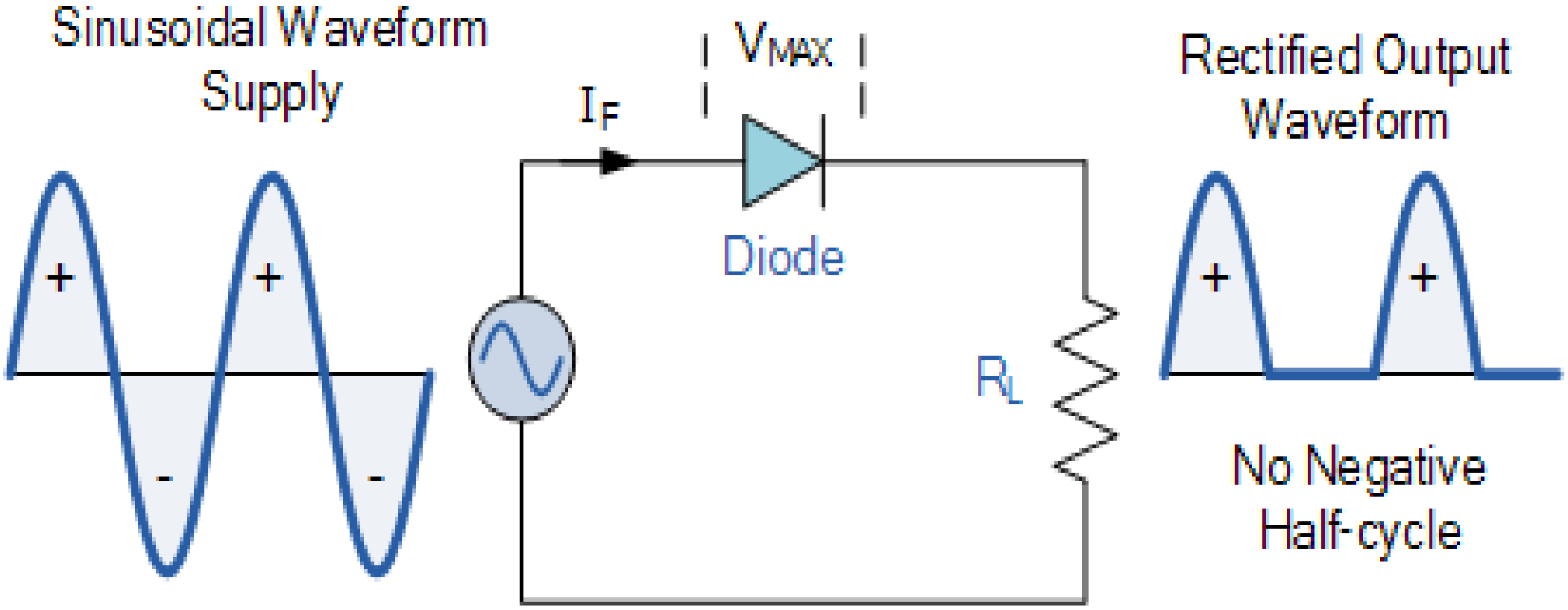
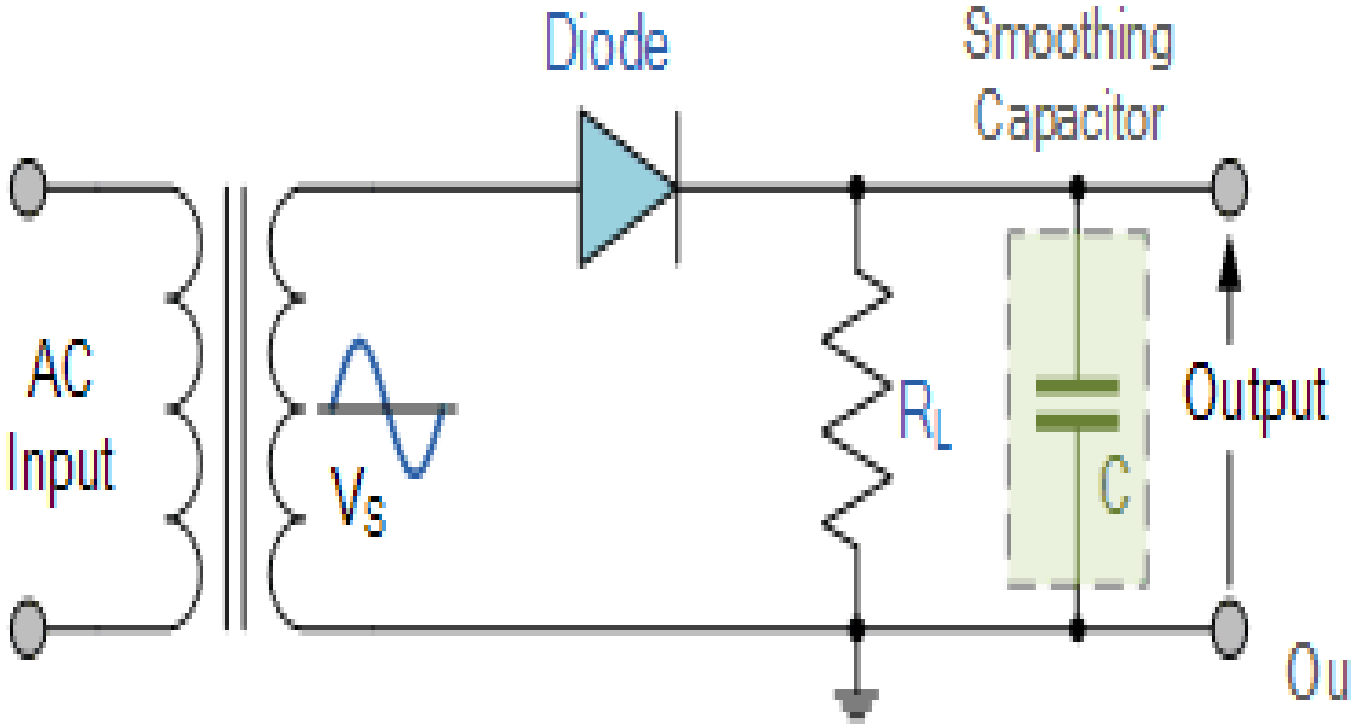
Introduction to DC Power Supplies

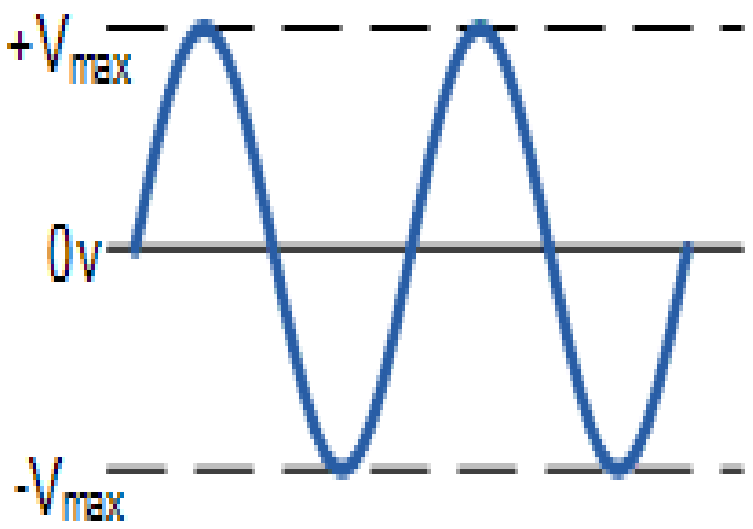


Presented by:
Bruce McCaskie
N6THN

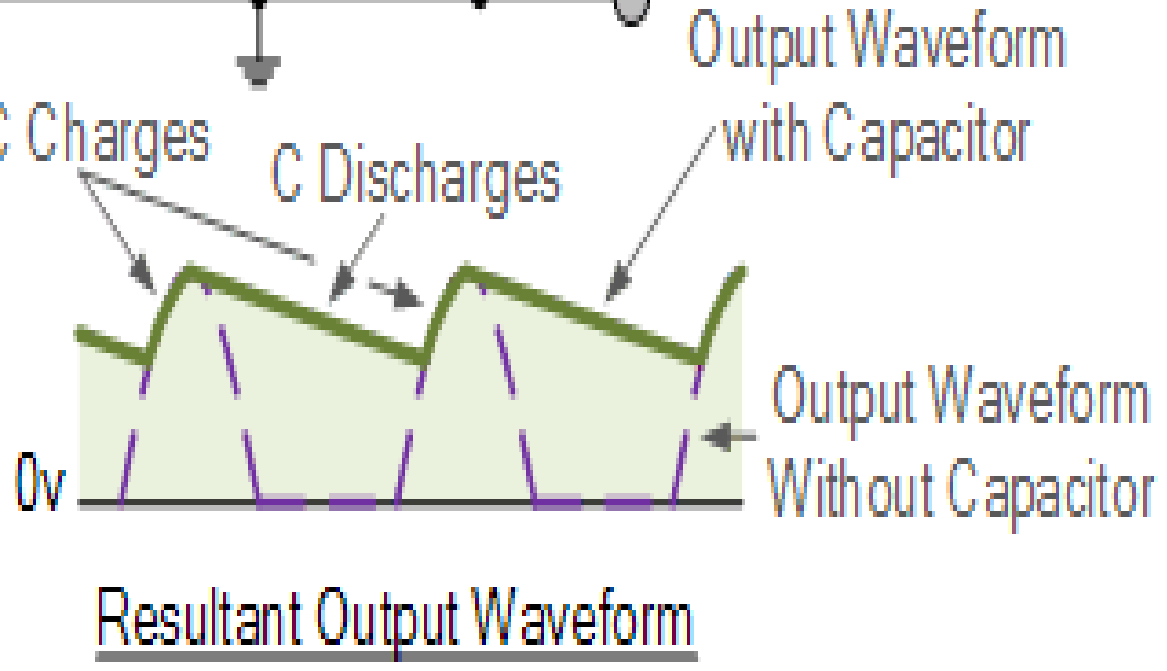
Half Wave DC Supply





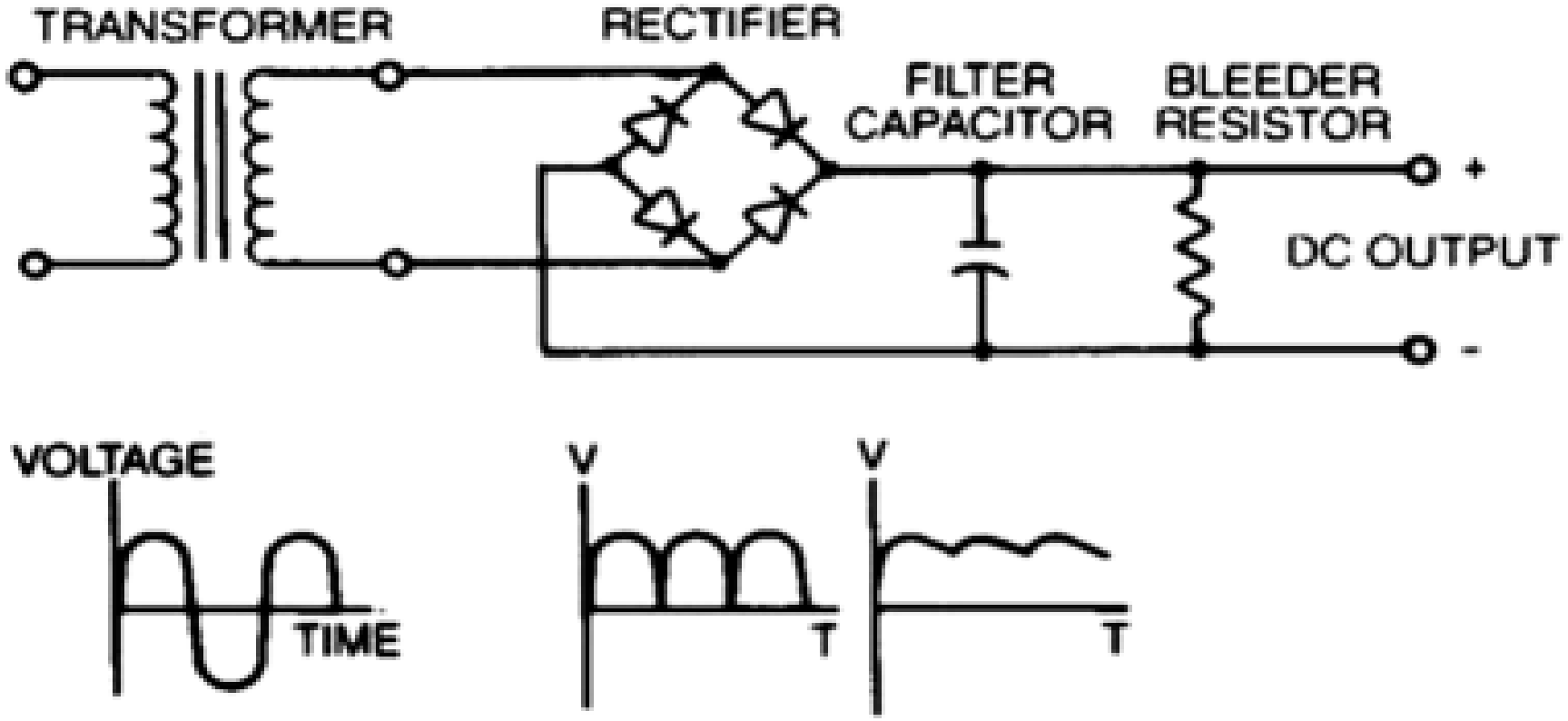


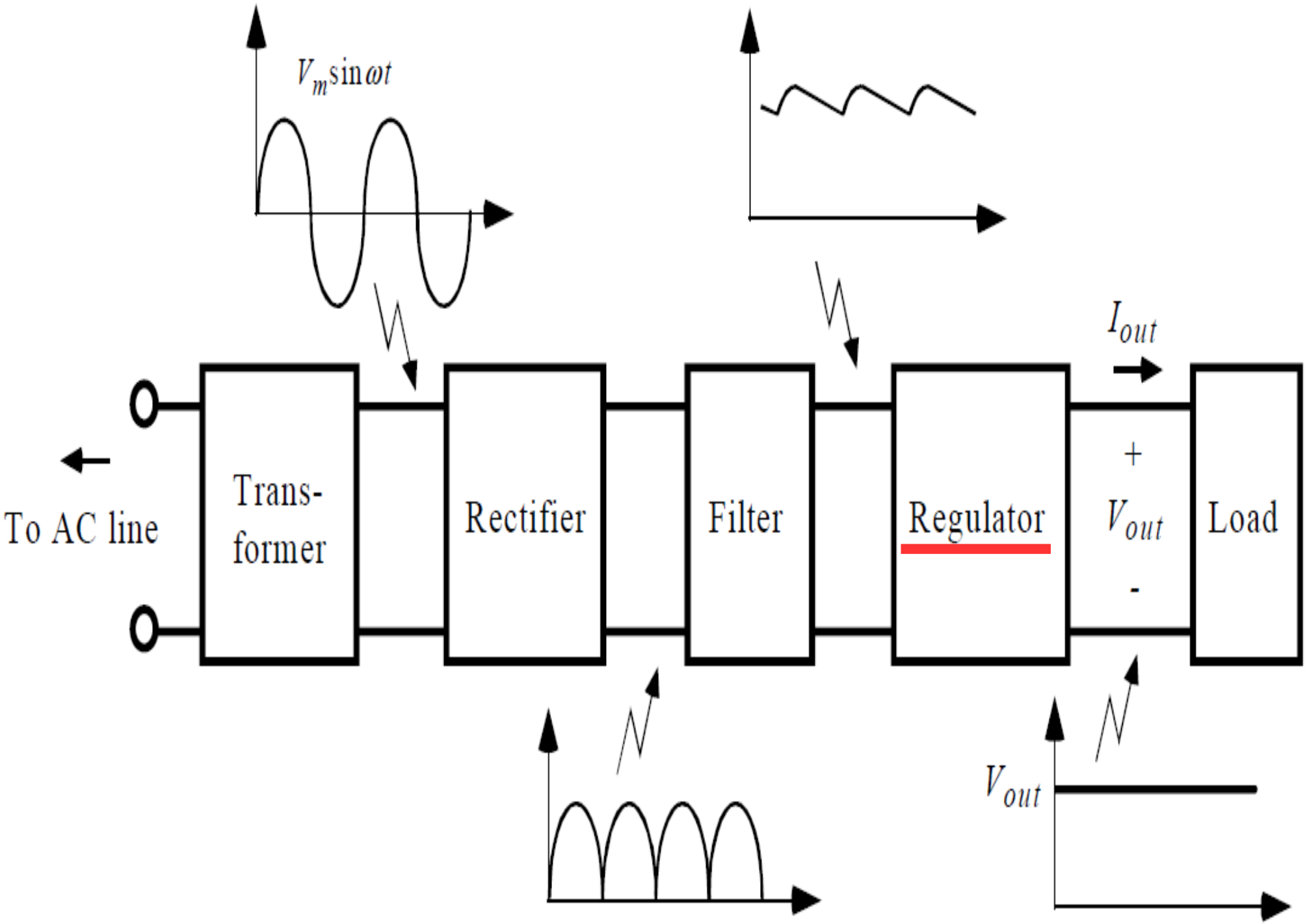
AC Input Waveform



Resultant Output Waveform

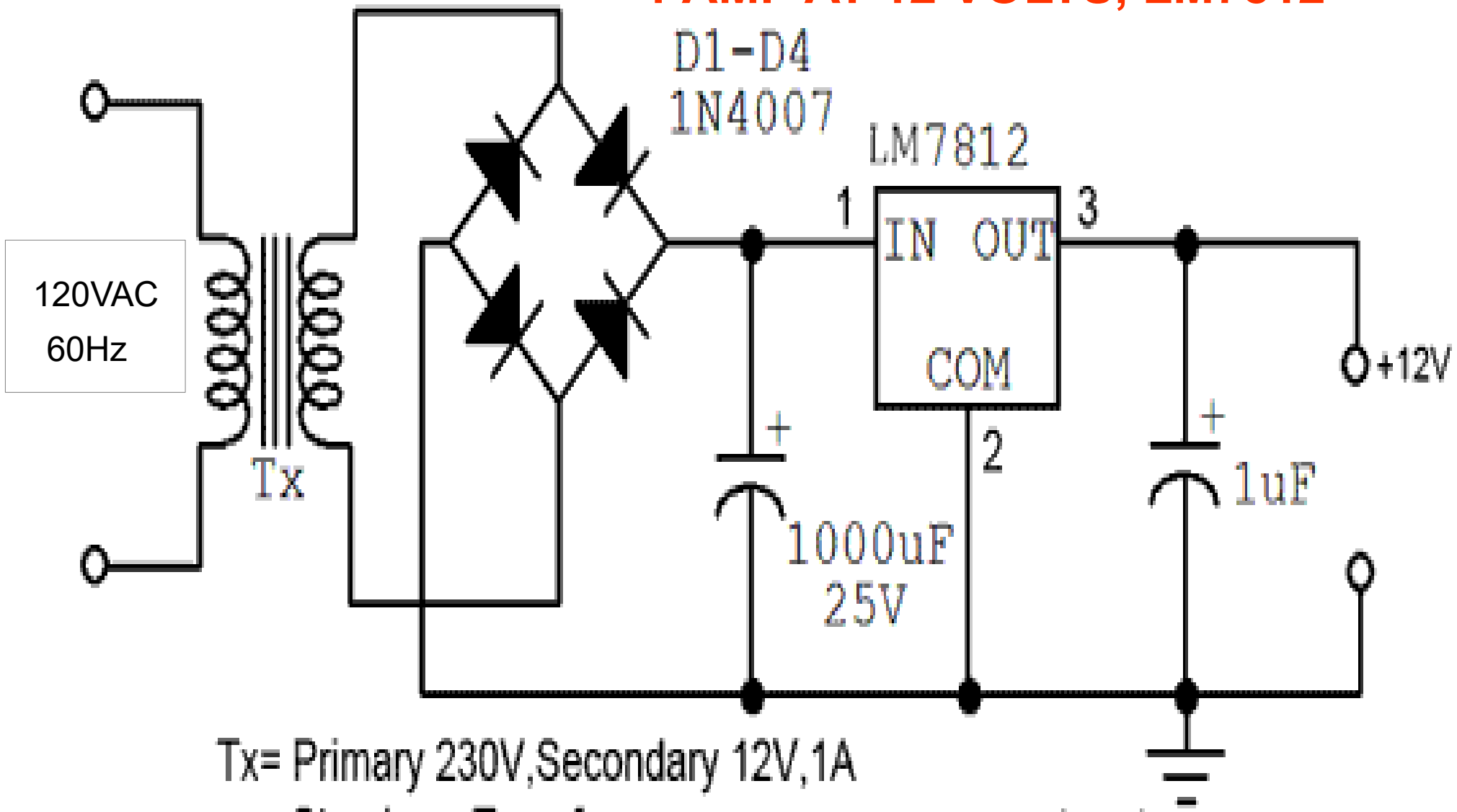
Full Wave Filtered DC Supply





Components of a typical linear power supply

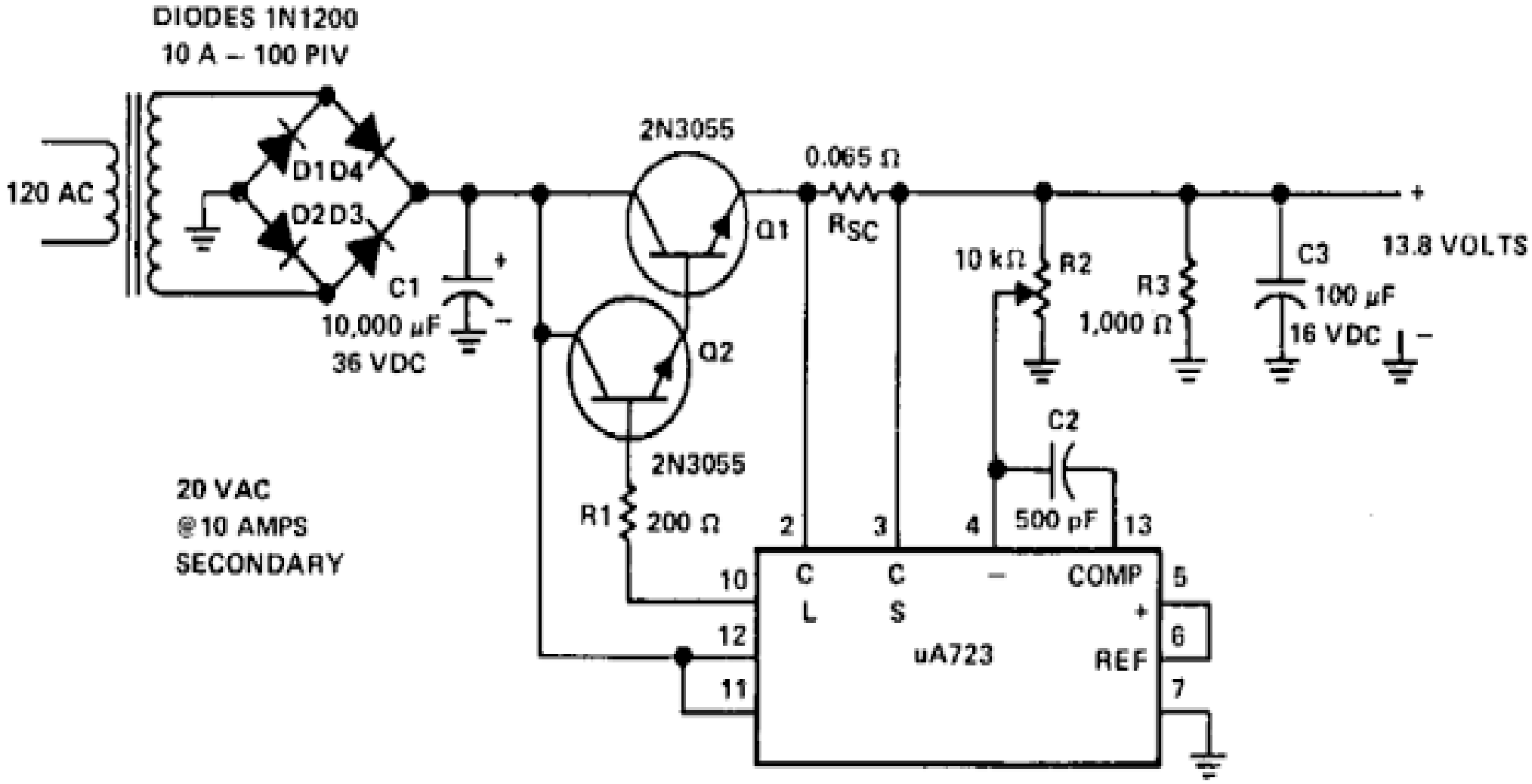
1 AMP AT 12 VOLTS, LM7812



Tx= Primary 230V,Secondary 12V,1A
Stepdown Transformer

www.circuitstune.com

13.8 VOLTS AT 10 AMPS



Full Wave Linear Regulated Supply



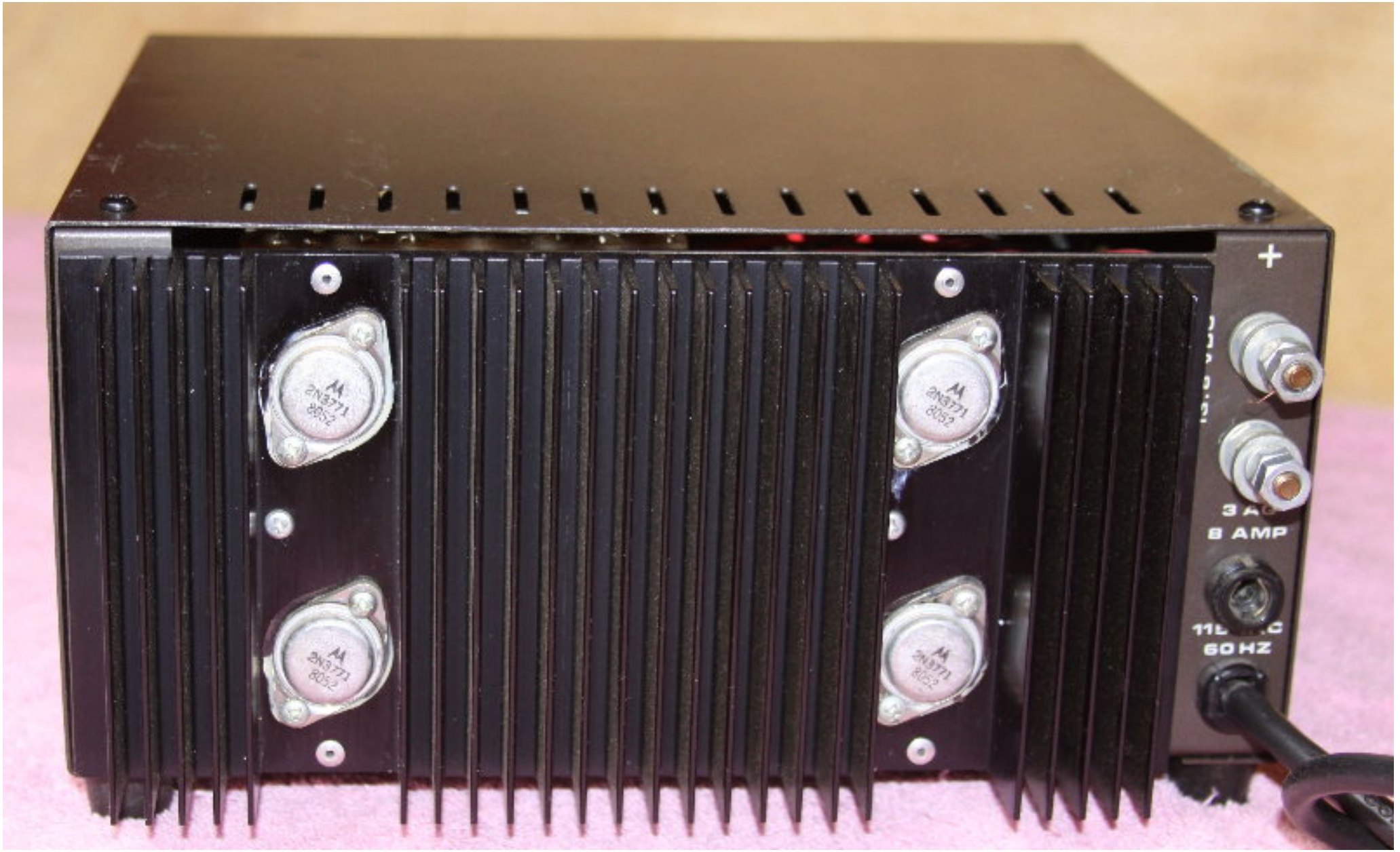
Typical Ham Radio Power Supplies

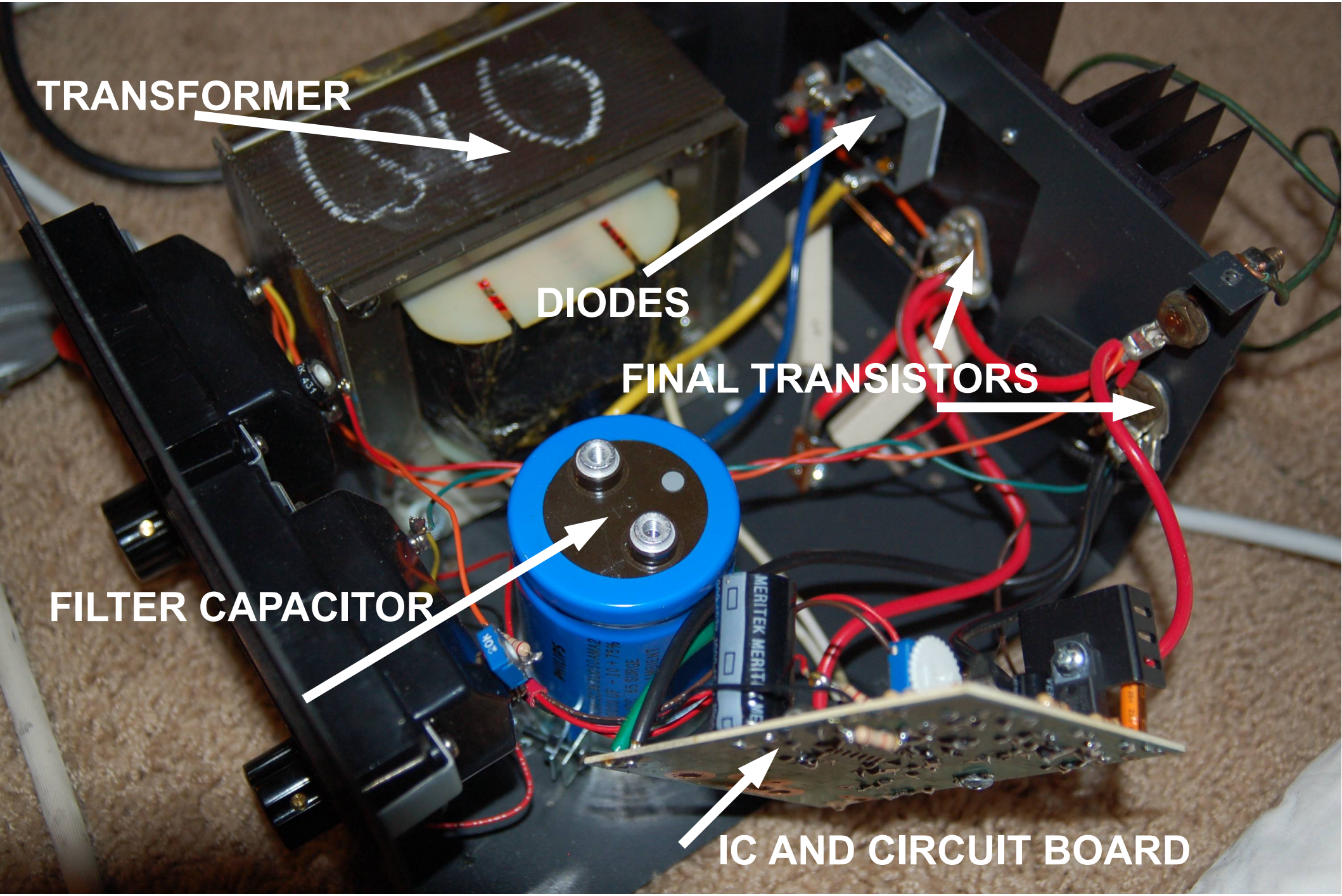


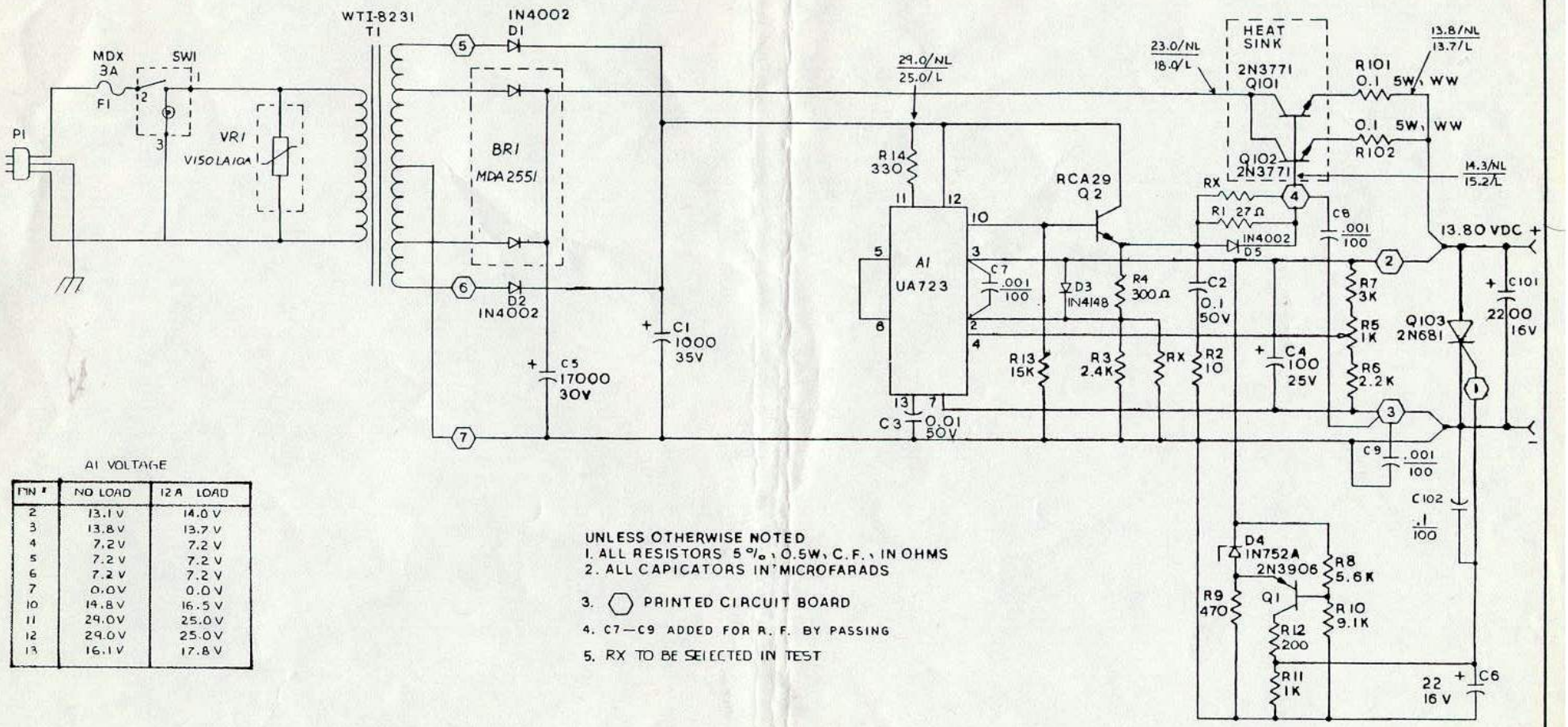

ASTRON
RS-20A


ON
OFF
ASTRON RS-35M
VOLTS
AMPS


0 5 10 15 20 25
ASTRON CORPORATION
AMPS
0 5 10 15
ASTRON CORPORATION
VOLTS
ON
OFF
ASTRON RS-20M


+
2N3771
8 AMP
60 HZ


TRANSFORMER
DIODES
FINAL TRANSISTORS
FILTER CAPACITOR
IC AND CIRCUIT BOARD



A1 VOLTAGE

PIN #	NO LOAD	12A LOAD
2	13.1V	14.0V
3	13.8V	13.7V
4	7.2V	7.2V
5	7.2V	7.2V
6	7.2V	7.2V
7	0.0V	0.0V
10	14.8V	16.5V
11	29.0V	25.0V
12	29.0V	25.0V
13	16.1V	17.8V

UNLESS OTHERWISE NOTED
1. ALL RESISTORS 5%, 0.5W, C.F., IN OHMS
2. ALL CAPICATORS IN MICROFARADS
3. ⬡ PRINTED CIRCUIT BOARD
4. C7—C9 ADDED FOR R. F. BY PASSING
5. RX TO BE SELECTED IN TEST

ASTRON CORPORATION
TUSTIN, CA.

SCALE:	APPROVED BY:	DRAWN BY
DATE: 11-2-83		REVISED

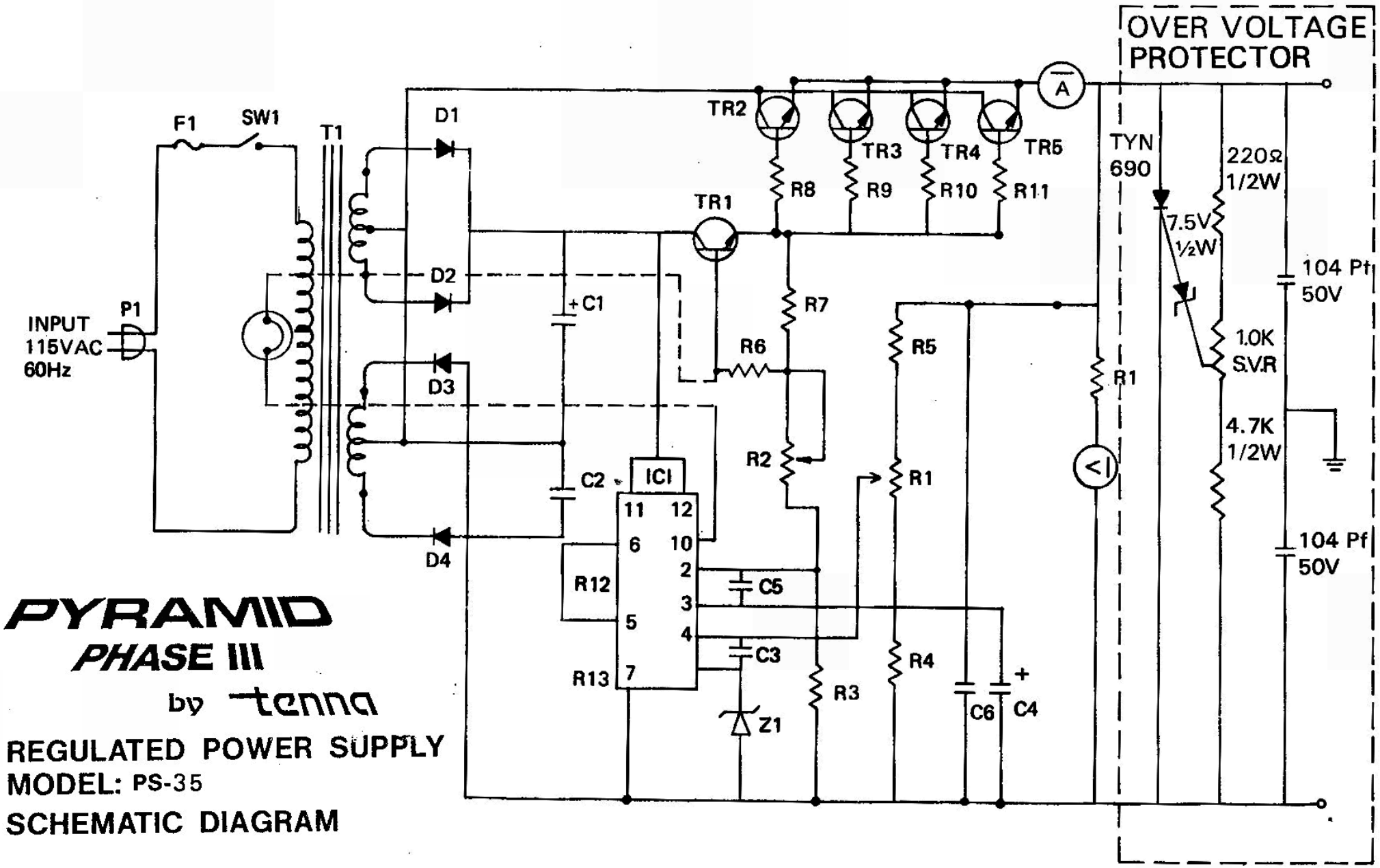
ELECTRICAL SCHEMATIC

RS-12A | DRAWING NUMBER


INPUT: 115V AC 60Hz 600W
OUTPUT: 13-15 VDC 35 AMP
BUILT IN COOLING FAN
THERMAL PROTECTION
OVER-LOAD PROTECTION
OVER-VOLTAGE PROTECTION
OVER-LOAD PRECAUTION DEVICES
MODEL: PS-36KX
AMPS
VOLTS
PYRAMID
REGULATED POWER SUPPLY
OUTPUT
DC
VOLTAGE ADJUST
PROTECTION
POWER
ON
OFF
(REFER TO OWNER'S MANUAL WHEN LIT)


FUSE
PYRAMID
MODEL PS-36KX
FUSE, 6AMP


PYRAMID®
PHASE III
• INPUT: 115V AC 60HZ
• OUTPUT: 4.5-15VDC
25AMP WITH SURGE
PROTECTION
• SHORT-CIRCUIT PROTECTION
DC CURRENT
DC VOLTAGE
ON OFF
OUTPUT
4.5-10V
10-15
USE 5A
FUSE
OUTPUT 4.5–15V 25A
+
—
LOW
HIGH
REGULATED POWER SUPPLY
MODEL: 25
KB8TAD

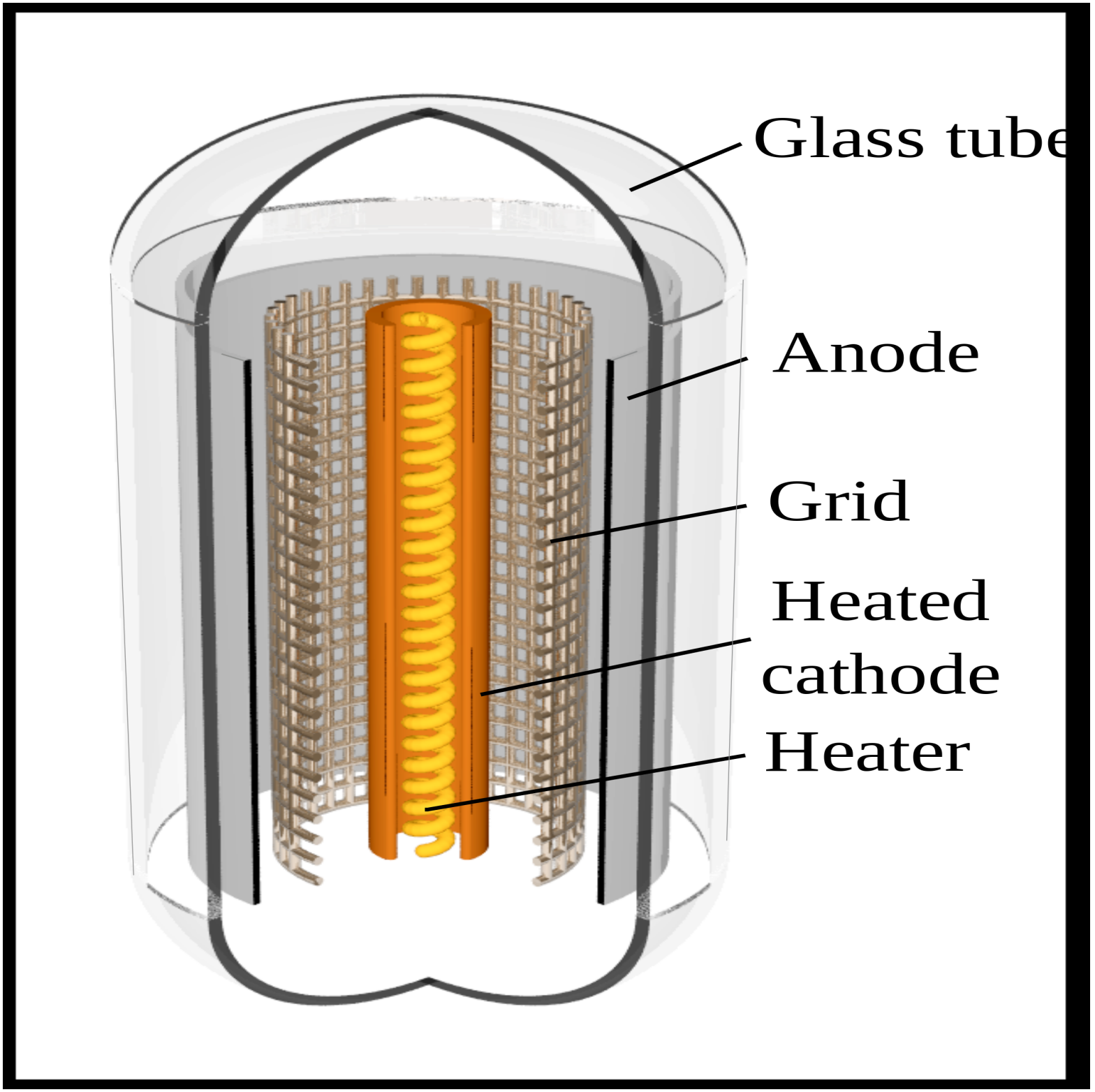


PYRAMID
PHASE III
by tenna

REGULATED POWER SUPPLY
MODEL: PS-35
SCHEMATIC DIAGRAM

Tube Power Supplies




Glass tube
Anode
Grid
Heated cathode
Heater

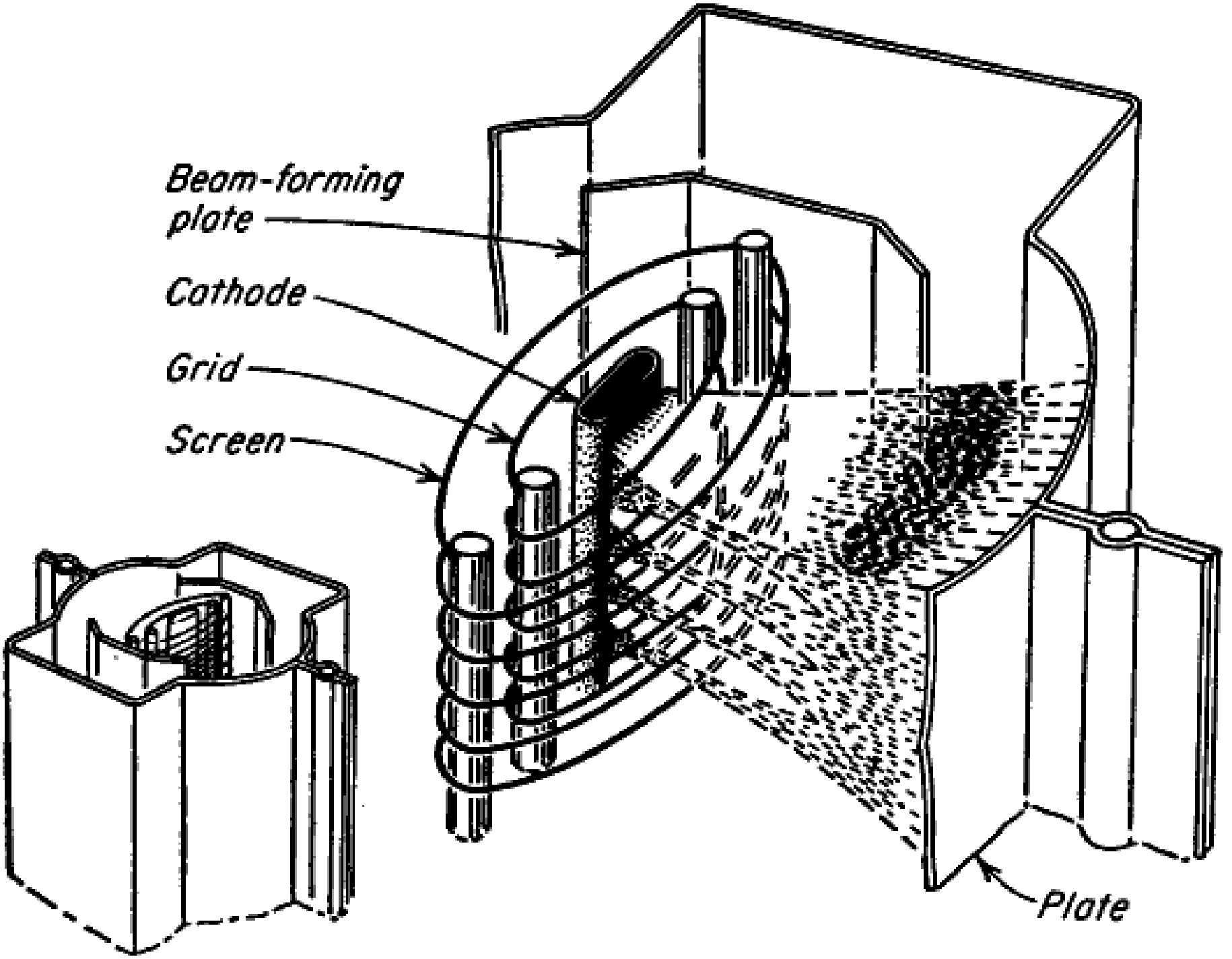
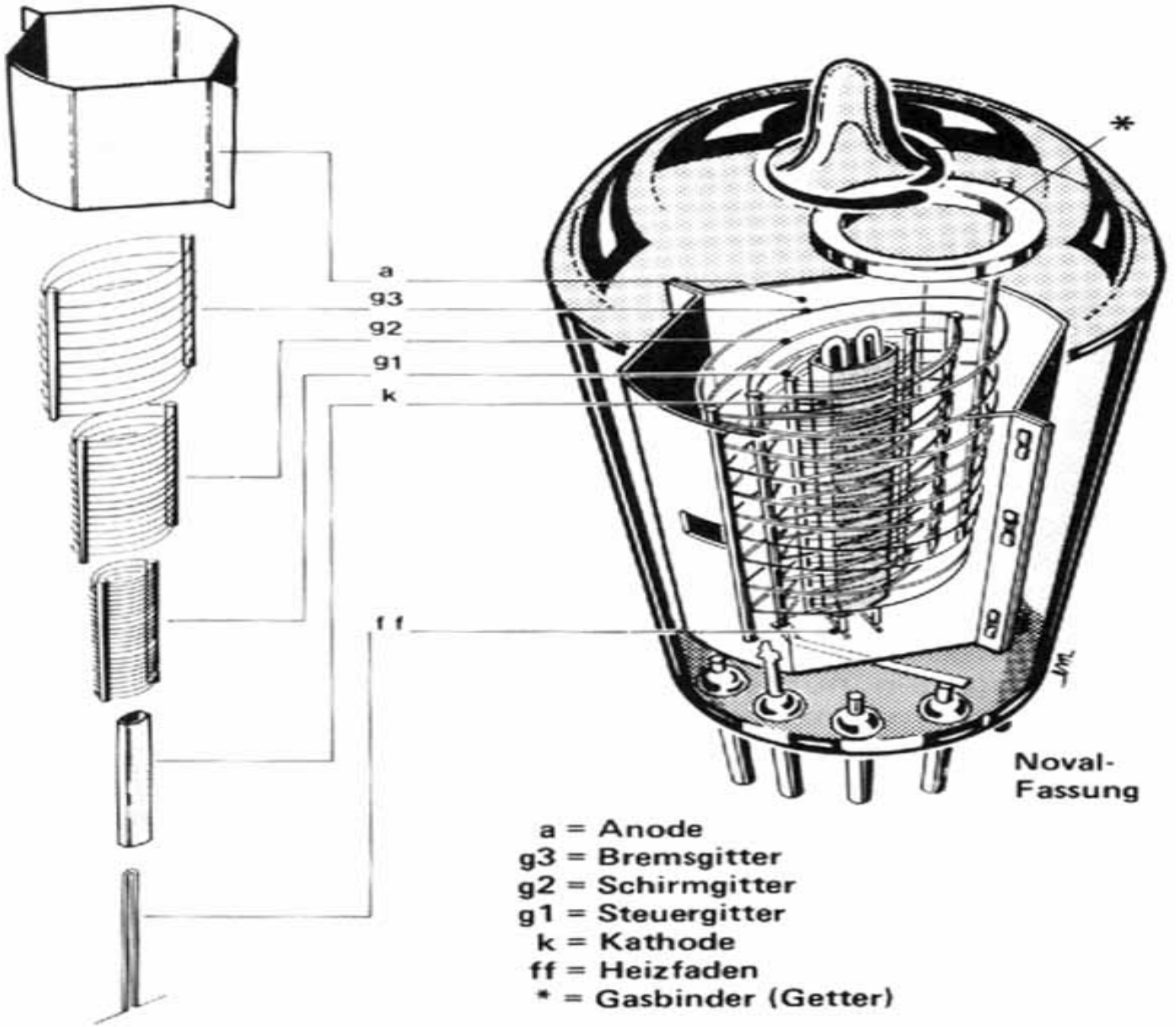
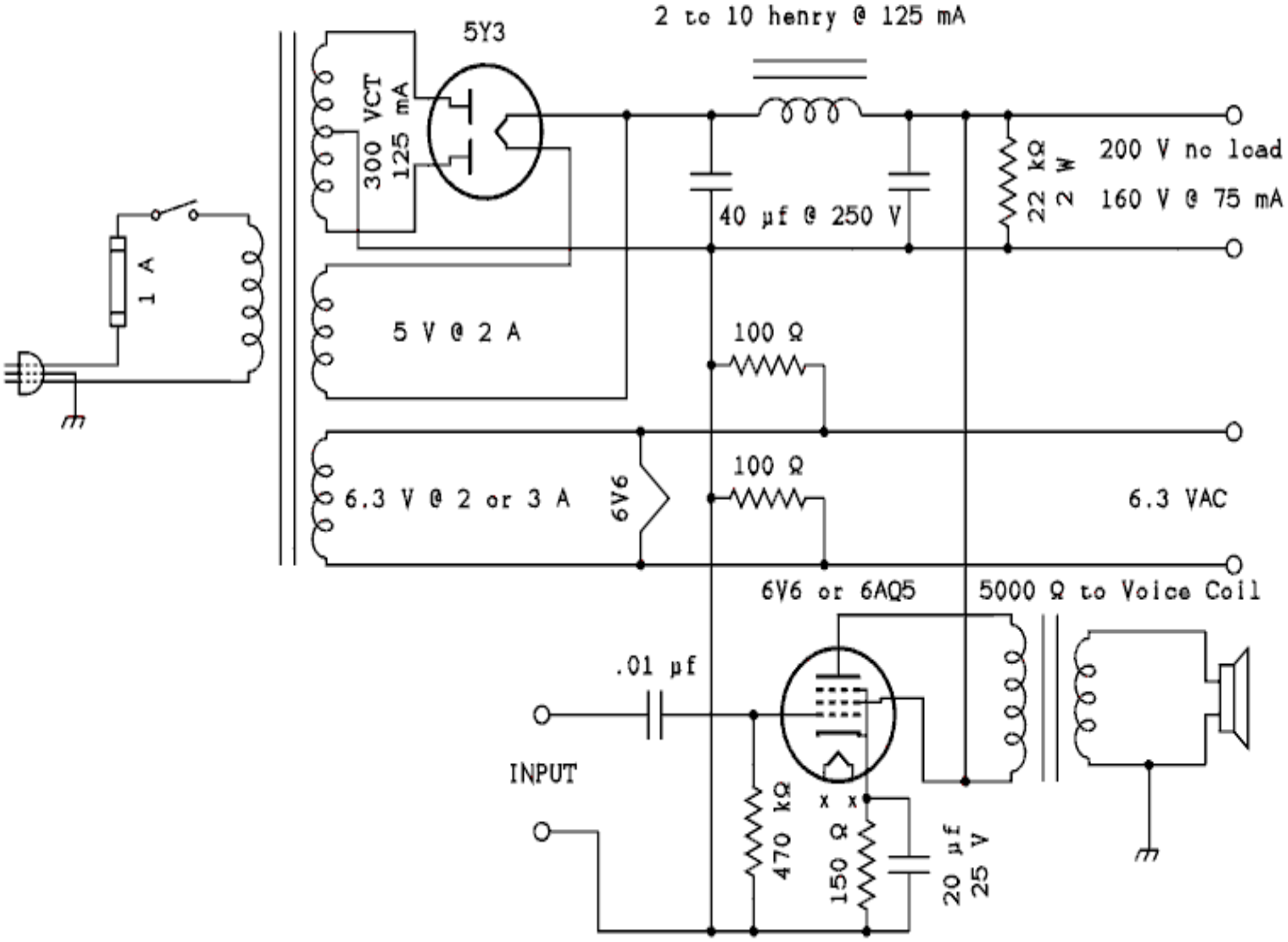


FIG. 10.22. Cutaway view of the 6L6 beam power tetrode. (*RCA.*)

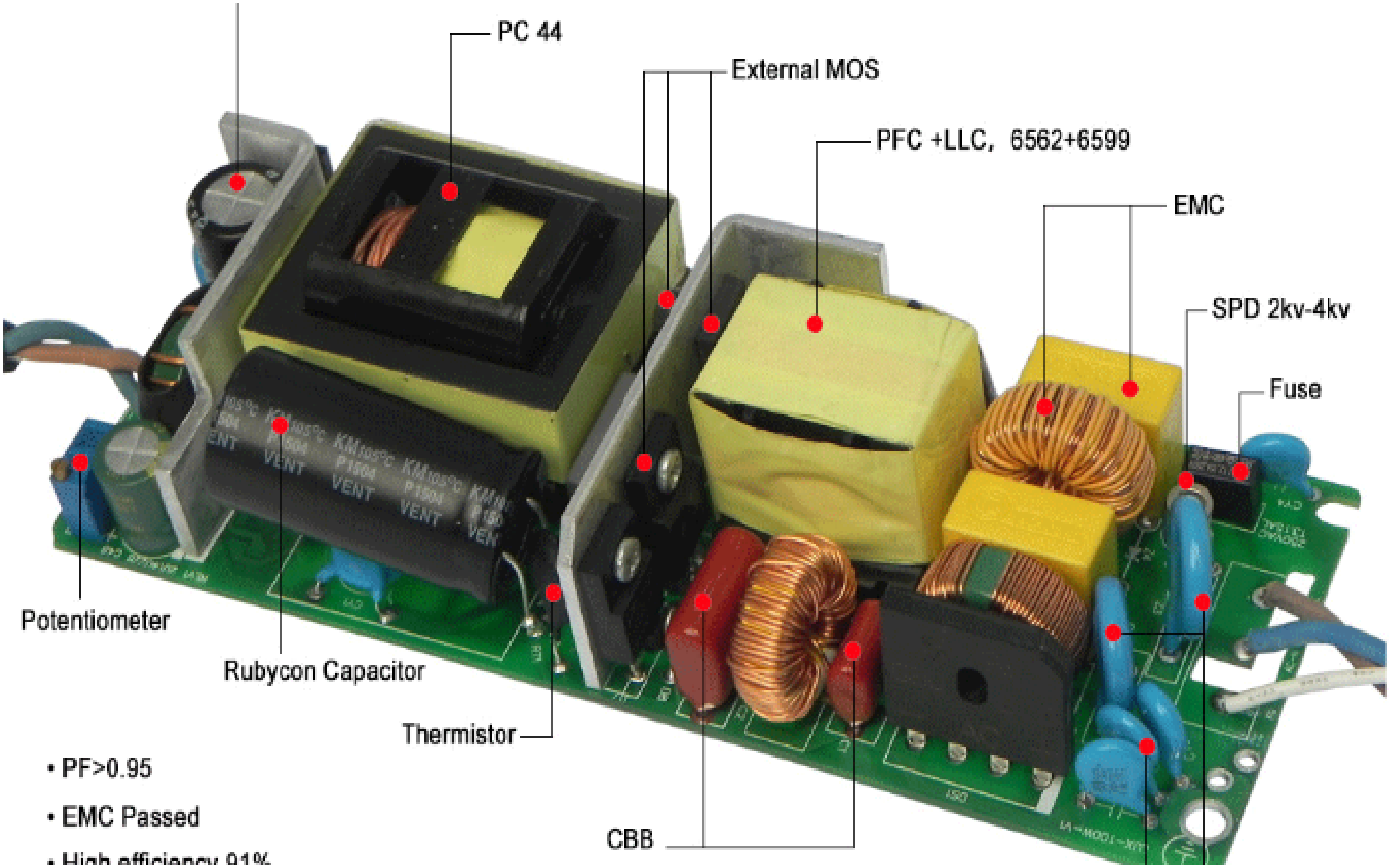


Schnittzeichnung vom Aufbau einer Pentode.


2 to 10 henry @ 125 mA
5Y3
300 VCT
125 mA
1 A
40 µf @ 250 V
22 kΩ
2 W
200 V no load
160 V @ 75 mA
5 V @ 2 A
100 Ω
6.3 V @ 2 or 3 A
6V6
100 Ω
6.3 VAC
6V6 or 6AQ5
5000 Ω to Voice Coil
.01 µf
INPUT
470 kΩ
150 Ω
20 µf
25 V


McIntosh 275
50th Anniversary

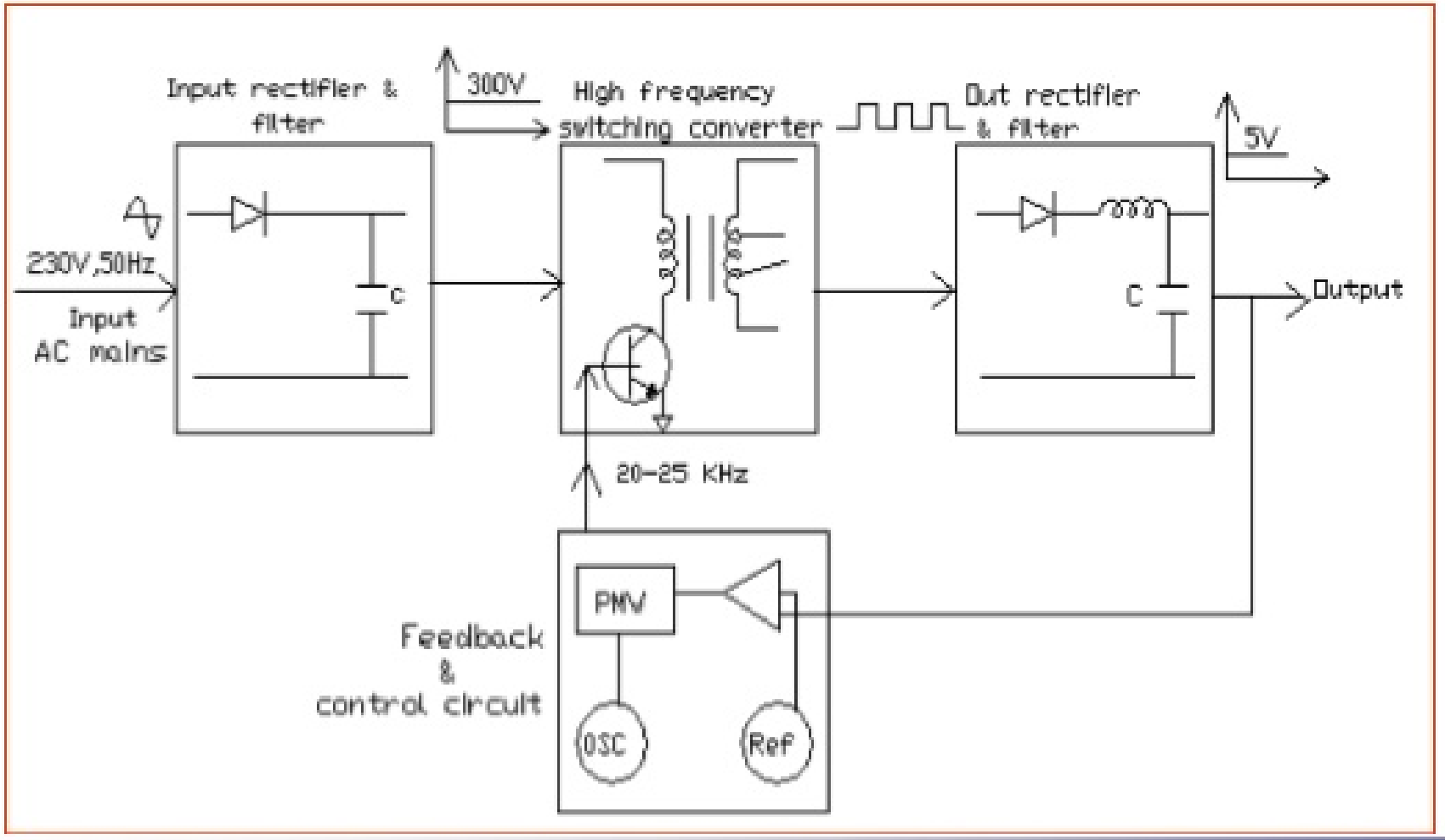
Switching DC Power Supplys



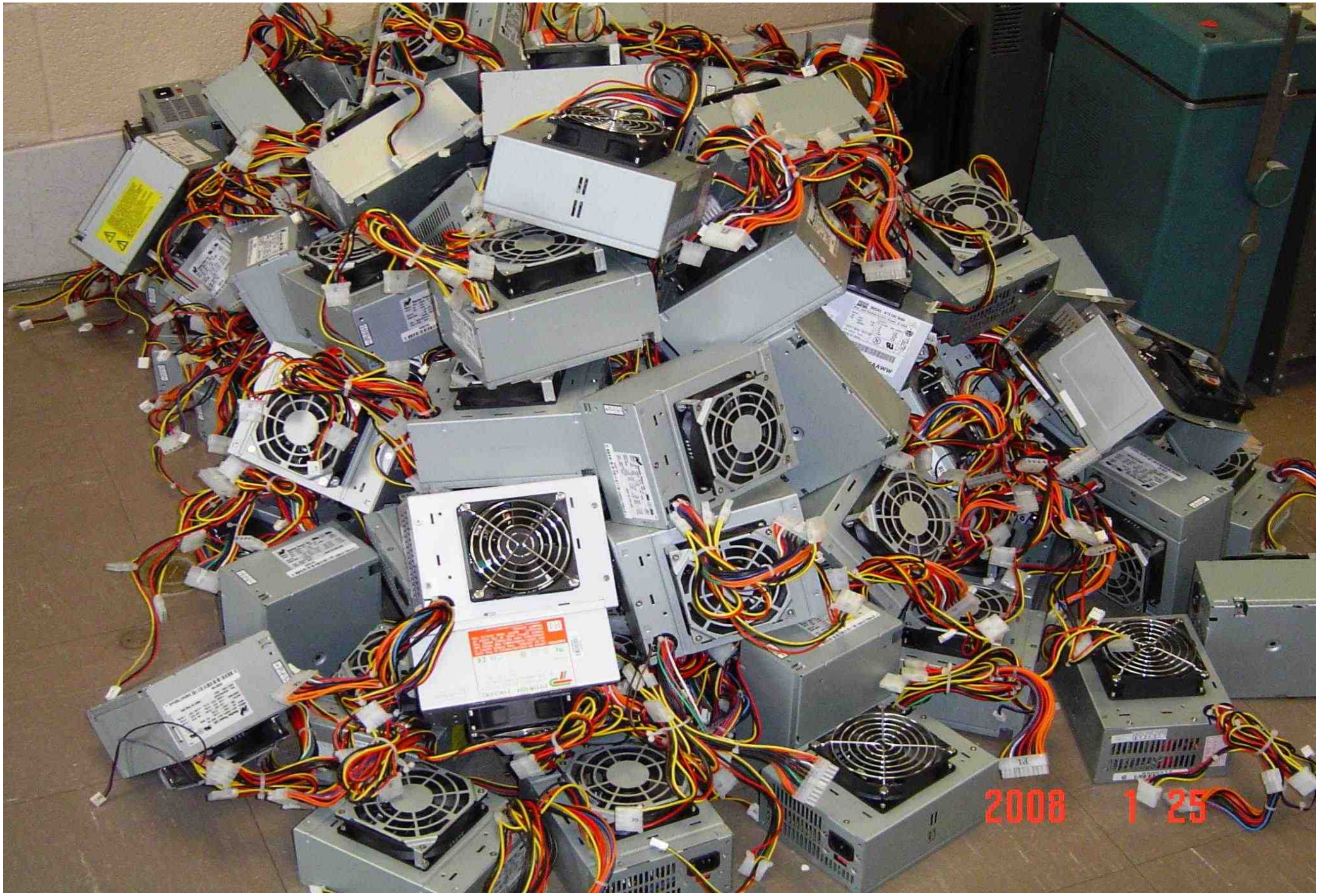
- PF>0.95
- EMC Passed
- High efficiency 91%

SMPS Block Diagram

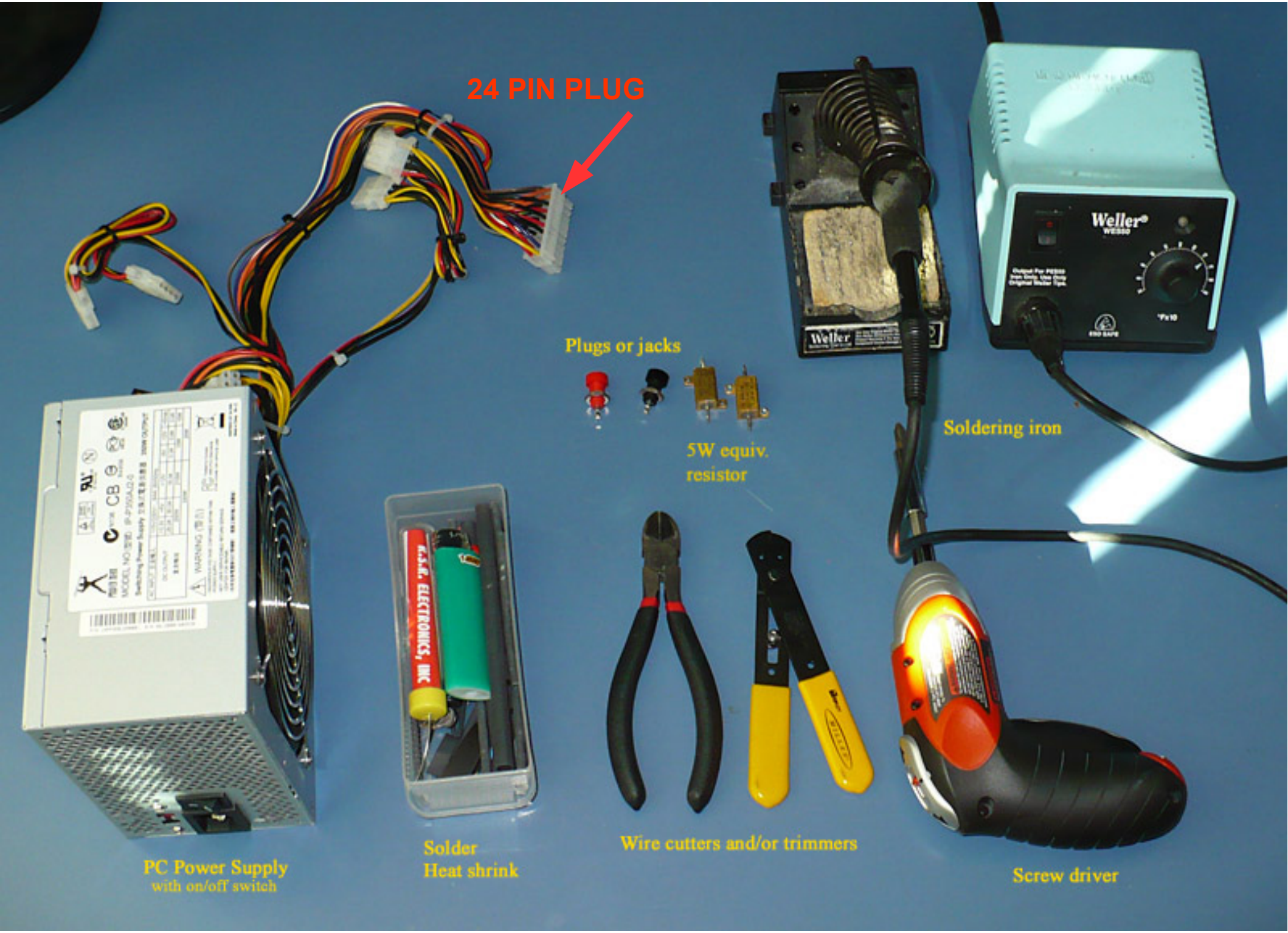
- **Functional Block Diagram of SMPS :**



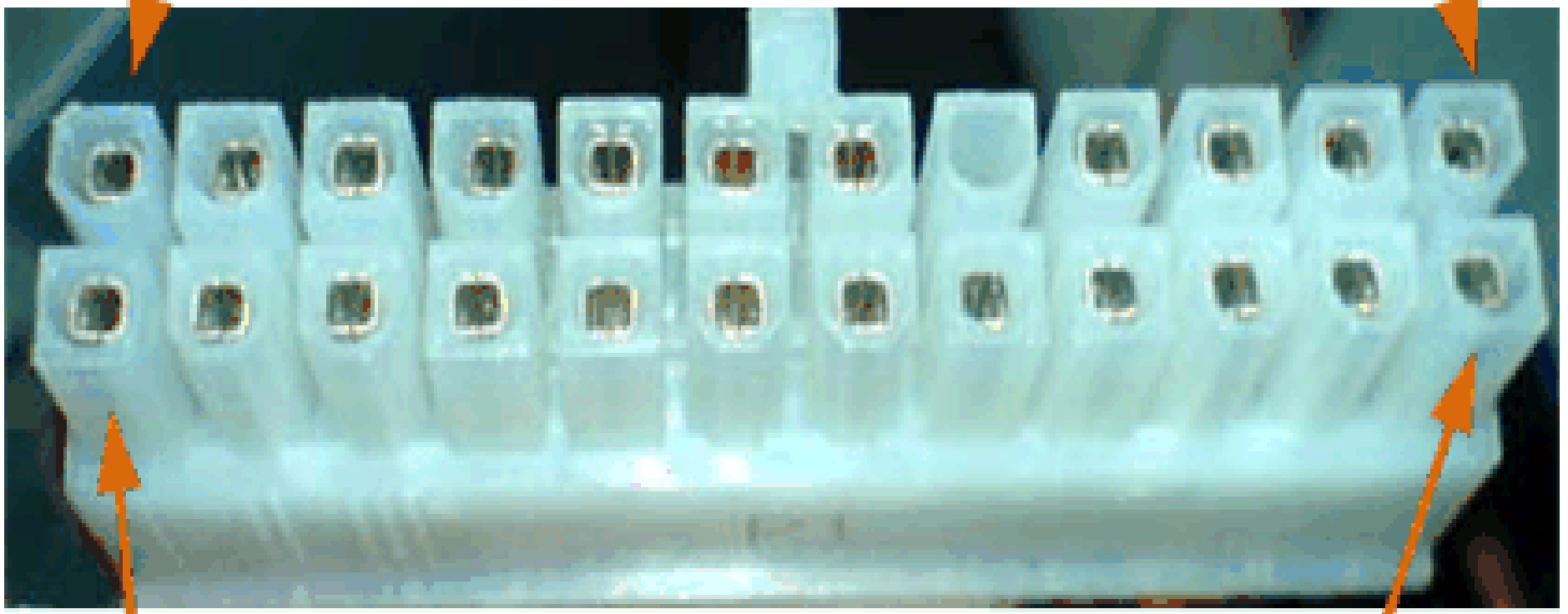
Converting a Computer Supply for HAM use.

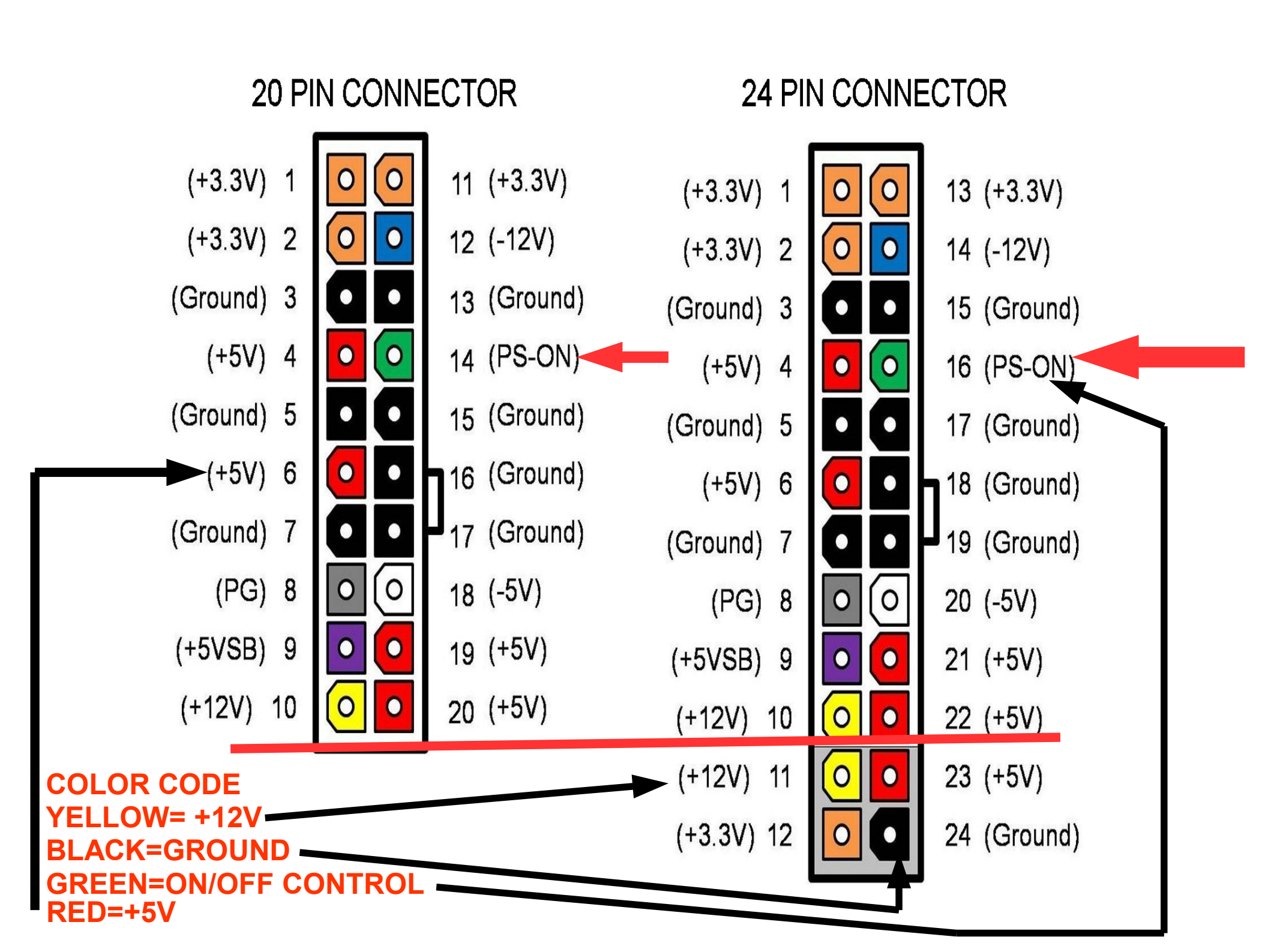



G
-12V
+12V
-5V
+5V
01/19/2003


24 PIN PLUG
Plugs or jacks
5W equiv.
resistor
Soldering iron
Weller
PC Power Supply
with on/off switch
Solder
Heat shrink
Wire cutters and/or trimmers
Screw driver

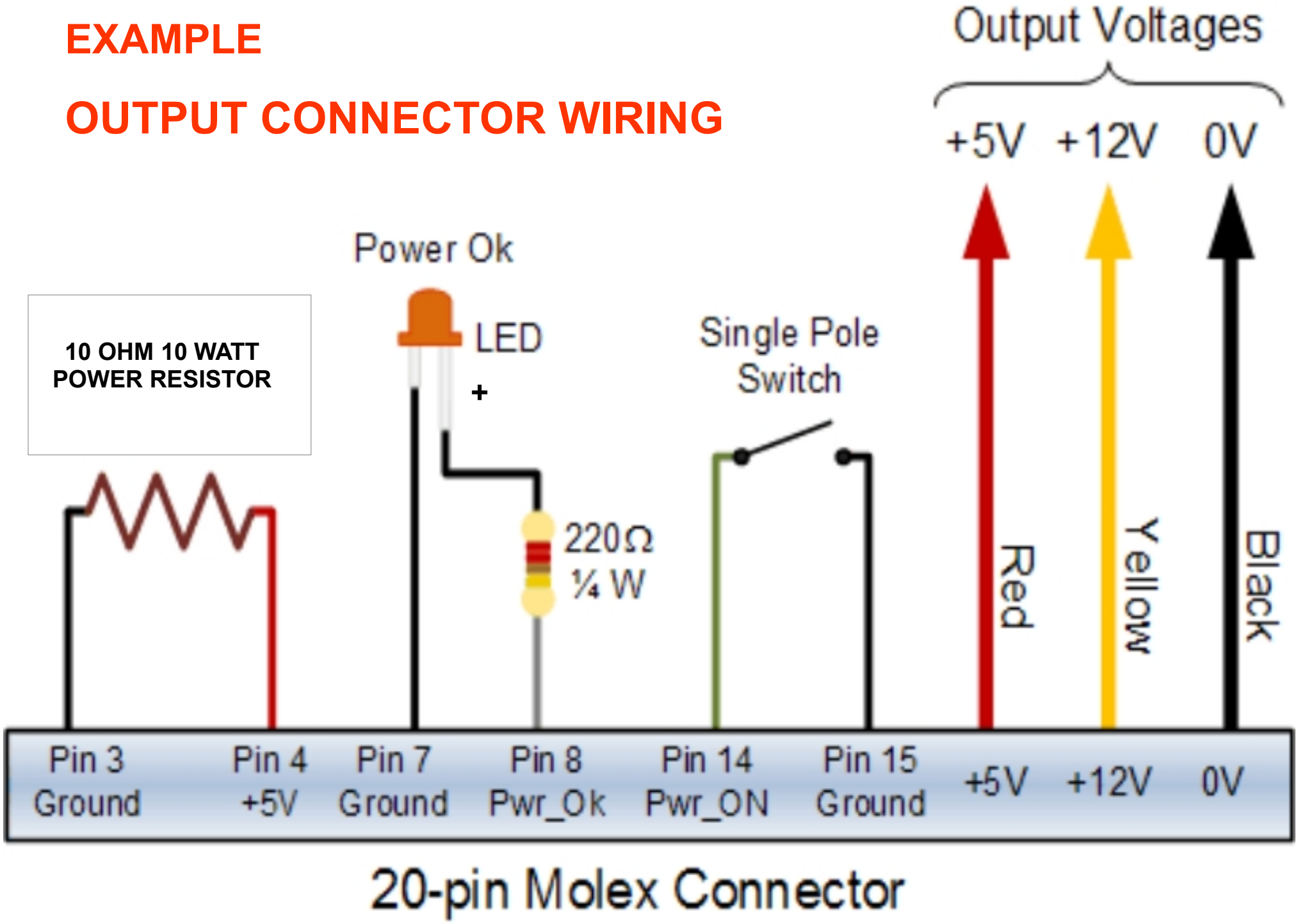
24-pin Molex Connector

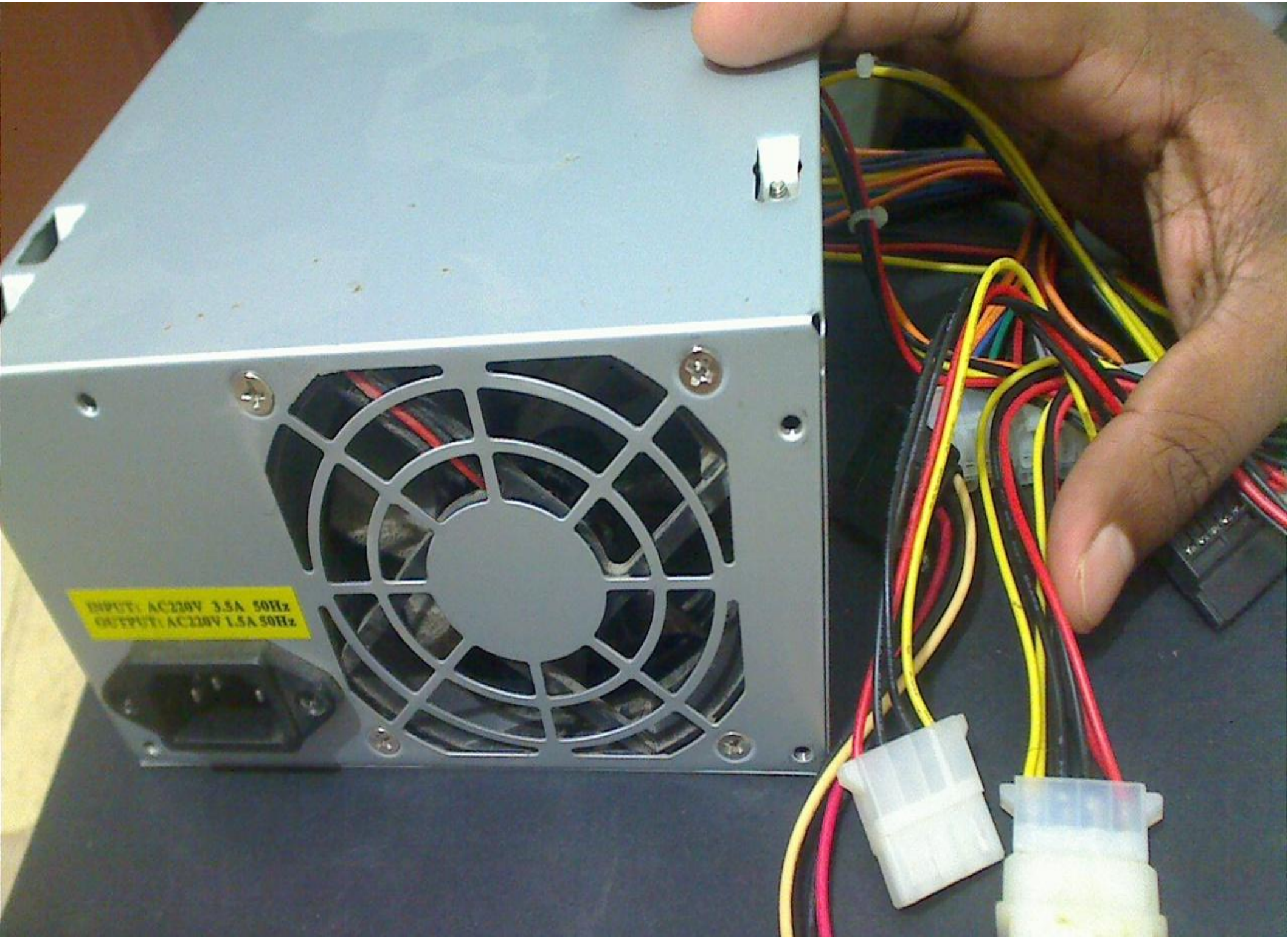



20 PIN CONNECTOR
24 PIN CONNECTOR
(+3.3V) 1
(+3.3V) 2
(Ground) 3
(+5V) 4
(Ground) 5
(+5V) 6
(Ground) 7
(PG) 8
(+5VSB) 9
(+12V) 10
11 (+3.3V)
12 (-12V)
13 (Ground)
14 (PS-ON)
15 (Ground)
16 (Ground)
17 (Ground)
18 (-5V)
19 (+5V)
20 (+5V)
(+3.3V) 1
(+3.3V) 2
(Ground) 3
(+5V) 4
(Ground) 5
(+5V) 6
(Ground) 7
(PG) 8
(+5VSB) 9
(+12V) 10
(+12V) 11
(+3.3V) 12
13 (+3.3V)
14 (-12V)
15 (Ground)
16 (PS-ON)
17 (Ground)
18 (Ground)
19 (Ground)
20 (-5V)
21 (+5V)
22 (+5V)
23 (+5V)
24 (Ground)
COLOR CODE
YELLOW= +12V
BLACK=GROUND
GREEN=ON/OFF CONTROL
RED=+5V

EXAMPLE

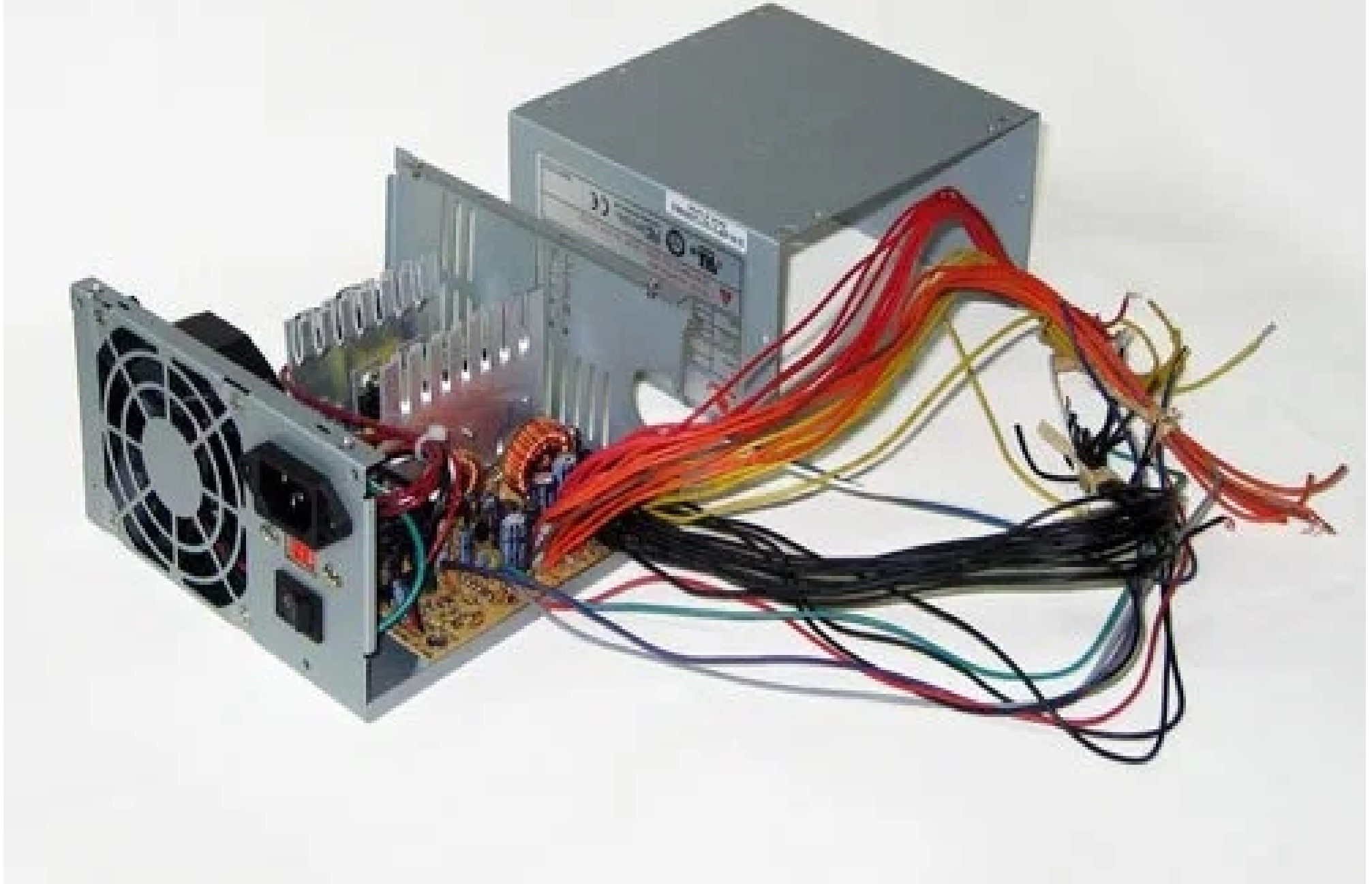
OUTPUT CONNECTOR WIRING



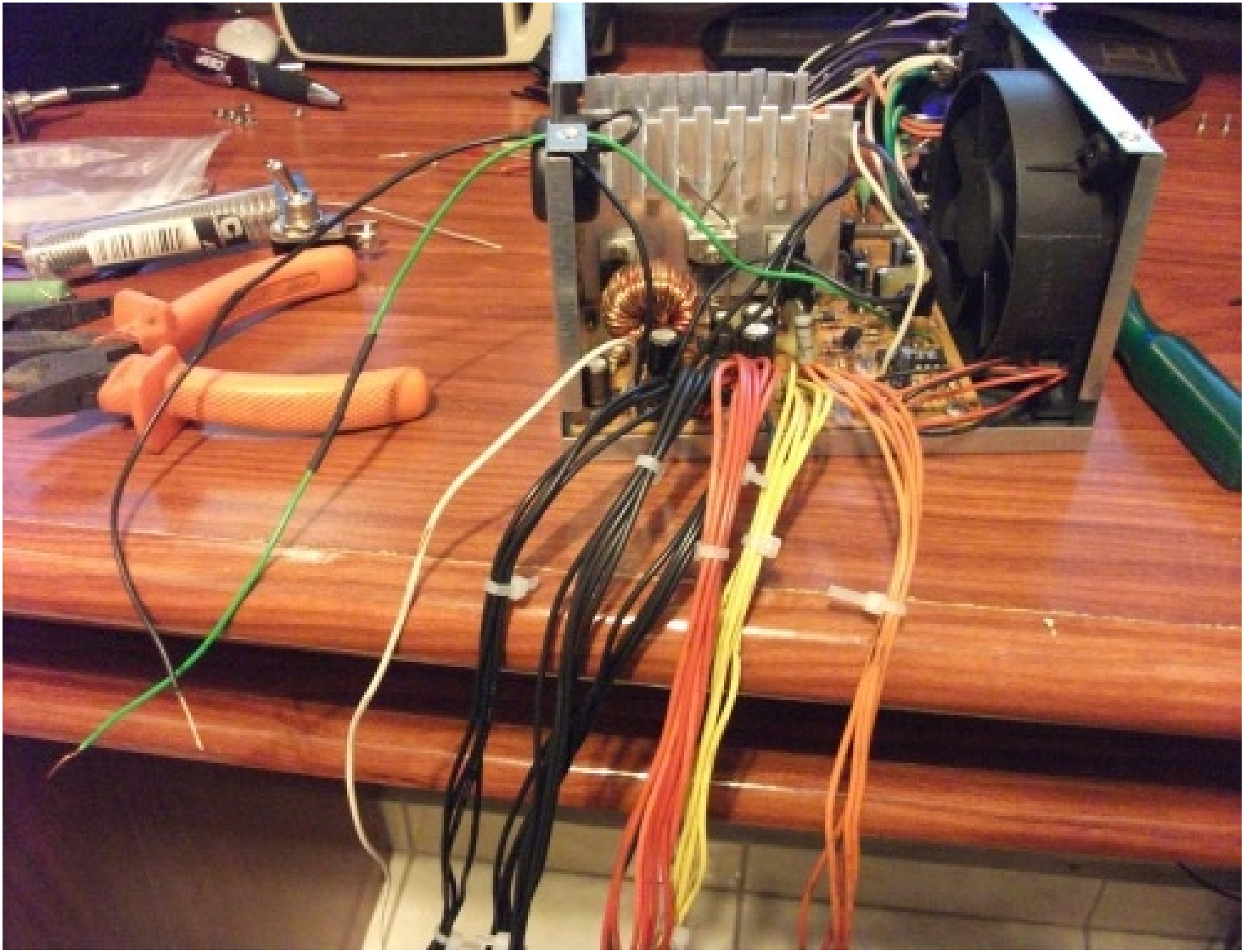

INPUT: AC220V 3.5A 50Hz
OUTPUT: AC220V 1.5A 50Hz

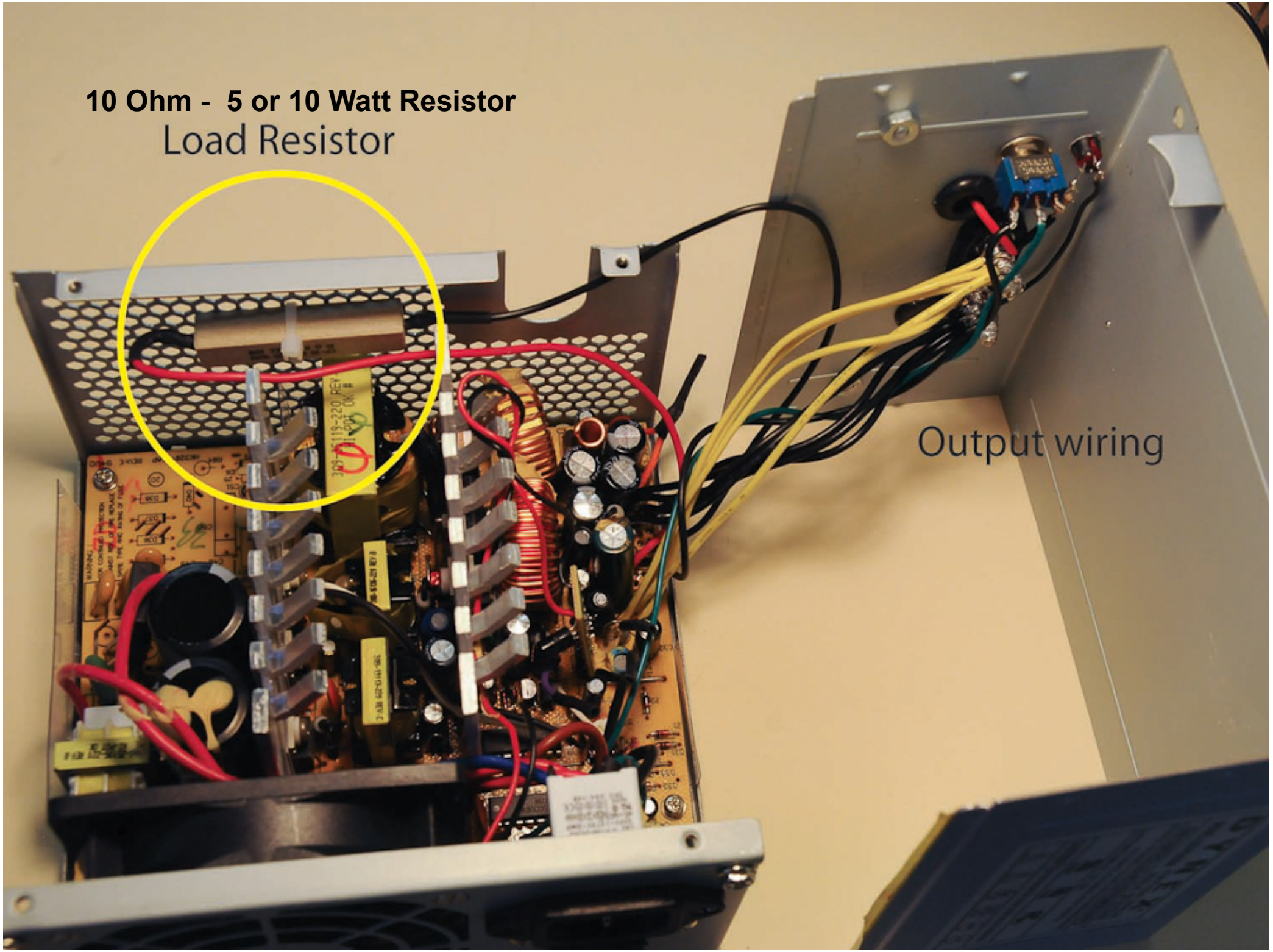
Black=Ground, Yellow=+12v, Red=+5v, Orange=+3.3v, Green to Black=On/Off

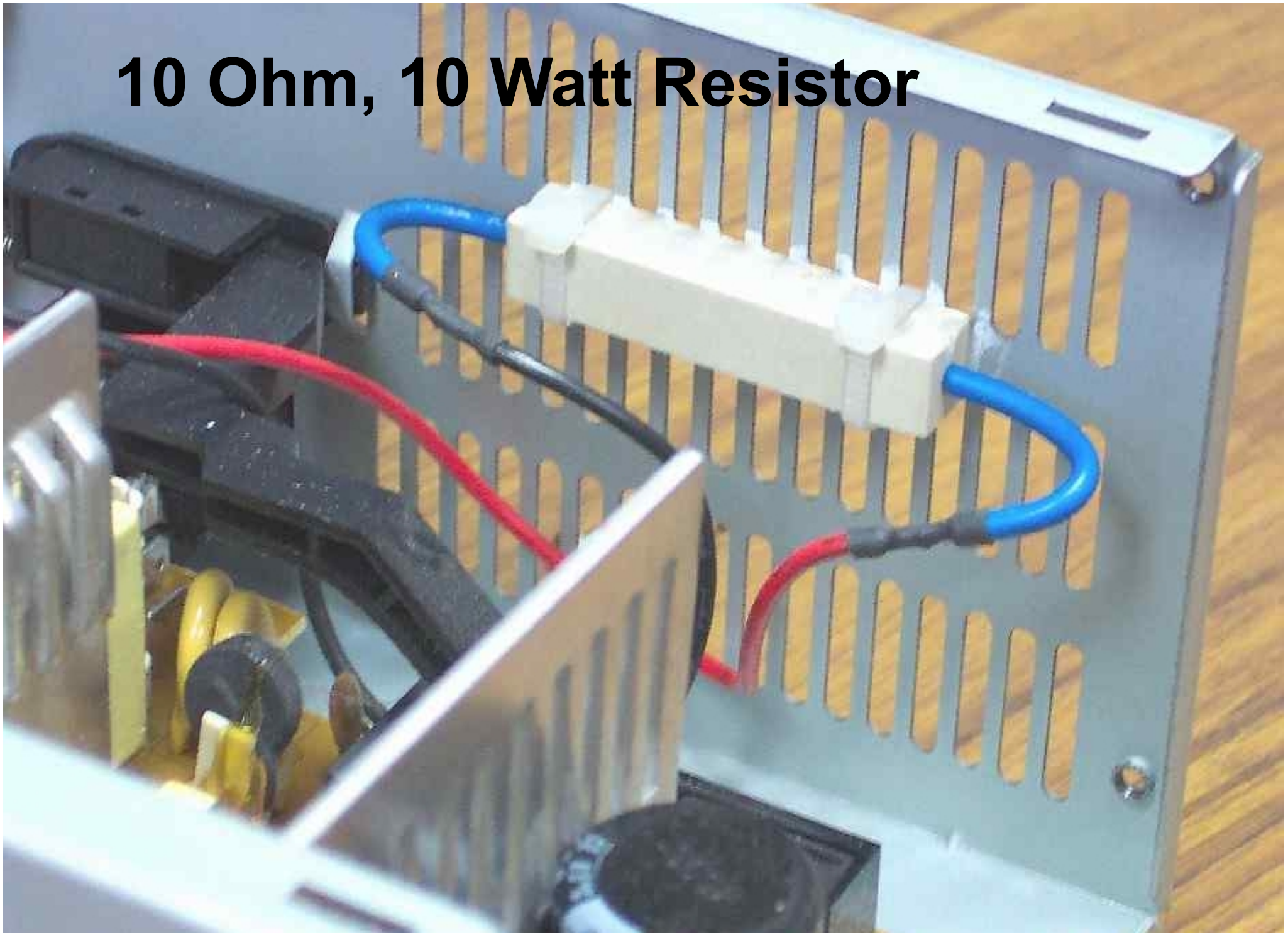
For HAM use, Black & Yellow=+12v Output, Green to Black is power On/Off Switch



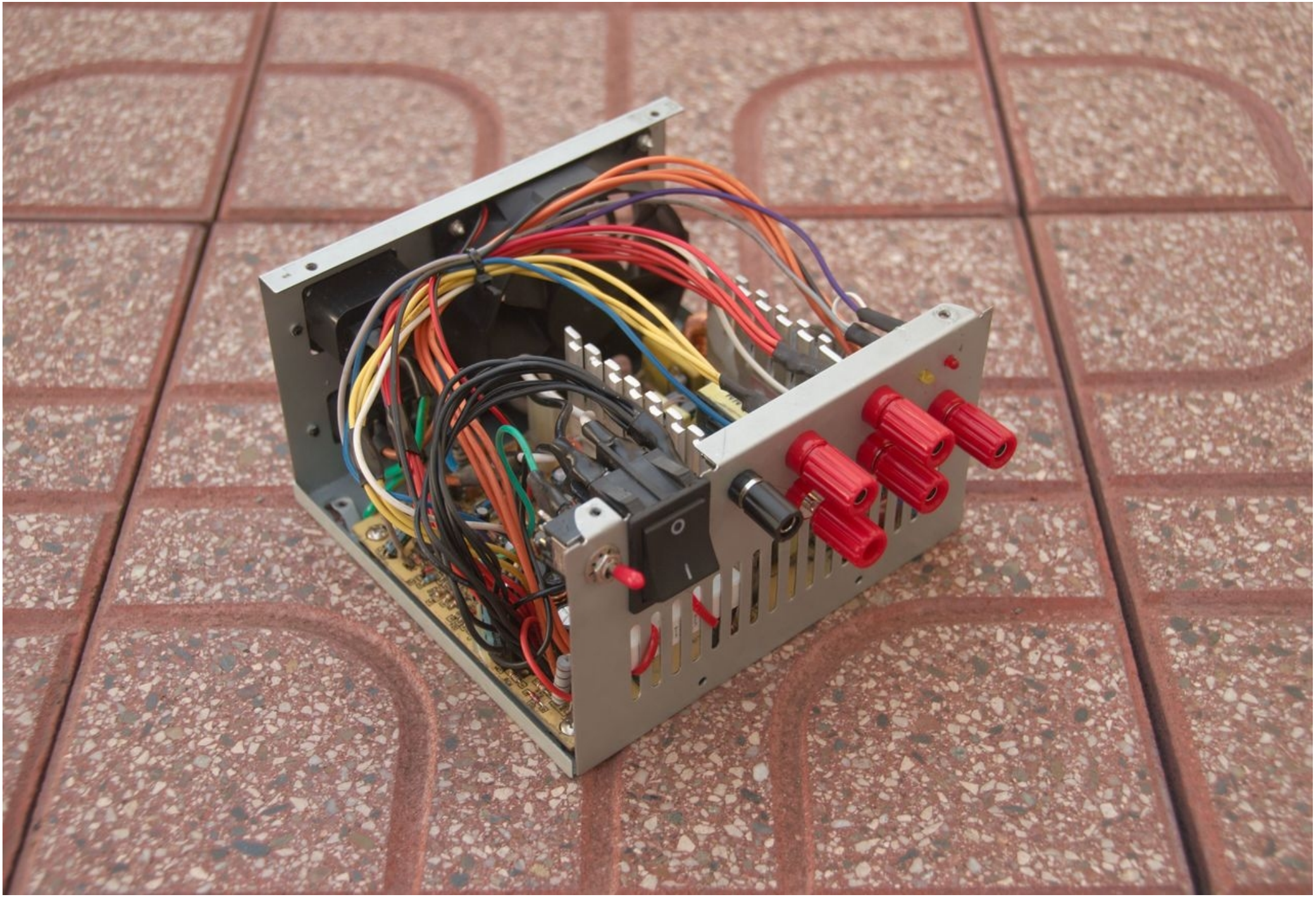





10 Ohm - 5 or 10 Watt Resistor
Load Resistor
Output wiring


10 Ohm, 10 Watt Resistor







22AMPS @ 12VOLTS





SPI Sparkle ATX-300PN 9PX3009713 300W Switching Power Supply

★★★★★ 1 product rating

Condition: **Used**

Quantity: 1 More than 10 available / 3 sold

Price: **US $16.00**

Buy It Now

Add to cart

♡ Add to Watchlist

☐ 2-year protection plan from SquareTrade - $2.99

Free shipping	30-day returns	Ships from United States

Shipping: FREE Economy Shipping | See details
Item location: Houston, Texas, United States
Ships to: United States See exclusions

Delivery: Estimated on or before **Wed. May. 27** to 95688

Payments: PayPal VISA MasterCard AMEX DISCOVER

PayPal CREDIT
Special financing available. Apply Now | See terms

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Shop with confidence

eBay Money Back Guarantee
Get the item you ordered or get your money back. Learn more

Seller information
juluplus (28080 ★)
97.5% Positive feedback

♡ Save this Seller
Contact seller
Visit store
See other items


SPI
SPARKLE POWER INT'L LT
SWITCHING POWER SUPPLY.
E190414
188668
LEVEL 3
TÜV Rheinland Product Safety
BAUART GEPRÜFT
TYPE APPROVED
CB
MODEL NO.: ATX-300PN
C INPUT:110-120/220-240V~,7/4A,60/50Hz
C OUTPUT: 300W
+3.3V 20.0A(ORG),+5V 20.0A(RED),+12V1 16.0A(YEL)
+12V2 16.0A(YEL/BLACK),+5Vsb 2.5A(PURP),-12V 0.8A(
P.G. SIGNAL (GRAY),GROUND (BLACK)
(+3.3V & +5V=120W Max)(+12V1 & +12V2=264W Max)
CAUTION! HAZARDOUS AREA
22 AMPS
SAFETY INSTRUCTIONS:
DO NOT REMOVE THE COVER
NO SERVICEABLE COMPONENTS INSIDE
FC

56 AMPS @ 12V





Lot of 2 HP 411076-001 393527-001 DL360 G5 700W Power Supply DPS-700GB A

Condition: **Used**

"*Great Condition Fully Tested!*"

Price: **US $17.95**

Buy It Now

Add to cart

♡ Add to Watchlist

Free shipping | 30-day returns | Ships from United States

Shipping: FREE Standard Shipping | See details

Item location: Idaho Falls, Idaho, United States

Ships to: United States and many other countries | See details

Delivery: Estimated on or before **Tue. May. 26** to 95688

Payments: PayPal VISA MasterCard American Express Discover

PayPal CREDIT

Special financing available. Apply Now | See terms

Earn up to 5x points when you use your eBay Mastercard. Learn more

Returns: 30 day returns. Buyer pays for return shipping | See details

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eBay Money Back Guarantee

Get the item you ordered or get your money back. Learn more

Seller information

shms208 (1334 ★)

100% Positive feedback

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Contact seller

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See other items



74 AMPS @ 12VOLTS





HP Cisco 1300W Server Power Supply 337867-501 406421-001 74-5217-01

Condition: **Used**

"Used, cleaned and tested and comes w/ a 30-Day Warranty!"

Quantity: 1 — 8 available

Price: **US $19.95**

Buy It Now

Add to cart

♡ Add to Watchlist

Free shipping and returns | Ships from United States

Shipping: FREE Economy Shipping | See details
Item location: Urbandale, Iowa, United States
Ships to: United States and many other countries | See details

Delivery: Estimated on or before **Tue. May. 26** to 95688

Payments: PayPal, VISA, MasterCard, American Express, Discover

PayPal CREDIT
Special financing available. Apply Now | See terms

Earn up to 5x points when you use your eBay Mastercard. Learn more

Returns: Free 30 day returns | See details

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Top Rated Plus
Trusted seller, fast shipping, and easy returns. Learn more

eBay Money Back Guarantee
Get the item you ordered or get your money back. Learn more

Seller information

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100% Positive feedback

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Contact seller
Visit store
See other items





4pcs Speaker Amplifier Terminal Binding Post Dual 2 ways Banana Plug Jack

4.5 stars 5 product ratings

Condition: **New**

Quantity: 1 More than 10 lots available (4 items per lot) / 638 sold

Price: **US $7.20**

Buy It Now

Add to cart

♡ Add to Watchlist

100% buyer satisfaction	638 sold	More than 96% sold

Shipping: **$1.54** Standard Shipping | See details
Item location: College Point, New York, United States
Ships to: Worldwide See exclusions

Delivery: Estimated between **Sat. May. 23 and Tue. May. 26**
Use Expedited Shipping to get it by May. 21

Payments: PayPal VISA MasterCard American Express Discover

PayPal CREDIT
Special financing available. Apply Now | See terms

Earn up to 5x points when you use your eBay Mastercard. Learn more

Returns: 30 day returns. Buyer pays for return shipping | See details

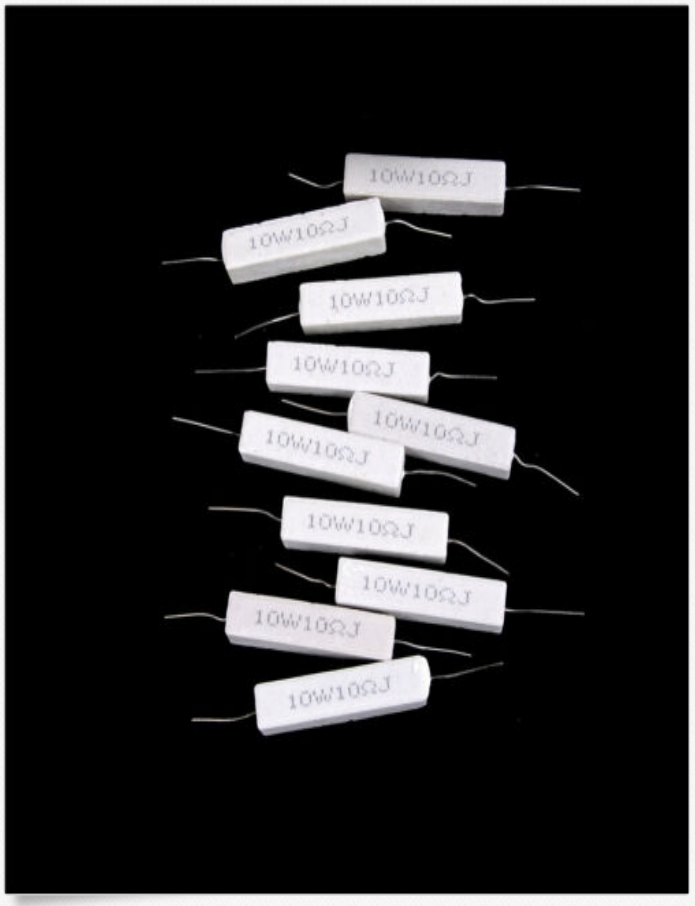
Shop with confidence

eBay Money Back Guarantee
Get the item you ordered or get your money back. Learn more

Seller information
nyciti2 (168065 ★)
99% Positive feedback

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Visit store
See other items

10-OHM, 10 WATT POWER RESISTOR





10pcs 10W 10 ohm 10R Resistance Ceramic Cement Resistor 5% DIY KitOV

Condition: New

Sale ends in: 03d 05h 35m

Quantity: 1 Last one / 1 sold

Was: ~~C $7.84~~

You save: C $0.39 (5% off)

Price: **C $7.45**
Approximately US $5.29

Buy It Now

Add to cart

♡ Add to Watchlist

More than 49% sold | Last item available | Free shipping

Shipping: FREE Economy Int'l Shipping | See details
International shipment of items may be subject to customs processing and additional charges.
Item location: Shanghai, China
Ships to: Canada, Europe, Asia, United States, Australia See exclusions

Delivery: Estimated between Wed. Jun. 10 and Tue. Aug. 4
This item has an extended handling time and a delivery estimate greater than 14 business days.
Please allow additional time if international delivery is subject to customs processing.

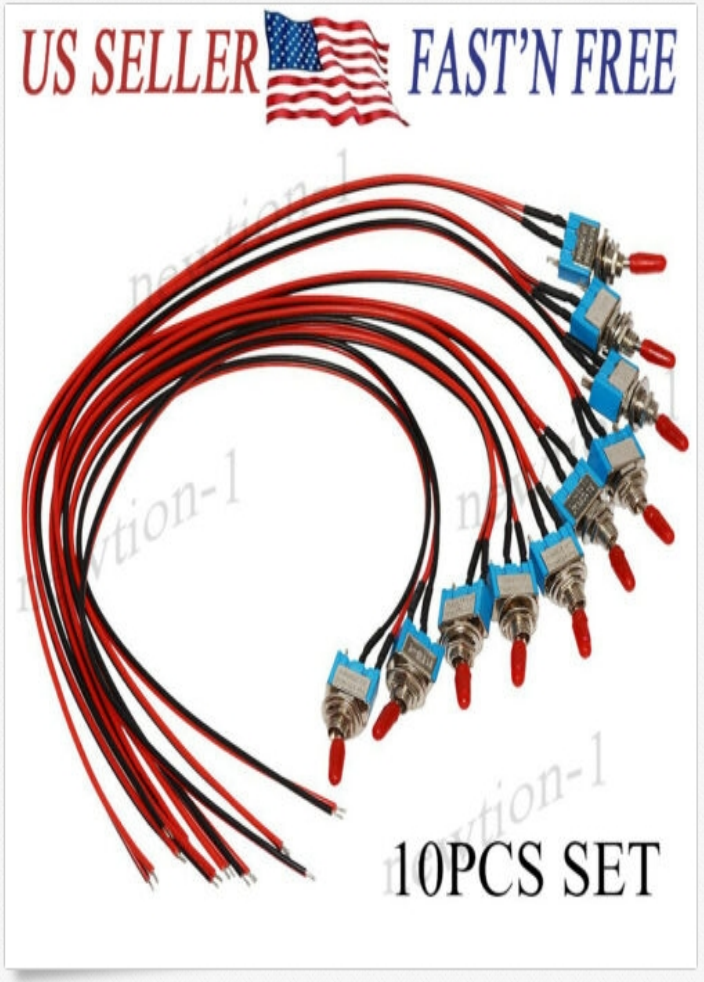
Payments: PayPal VISA MasterCard American Express Discover

Shop with confidence

eBay Money Back Guarantee
Get the item you ordered or get your money back. Learn more

Seller information
jinouvss (5)
100% Positive feedback

♡ Save this Seller
Contact seller
Visit store
See other items





10PCS SPST Mini Toggle Switch Wires On/Off Metal Small Automotive/Boat/Car/Truck

Condition: New

Quantity: 1 More than 10 available / 509 sold

Price: **US $10.99**

Buy It Now

Add to cart

♡ Add to Watchlist

100% buyer satisfaction	509 sold	Free shipping and returns

Shipping: FREE Economy Shipping | See details
Item location: Fairfield, New Jersey, United States
Ships to: United States See exclusions

Delivery: Estimated between **Fri. May. 22** and **Tue. May. 26** to 95688

Payments: PayPal VISA MasterCard American Express Discover

PayPal CREDIT
Special financing available. Apply Now | See terms

Earn up to 5x points when you use your eBay Mastercard. Learn more

Returns: Free 30 day returns | See details

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Seller information

aluedled (60358 ★)
99.4% Positive feedback

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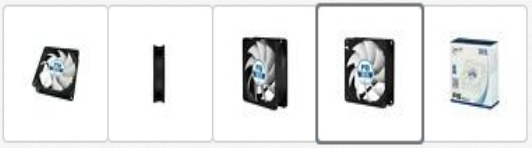
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Back to search results | Listed in category: Computers/Tablets & Networking > Computer Components & Parts > Fans, Heat Sinks & Cooling > Computer Case Fans > See more Arctic F8 Silent 80 Mm 3pin Fan With Standard ...

| Add to Watchlist

80mm 12V FAN





ARCTIC COOLING F8 Silent 80mm Case Fan

★★★★★ 7 product ratings

Condition: New

Quantity: 1 — 10 available
56 sold / See feedback

List price: ~~$8.87~~

You save: $0.91 (10% off)

Now: **US $7.96**

Buy It Now

Add to cart

♡ Add to Watchlist

☐ 2-year protection plan from SquareTrade - $1.99

100% buyer satisfaction	Free delivery in 3 days	56 sold

Shipping: FAST 'N FREE
Guaranteed by Fri. May. 22 | See details
Item location: Henderson, Nevada, United States
Ships to: United States See exclusions

Payments: PayPal VISA MasterCard American Express Discover

PayPal CREDIT

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Seller information
outletpc (64403 ★)
99.2% Positive feedback

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SAVE UP TO 10% WHEN YOU BUY MORE



10 PCS 80mm Chrome Metal Computer PC Fan Grill Mounting Finger Guard Protection

★★★★★ 13 product ratings

Condition: **New**

Bulk savings: Buy 1 **$7.65/ea** | Buy 2 **$7.27/ea**

Quantity: 1 **3 or more for $6.89/ea**

25 lots available (10 items per lot)
275 sold / See feedback

Unit price: **US $7.65/ea**

Buy It Now

Add to cart

♡ Add to Watchlist

☐ 2-year protection plan from SquareTrade - $1.99

100% buyer satisfaction	275 sold	More than 91% sold

Shipping: FREE Standard Shipping | See details
Item location: City of Industry, California, United States

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Seller information
ciscopartsonline (8864 ★)
99.8% Positive feedback

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$ Have one to sell? Sell now

SAVE UP TO 10% WHEN YOU BUY MORE





10pair Marine Connector Plug & Contacts Power pole Terminals 30A 600V

Condition: **New**

Bulk savings:

Buy 1	Buy 2	Buy 3
$9.65/ea	$9.26/ea	$8.97/ea

Quantity: 1 **4 or more for $8.69/ea**

10 available

Unit price: **US $9.65/ea**

Buy It Now

Add to cart

♡ Add to Watchlist

Free shipping	30-day returns	Ships from United States

Shipping: **FREE** Standard Shipping | See details
Item location: Los Angeles, California, United States
Ships to: United States See exclusions

Delivery: Estimated between **Thu. Jun. 4 and Fri. Jun. 5**

Shop with confidence

eBay Money Back Guarantee
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Seller information
si-7360 (6753 ★)
97.8% Positive feedback

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15 AMP POWER CORD





5ft 16ga Computer Monitor Power Cord Cable PC Printer IEC320 C13 15A Heavy Duty

Be the first to write a review.

Condition: **New**

Quantity: 1 More than 10 available / 5 sold

Price: **US $4.49**

Buy It Now

Add to cart

♡ Add to Watchlist

☐ 2-year protection plan from SquareTrade - $1.99

Same day shipping | Ships from United States

Shipping: $5.65 Standard Shipping | See details
Item location: Stilwell, Kansas, United States
Ships to: United States See exclusions

Delivery: Estimated on or before **Fri. May. 22** to 95688

Payments: PayPal VISA MasterCard American Express Discover

PayPal CREDIT
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Seller information
mwscale (9244 ★)
99.4% Positive feedback

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EXTERNAL IN-LINE VOLT-AMP METER





With Special Heavy Ga Wire 150 Amp Watt Meter Black 0-60 (V) Solar DC Hot

Condition: New

Quantity: 1 Last one / 8 sold

Price: C $12.93
Approximately US $9.19

Buy It Now

Add to cart

♡ Add to Watchlist

More than 88% sold | Free shipping | Last item available

Shipping: FREE Economy Int'l Shipping | See details
International shipment of items may be subject to customs processing and additional charges.
Item location: HongKong, China
Ships to: Worldwide See exclusions

Delivery: Estimated between Wed. Jun. 10 and Tue. Aug. 4
This item has an extended handling time and a delivery estimate greater than 14 business days.
Please allow additional time if international delivery is subject to customs processing.

Payments: PayPal VISA MasterCard AMEX DISCOVER

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Returns: 30 days, buyer pays return shipping | See details

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Seller information
luckystar520 (133802 ★)
97.9% Positive feedback

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Back to search results | Listed in category: Computers/Tablets & Networking > Computer Components & Parts > Power Supplies > See more 24 Pins ATX Benchtop Board Computer PC Power S...

Add to Watchlist

ALL IN ONE INTERFACE FOR ATX POWER SUPPLIES

SAVE UP TO 5% See all eligible items ▸

There is a -12V,a +12V,a 5V,a 3.3V terminal;

Each output take a 5A fuse.

Overcurrent, fuse can be replaced by yourself.





24 Pins ATX Benchtop Board Computer PC Power Supply Breakout Adapter Module

17 viewed per day ★★★★½ 28 product ratings

Condition: New

Sale ends in: 07h 27m 09s

Quantity: 1 — 6 available

174 sold / See feedback

Was: ~~US $4.32~~

You save: $0.22 (5% off)

Price: **US $4.10**

Buy It Now

Add to cart

♡ Add to Watchlist

☐ 2-year protection plan from SquareTrade - $1.99

174 sold	More than 96% sold	30-day returns

Shipping: $2.99 Standard SpeedPAK from China/Hong Kong/Taiwan | See details

International shipment of items may be subject to customs processing and additional charges.

Item location: shenzhen , China

Ships to: Worldwide See exclusions

Shop with confidence

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Get the item you ordered or get your money back. Learn more

Seller information

dealikee (4274 ★)

99.1% Positive feedback

♡ Save this Seller

Contact seller

Visit store

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SAVE UP TO 5% See all eligible items





24 Pins ATX Benchtop Board Computer PC Power Supply Breakout Adapter Module

17 viewed per day ★★★★½ 28 product ratings

Condition: New

Sale ends in: 07h 28m 37s

Quantity: 1 6 available

174 sold / See feedback

Was: ~~US $4.32~~

You save: $0.22 (5% off)

Price: **US $4.10**

Buy It Now

Add to cart

♡ Add to Watchlist

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Back to search results | Listed in category: Business & Industrial > Electrical Equipment & Supplies > Wire & Cable Connectors > Other Wire & Cable Connectors | Add to Watchlist

12VOLT – 40AMP DISTRIBUTION BOX FOR POWER POLES



Mountain West Radio RIGrunner 4008 Fused 8 Port Powerpole DC Power Panel

1 viewed per hour

Condition: New

Quantity: 1 Last one

10 sold / See feedback

Price: US $124.99

Buy It Now

Add to cart

♡ Add to Watchlist

100% buyer satisfaction | Free delivery in 3 days | More than 90% sold

Shipping: FAST 'N FREE

Guaranteed by Sat. May. 23 | See details

Item location: Rigby, Idaho, United States

Ships to: Worldwide See exclusions

Payments: PayPal VISA MasterCard American Express Discover

PayPal CREDIT

No Interest if paid in full in 6 months on $99+. Apply Now | See terms

Earn up to 5x points when you use your eBay Mastercard. Learn more

Returns: Free 30 day returns | See details

Shop with confidence

eBay Money Back Guarantee

Get the item you ordered or get your money back. Learn more

Seller information

valley-ent (83934 ★)

100% Positive feedback

♡ Save this Seller

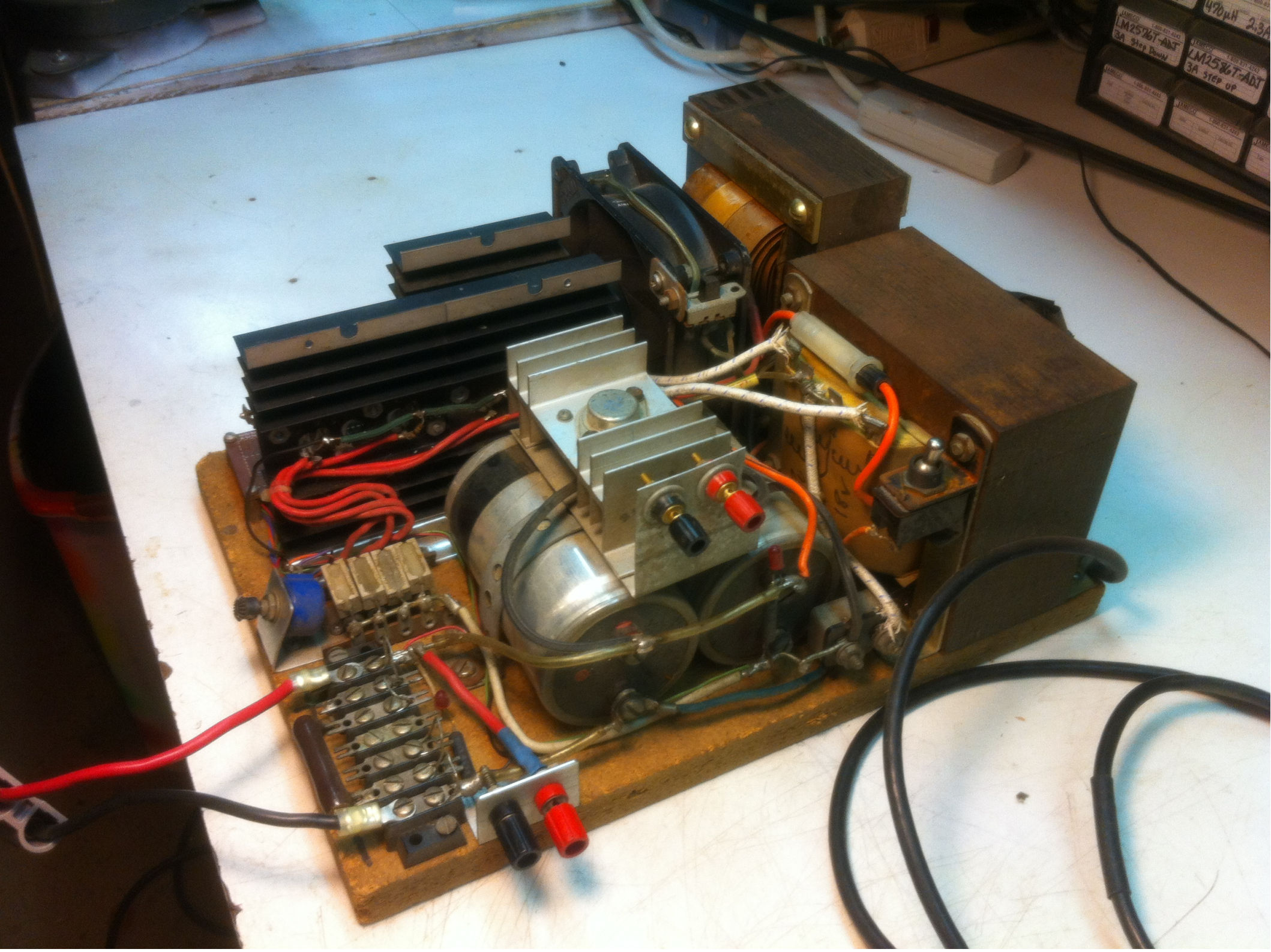
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$ Have one to sell? Sell now




LM2576T-ADJ
3A Step Down
LM2576T-ADJ
3A Step UP

Have Fun Building, 73 Bruce N6THN

