ampere	Electronic Plus Market
Tube	6BL7	4	Sylvania	Essey Meet
Tube	6BD7	4	Sylvania	Jark TV Repair
Tube	6X4	3	Ampere	Essey Meet
Tube	6SL7	11	Tung-Sol	Jark TV Repair
Tube	6SL7	3	Defonstom	Essey Meet
Tube	6SL7	15	Sylvania	Essey Meet
Tube	12AT7	22	National	Essey Meet
Tube	12AT7	11	Ampere	Essey Meet
Resistor	100 ohm	8	Variety	Electronic Plus Market
Resistor	4000 ohm	10	Variety	Parts Connection
Tube	6BE7	5	Tung-Sol	Essey Meet
Tube	6BD7A	4	GE	Amique Electronic Supply
Tube	6BE7	3	RCA	Essey Meet
Tube	6X4	5	Mullard	Essey Meet
Socket	PCB Socket	100	?	Essey



OpAmps ensure low distortion and output impedance, while maintaining a low DC offset and a steady idle current.

Conclusion

No, this is not my proposal of what a perfect amplifier should look like, but rather a filling in of an obvious hole in our array of amplifiers on the same theme. How would the amplifier sound if built? Probably, fairly good, but I am only guessing. But if you decide to give it test drive, please share your results with us.

//JRB

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