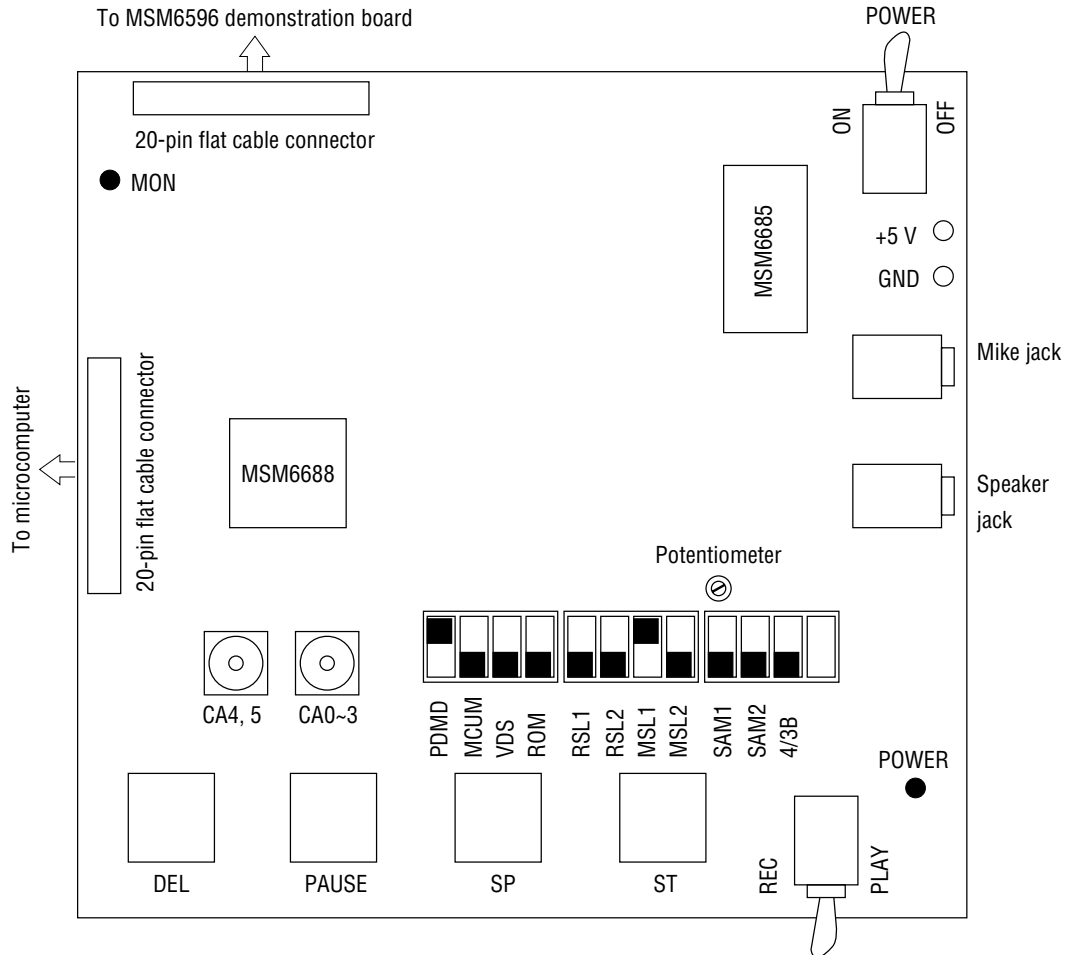


## MSM6688 DEMO BOARD

### MSM6688 Demonstration Board

#### BOARD DESIGN



#### CONDITION SETTING

Two HEX switches and three DIP switches are used to set recording conditions.

- Normally, turn on dip switch PDMD.  
 OFF: The device is automatically turned off except for recording and playback.  
 ON: The device is not turned off and is on standby except for recording and playback.
- Turn off dip switch MCUM.  
 OFF: Sets up the stand-alone mode.  
 ON: Sets up the microcomputer interface mode. (Note)

Note: The microcomputer interface mode cannot be set up merely by turning on dip switch MCUM. Refer to the section of "WHEN USING IN MICROCOMPUTER INTERFACE MODE" when using this demonstration board in microcomputer interface mode.

- 3. Use dip switch VDS to specify whether to initiate with voice.  
 OFF: Normal mode where recording is not initiated with voice  
 ON : Voice initiation

Note: Voice initiation requires the use of a regulated power supply instead of a battery. When a battery is used, the voltage variation of several mV during the start of recording is amplified and, thus, results in voice detection.

- 4. Turn off dip switch ROM.  
 OFF: Sets up the recording and playback mode.  
 ON : Sets up the ROM playback mode.
- 5. Use dip switches RSL1 and RSL2 to set the number of serial registers to be connected externally.

RSL2	OFF	OFF	ON	ON
RSL1	OFF	ON	OFF	ON
Number of serial registers	1	2	3	4

- 6. Turn on dip switch MSL1 and turn off MSL2.
- 7. Use dip switches SAM1 and SAM2 to select the sampling frequency.

SAM2	SAM1	Sampling frequency
OFF	OFF	$f_{OSC}/1024$ (4.0 kHz)
OFF	ON	$f_{OSC}/768$ (5.3 kHz)
ON	OFF	$f_{OSC}/640$ (6.4 kHz)
ON	ON	$f_{OSC}/512$ (8.0 kHz)

\* A value in parentheses is applied when  $f_{OSC}$  is 4.096 MHz.

- 8. Use dip switch 4/3B to select the bit rate.  
 OFF: 3-bit ADPCM  
 ON : 4-bit ADPCM

- Use the HEX switch (CA) to select a channel for recording and specify a phrase.

CA4, 5	CA0-3	Phrase number	Remarks
0	0	Ch 00	For deletion of all phrases
0	1	Ch 01	Applicable to recording and playback, and to ROM playback (63 phrases)
:	:	:	
:	:	:	
:	F	Ch 0F	
1	0	Ch 10	
:	:	:	
:	:	:	
:	F	Ch 1F	
2	0	Ch 20	
:	:	:	
:	:	:	
:	F	Ch 2F	
3	0	Ch 30	
:	:	:	
:	:	:	
:	F	Ch 3F	

**RECORDING**

- Turn on the power switch. The LED (POWER) on the demonstration board lights.
- Set HEX switches CA4, 5 and CA0-3 at "00".
- Press the DEL button to delete all phrases.
- Set conditions according to the above condition setting.
- Place the REC/PLAY switch in the REC position to set up the recording mode.
- Press the ST button to record voice through the mike.
- Upon the exhaustion of the whole memory capacity, recording is terminated automatically. To suspend recording, press the SP button.

Note: If the whole memory capacity has been used for recording, the other phrases cannot be recorded.

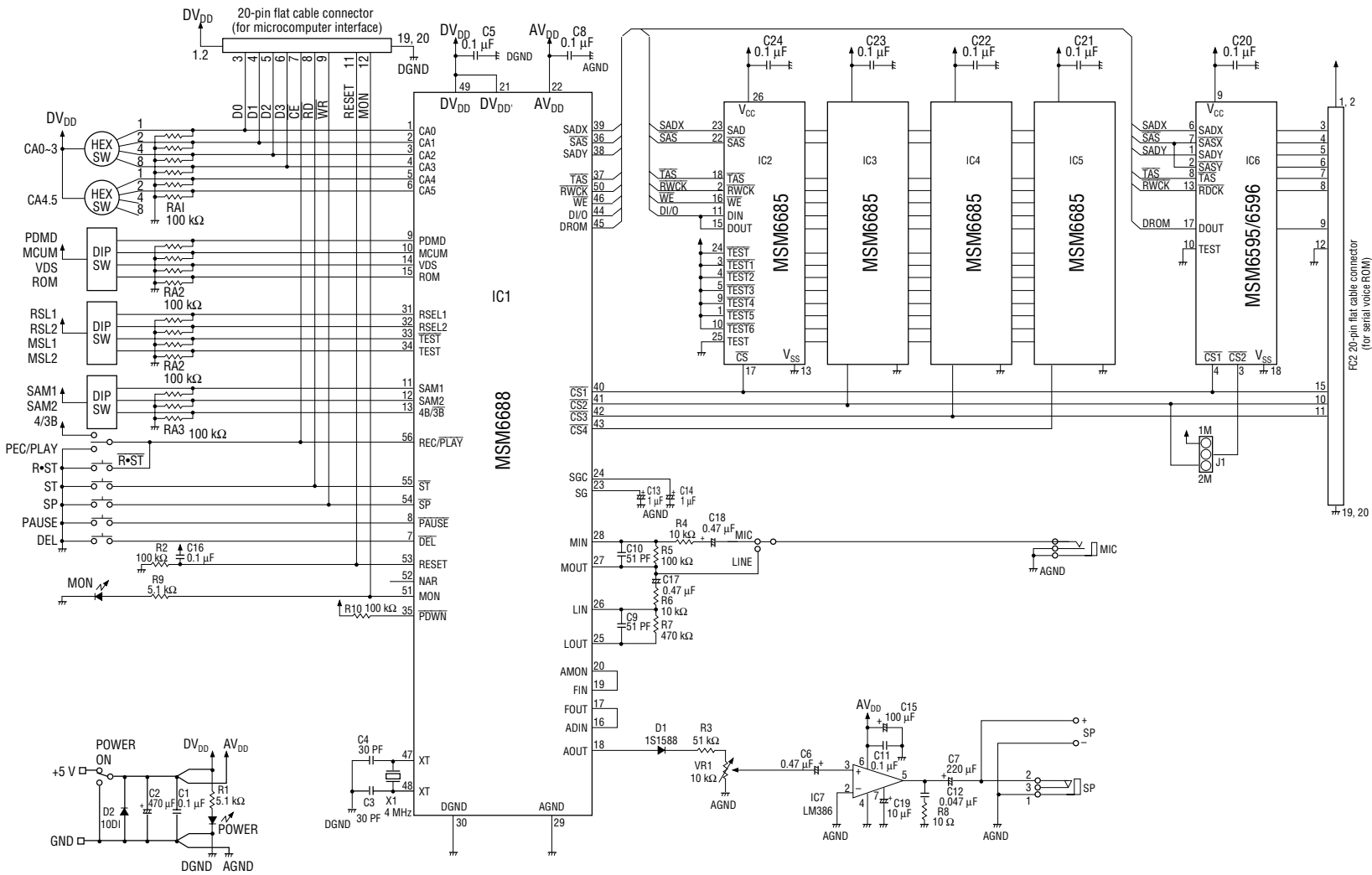
**PLAYBACK**

1. Place the REC/PLAY switch in the PLAY position to set up the playback mode.
2. Pressing the ST button starts playback. During playback, the LED (MON) is lit.
3. The playback of a whole recording results in automatic termination. To suspend playback, press the SP button.
4. The volume of playback can be adjusted by the potentiometer.

**SUSPENDING RECORDING AND PLAYBACK**

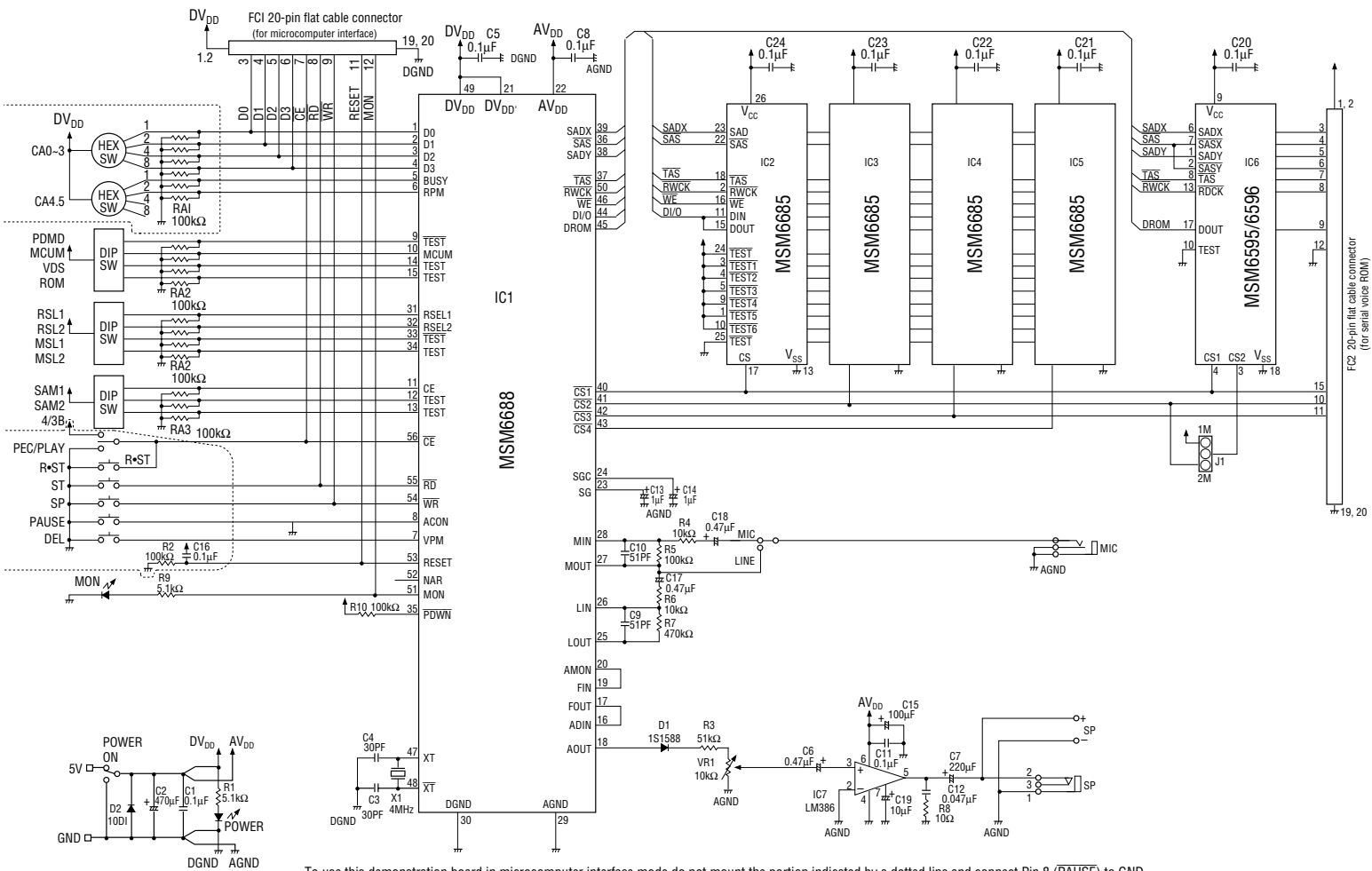
1. Pressing the PAUSE button during recording or playback causes the recording or playback to be suspended.
2. Pressing the ST button restarts recording and playback.

CIRCUIT DIAGRAM



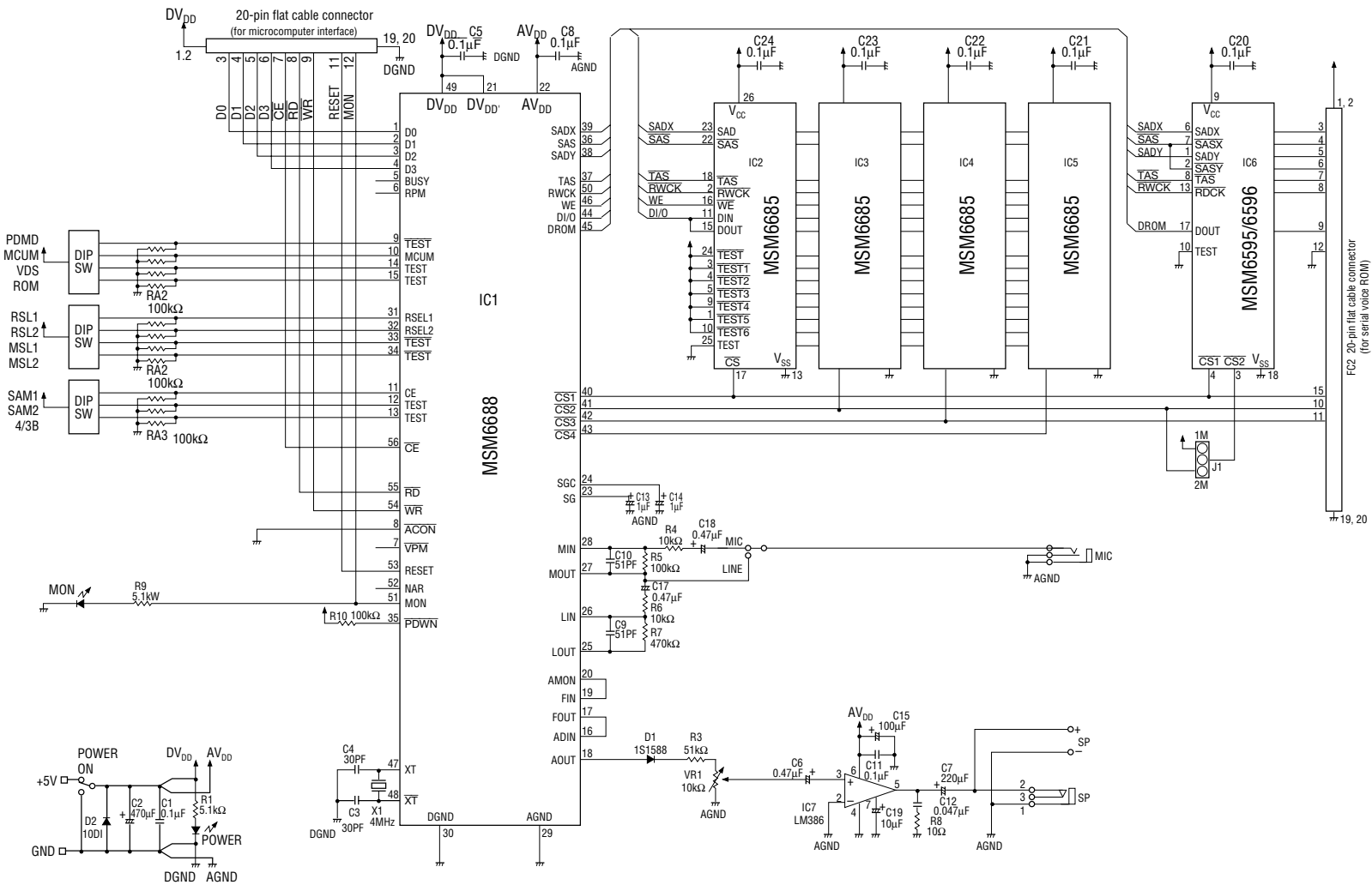
**WHEN USING IN MICROCOMPUTER INTERFACE MODE**

**How to Change Setting from stand-alone Mode to Microcomputer Interface Mode**



To use this demonstration board in microcomputer interface mode, do not mount the portion indicated by a dotted line and connect Pin 8 (PAUSE) to GND.

Circuit Diagram(Microcomputer Interface Mode)



## SETTING PROCEDURE OF CONDITIONS

Three DIP switches are used to set recording conditions.

Turn on dip switch PDMD.

Turn on dip switch MCUM.

OFF: Sets up the stand-alone mode.

ON: Sets up the microcomputer interface mode.

Turn off dip switch VDS.

Turn off dip switch ROM.

Use dip switches RSL1 and RSL2 to set the number of serial registers to be connected externally.

RSL2	OFF	OFF	ON	ON
RSL1	OFF	ON	OFF	ON
Number of serial registers	1	2	3	4

Turn on dip switch MSL1 and turn off MSL2

Turn on dip switch SAM1 and turn off dip switch SAM2.

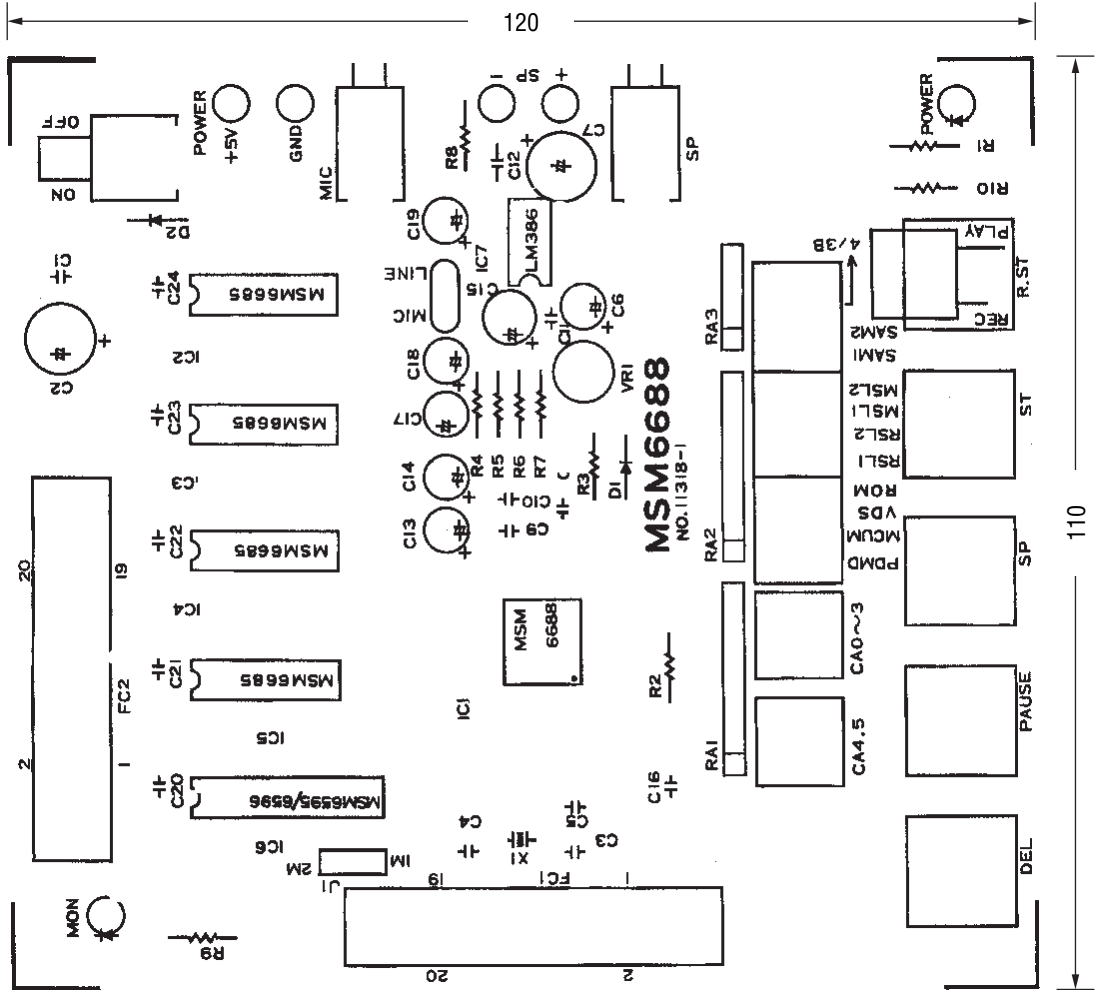
Turn off dip switch 4/3B.



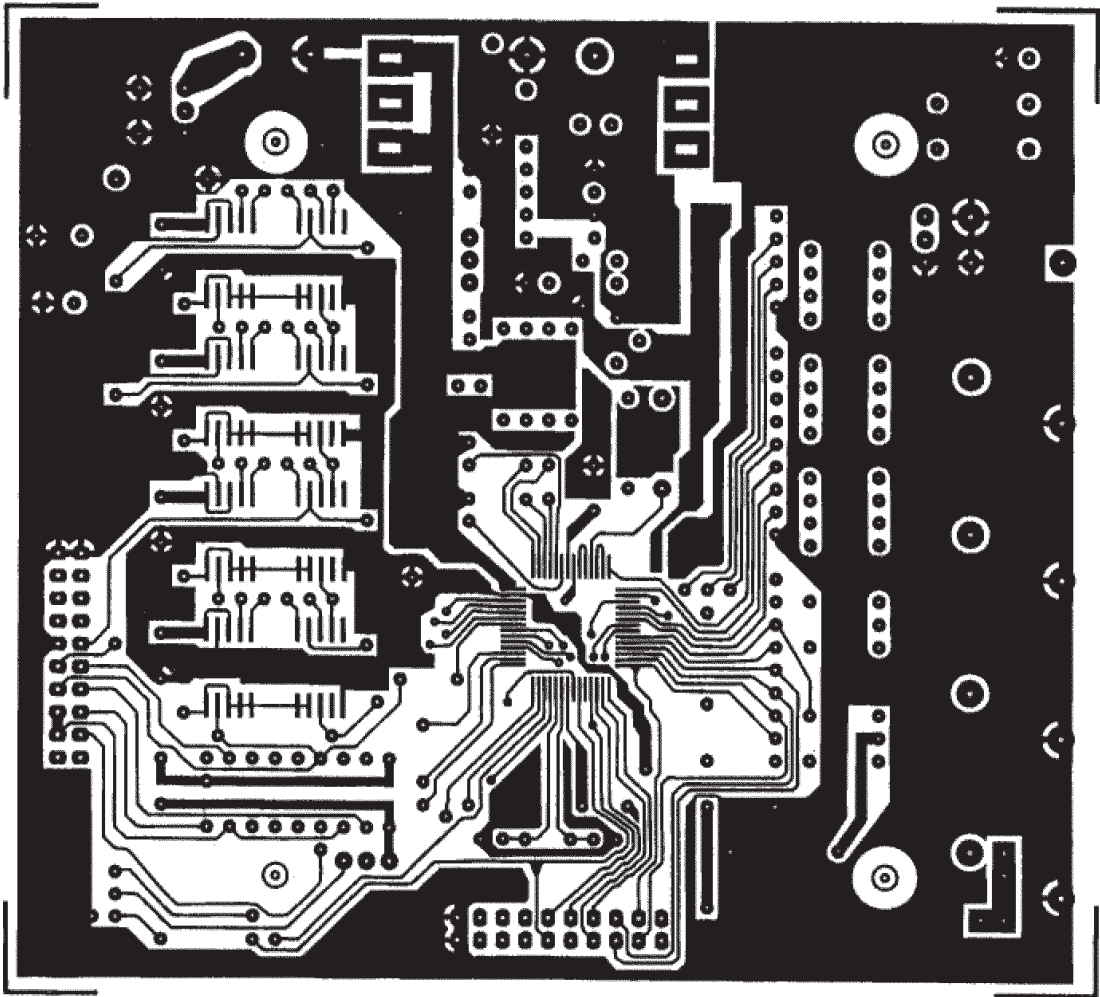
PATTERN LAYOUT

Silk Screen

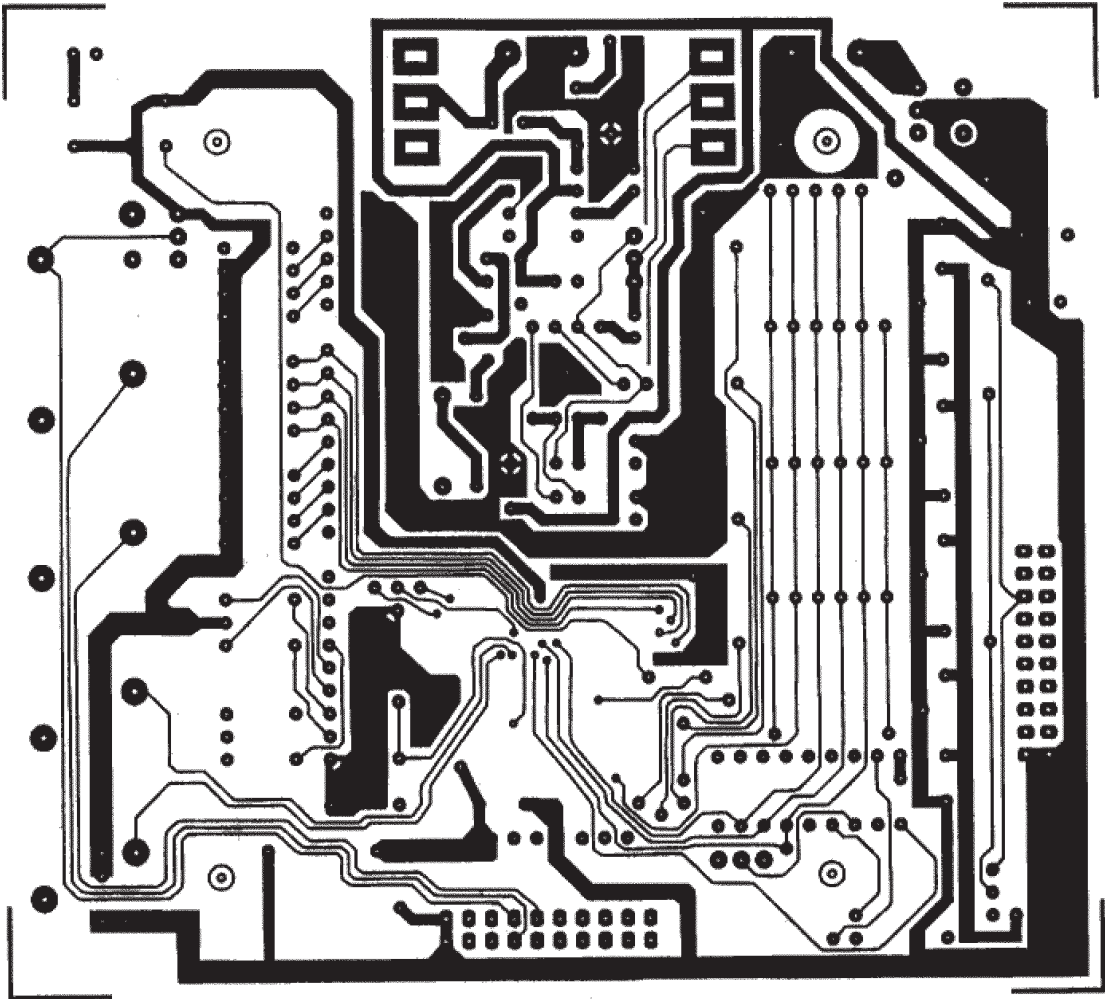
(Unit: mm)



Mounting Side



Solder Side



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