

DELCO

OLDSMOBILE MODEL 989127

TROUBLE SHOOTING THE OUTPUT STAGE

A quick way to determine that the 2N278 is conducting can be made by checking the collector voltage, from transistor case to the radio case. If no voltage is present, the transistor is not conducting or the transistor heat radiator is grounded to the radio case. If the voltage at the collector is higher than listed, the transistor is conducting too heavily (check with milliammeter) or the output transformer is open. The amount of current the transistor conducts is determined by the voltages at each element, the resistor in the base and emitter circuits, the input transformer secondary resistance, and the transistor itself. The most common defect in the transistor is an internal short between emitter and collector. To check for this, use the following procedure.

1. Unsolder base and emitter leads from the circuit.
2. Set ohmmeter on the "R x 1" scale (no other scale should be used.)
3. Place negative lead of ohmmeter (polarity refers to internal ohmmeter battery) on collector, and positive lead on the emitter.
4. The transistor is shorted if reading is "O".

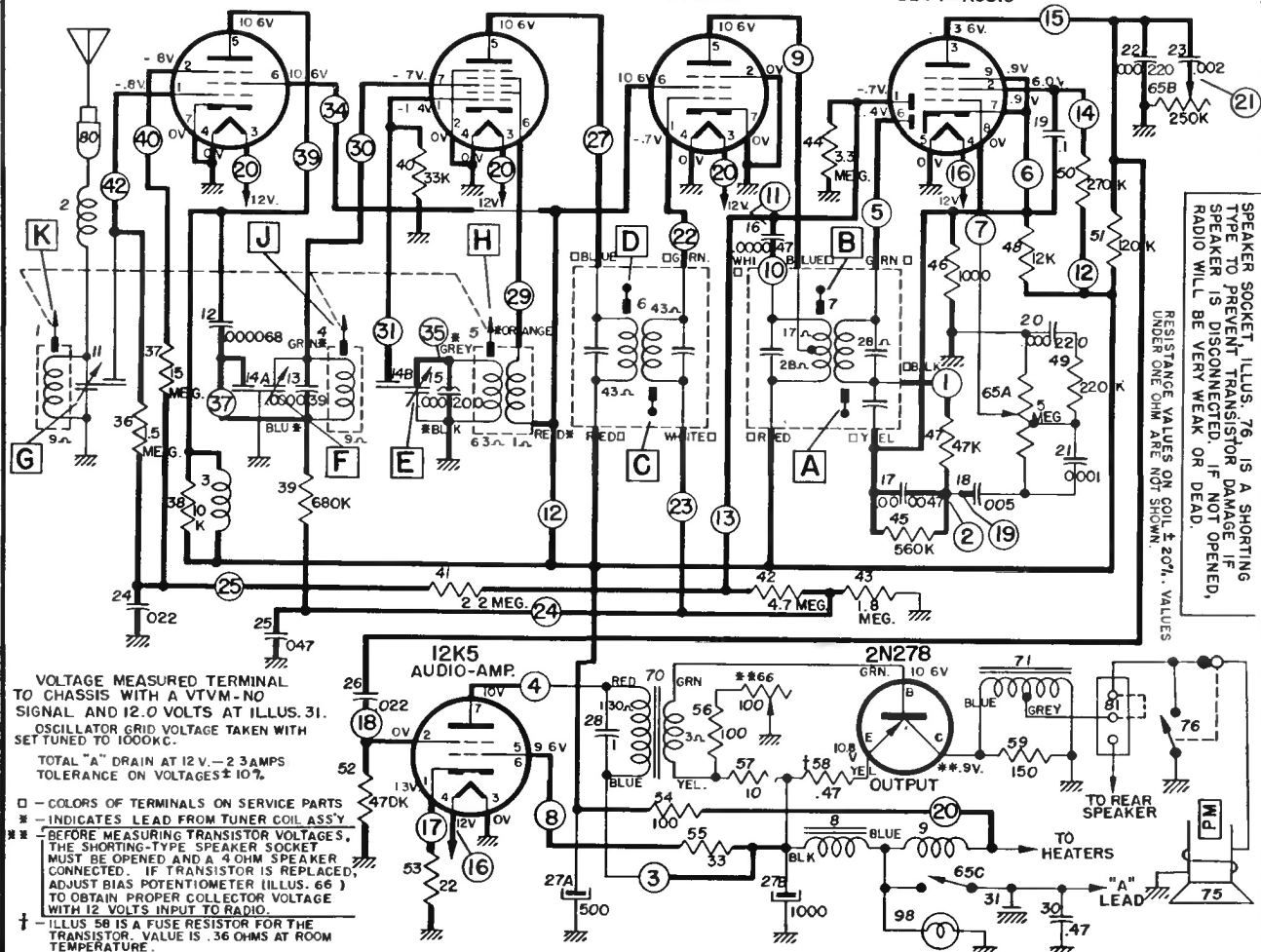
PRINTED CIRCUIT SHOWN IN HEAVY LINES.

I2BL6
R.F.AMP.

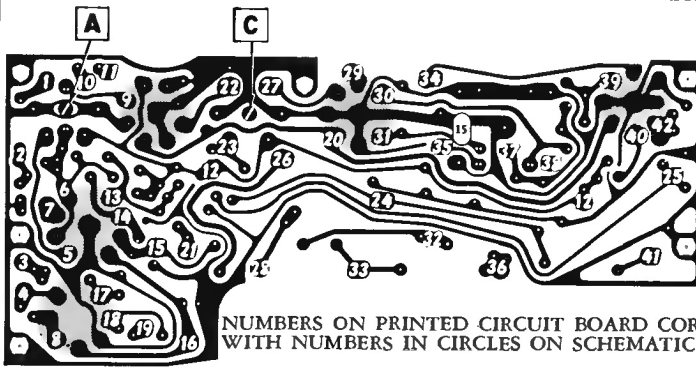
I2AD6
OSC.-MOD.

I2AF6
I.F.AMP.

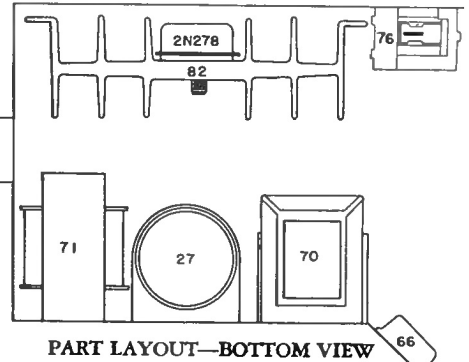
I2F8
DET.-1ST AUDIO



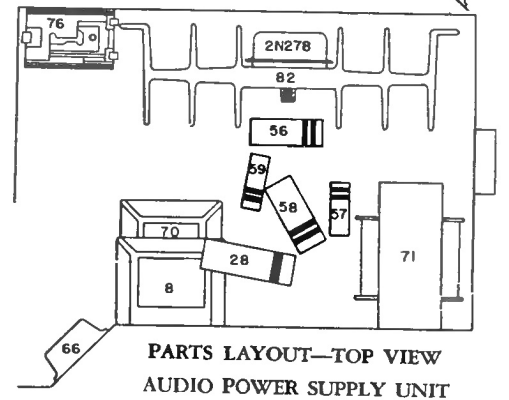
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NUMBERS ON PRINTED CIRCUIT BOARD CORRESPOND WITH NUMBERS IN CIRCLES ON SCHEMATIC DIAGRAM.



PART LAYOUT—BOTTOM VIEW



PARTS LAYOUT—TOP VIEW
AUDIO POWER SUPPLY UNIT

ALIGNMENT PROCEDURE

Output Meter Connections.....Across Voice Coil
Generator Return.....To Receiver Chassis
Dummy Antenna.....In Series With Generator
Volume Control Position.....Maximum Volume
Tone Control Position.....Treble Position
Generator Output.....Minimum for Readable Indication

CONNECT VACUUM TUBE VOLTMETER ACROSS SPEAKER VOICE COIL DURING ALIGNMENT.

PARTS LAYOUT—TUBE VIEW

Steps	Series Capacitor or Dummy Antenna	Connect Signal Generator to	Signal Generator Frequency	Tune Receiver to	Adjust in Sequence For Max. Output
1	0.1 Mfd.	12AD6 Grid (Pin #7)	262 KC	High Frequency Stop	A, B, C, D
2	0.000068 Mfd.	Antenna Connector	1615 KC	High Frequency Stop	*E, F, G
3	0.000068 Mfd.	Antenna Connector	600 KC	Signal Generator Signal	J, K
4	0.000068 Mfd.	Antenna Connector	1615 KC	High Frequency Stop	F, G
5	0.000068 Mfd.	Antenna Connector	1100 KC	Signal Generator Signal	L**

*Before making this adjustment check mechanical setting of oscillator core "H." The rear of the core should be 1 1/2" from the mounting end of the coil form. (This measurement is readily made by inserting a suitable plug in the mounting end of the coil form.) Core adjustment should be made with a non-metallic screw driver.

**L is the pointer adjustment which is on the connecting link, between the pointer assembly and core guide bar (See tuner Dwg.). It should be adjusted so that when looking directly at the dial the pointer is on the 1100 KC mark. This setting is to give the correct relationship between the pointer and the dial when the radio is installed in a car.

With the radio installed and the car antenna plugged in adjust the antenna trimmer "G" for maximum volume with the radio tuned to a weak station between 600 and 1000 KC (see sticker on case.)