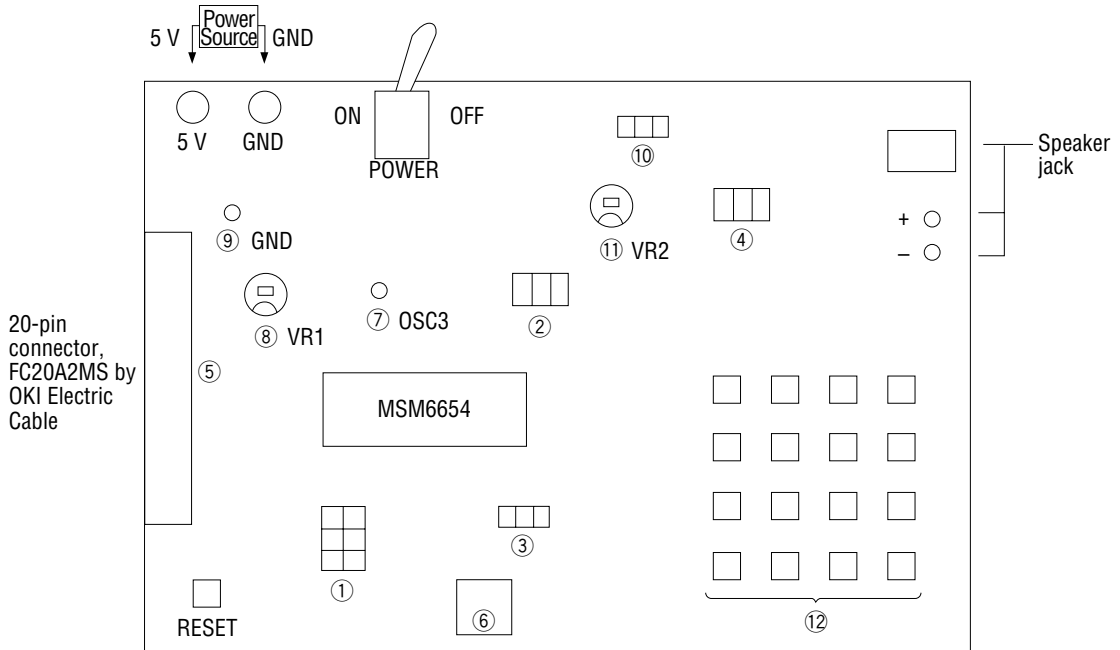


MSM6654 DEMO BOARD

MSM6654 Demonstration Board

BOARD DESIGN



BOARD FEATURES

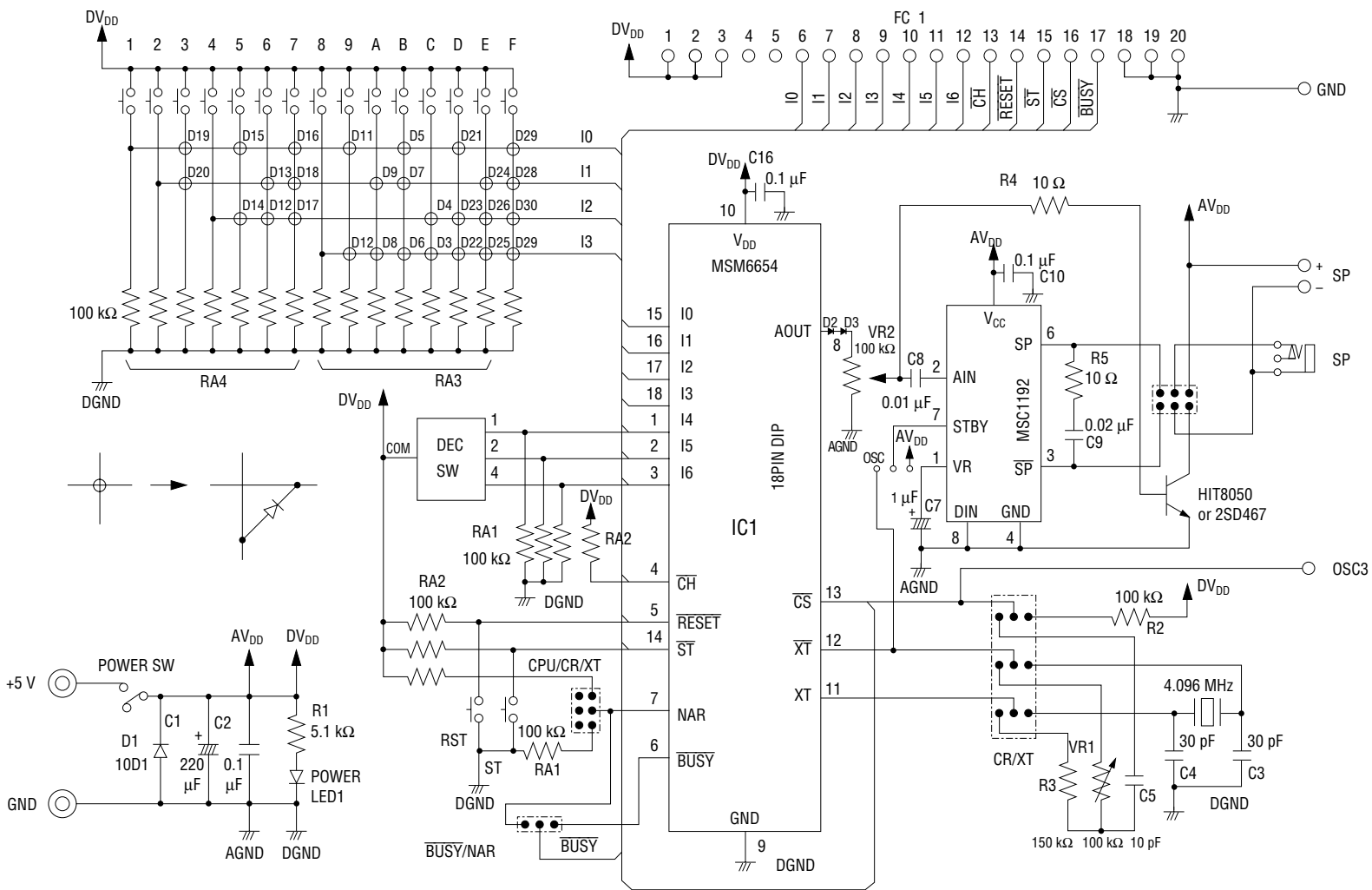
- ①, ② Standalone/microcontroller interface switching jumpers and XT/ $\overline{\text{CR}}$ switching jumpers
 The jumpers in ① are used to select the operation in standalone mode or the operation in microcontroller interface mode. The jumpers in ② are used to select RC oscillation or crystal oscillation. When the standalone mode is used, for RC oscillation, set the jumpers in ① to the lower right side and set the three jumpers in ② to the lower side. For crystal oscillation, set the jumpers in ① to the upper right side and set the three jumpers in ② to the upper side. When a microcontroller is used, only RC oscillation is settable. Set the jumpers in ① to the upper left side and set the three jumpers in ② to the upper side.
- ③ $\overline{\text{BUSY}}$ /NAR switching jumper
 When the jumper is turned to the right side, the $\overline{\text{BUSY}}$ signal is output from pin 17 of the 20-pin connector. When the jumper is turned to the left side, the NAR signal is output from the same pin. When a standalone computer is used, turn the jumper to the right side.
- ④ AMP/TR switching jumpers
 To amplify an analog signal which is output from AOUT, with transistors, set the two jumpers to the right side. To amplify it with an amplifier, turn the two jumpers to the left.

- ⑤ 20-pin connector
All necessary signals are connected to the 20-pin connector when a microcontroller is used. The connector pins are arranged as shown below.

Connector pin No.	Signal	Connector pin No.	Signal
1	DV _{DD}	11	I5
2	DV _{DD}	12	I6
3	DV _{DD}	13	\overline{CH}
4	NC	14	\overline{RESET}
5	NC	15	\overline{ST}
6	I0	16	\overline{CS}
7	I1	17	$\overline{BUSY/NAR}$
8	I2	18	GND
9	I3	19	GND
10	I4	20	GND

- ⑥ Address specification switch
When a standalone mode is used, select a word to be played by this HEX switch. 0-7 in this HEX switch correspond to A0-A2 in binary data. When a microcontroller is used, set the HEX switch to 0.
- ⑦ Frequency check pin (OSC3)
This pin monitors and checks the oscillation frequency.
- ⑧ Variable resistor (VR1) for adjusting the frequency of RC oscillation.
This variable resistor can change the frequency of RC oscillation. When the resistor is turned to the right, the frequency goes low. When the resistor is turned to the left, the frequency goes high. In this case, the frequency can be monitored by pin 7.
- ⑨ GND pin
- ⑩ OSC/V_{DD} switching jumper
Set the jumper to the left side.
- ⑪ Speaker amplifier volume (VR2 shared by AMP/TR)
Turn the volume switch to the right to increase the sound volume. Turn the volume switch to the left to reduce the sound volume.
- ⑫ Complete SW input interface
When a standalone computer is used, press the 1-F buttons to play voices corresponding to 1-F of SW3-SW0. Press the lower left ST button (random voice playback button) to play voices that are randomly selected from 31 types of phrases corresponding to A0 and SW3-SW0. But, when the ST switch is pressed while turning the power ON or during the input of \overline{RESET} , firstly voice playback is made starting from the 1st phrase and beyond secondly it is made randomly.

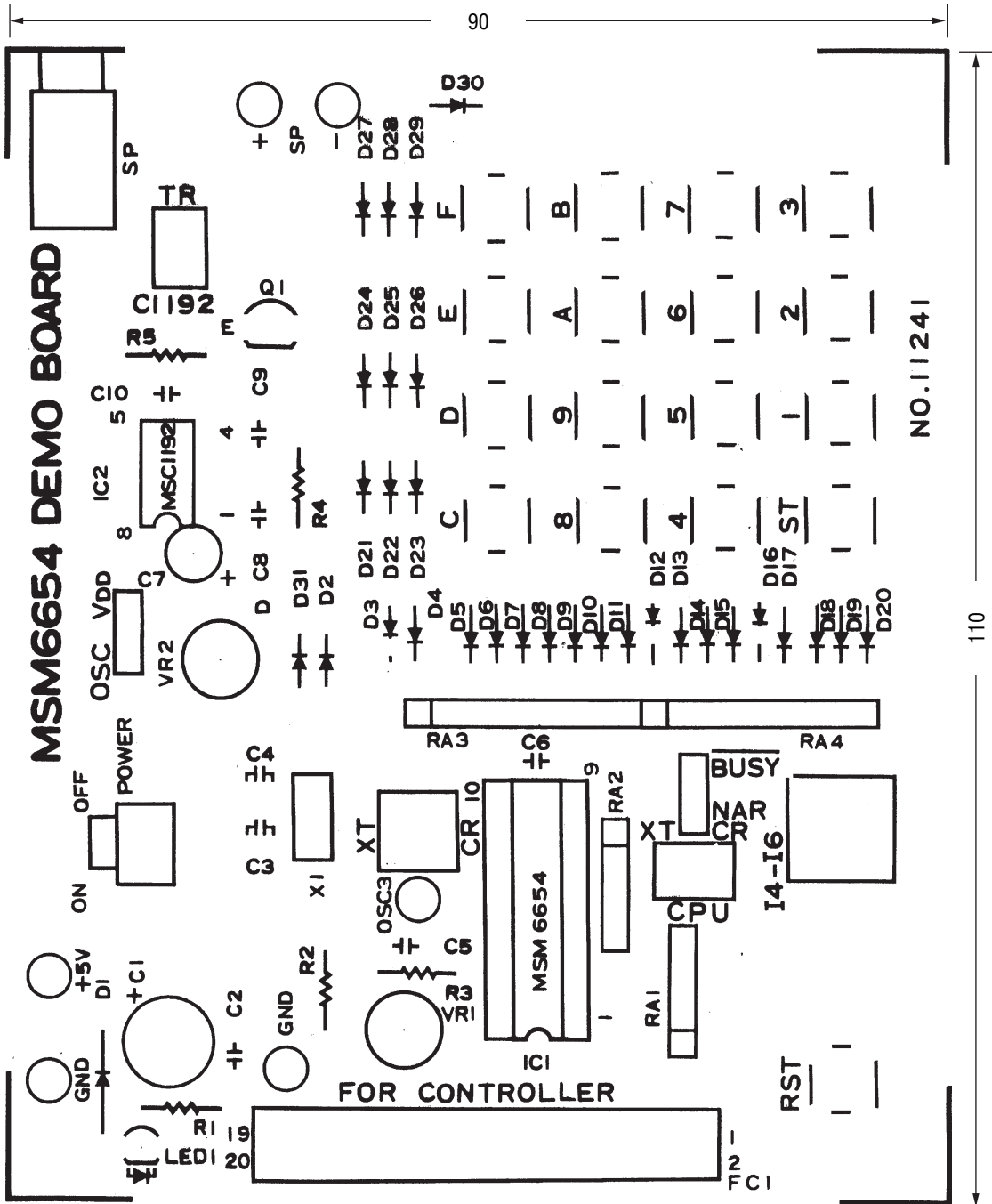
CIRCUIT DIAGRAM



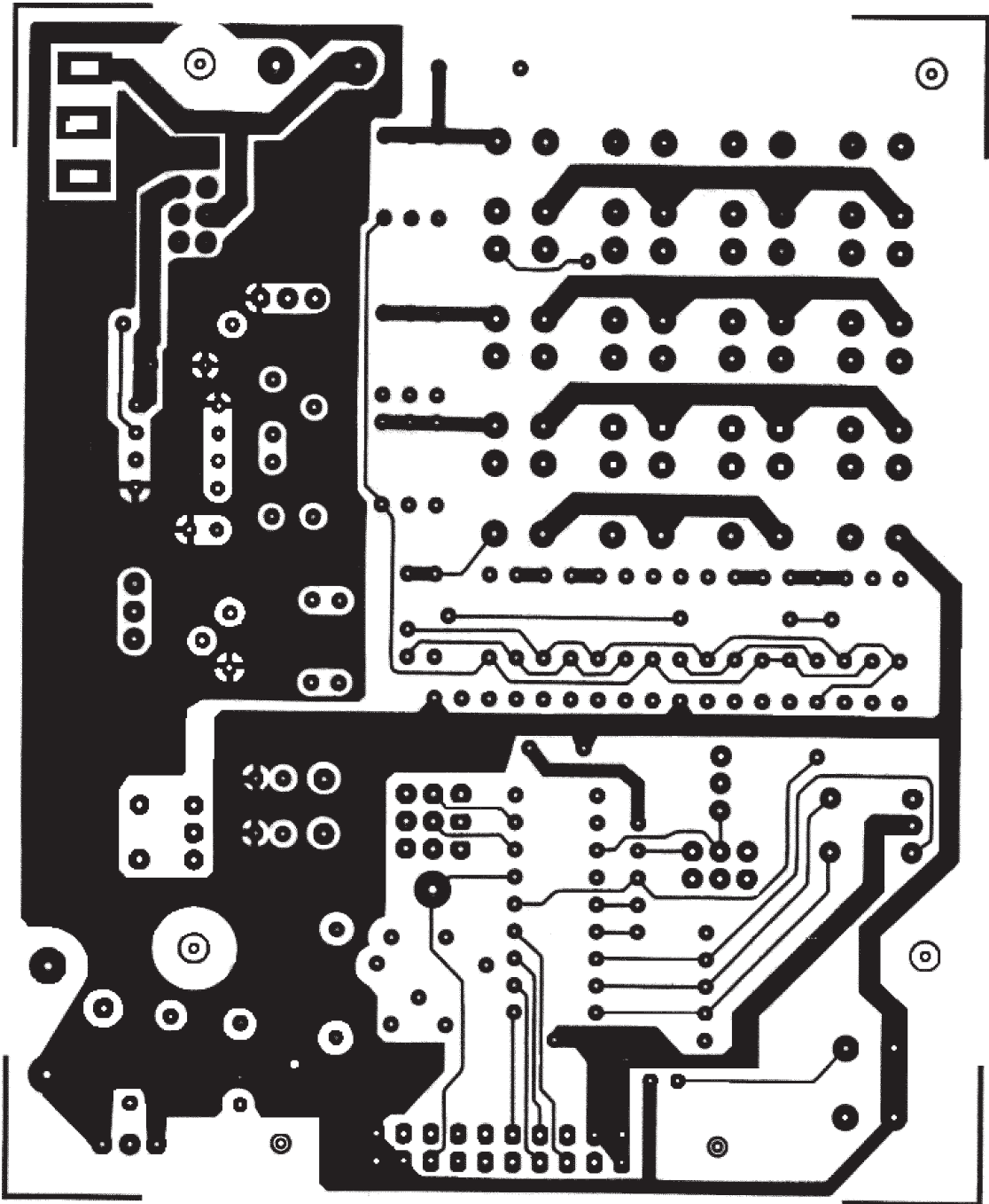
PATTERN LAYOUT

Silk Screen

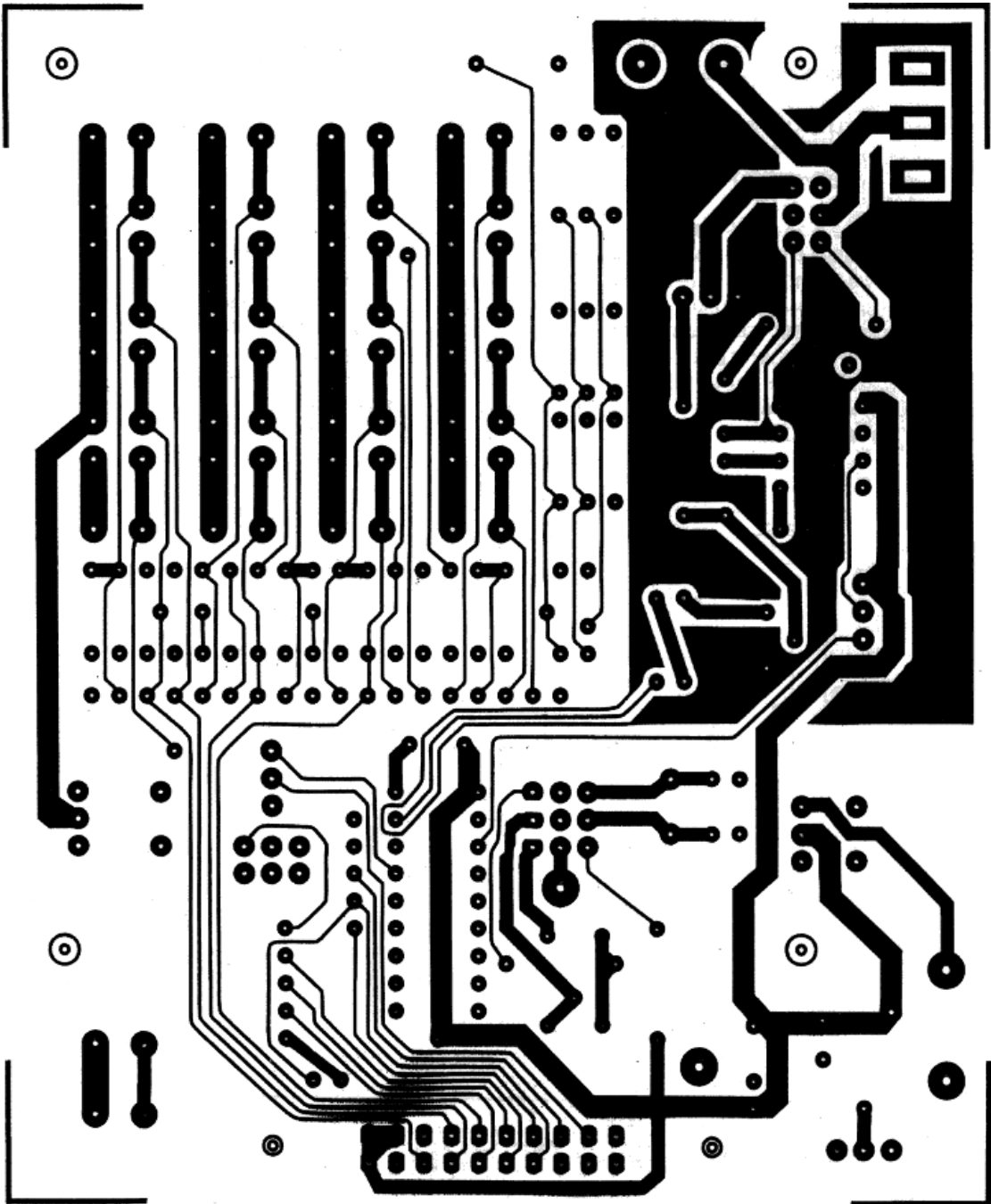
(Unit: mm)



Mounting Side



Solder Side



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