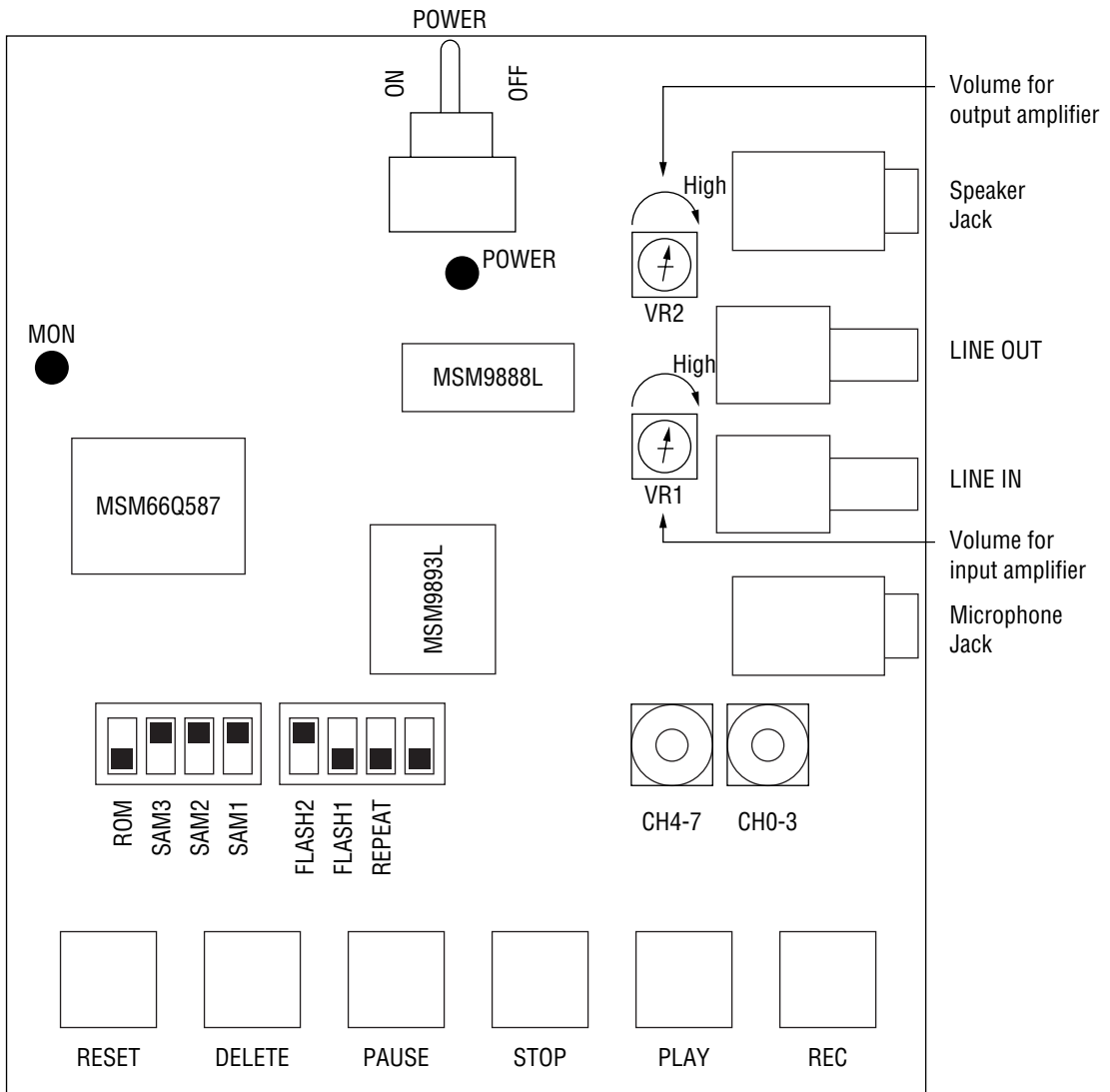# **OKI** Semiconductor

MSM9888L-xxx DEMO BOARD

MSM9888L-xxx DEMONSTRATION BOARD

1. BOARD DESIGN

2. SETTING UP RECORDING PARAMETERS

You can set up parameters for recording by using two HEX switches and two DIP switches.

2.1 Do not change the default setting of FLASH2 and FLASH1 DIP switches. If you happened to change the setting, return them to the default setting and push the RESET button.

2.2 Set REPEAT DIP switch to OFF.
    OFF: Playback the specified phrase one time.
    ON: Repeat playing back the specified phrase.

2.3 Set ROM DIP switch to OFF.
    OFF: Playback a recorded phrase.
    ON: Playback a pre-recorded (ROM) phrase.

2.4 Select a sampling frequency by using SAM3, SAM2 and SAM1 DIP switches.

| SAM3	SAM2	SAM1	Sampling Frequency
OFF	OFF	OFF	f_{osc}/2048 (2.0kHz)
ON	OFF	OFF	f_{osc}/1536 (2.7kHz)
OFF	ON	OFF	f_{osc}/1280 (3.2kHz)
ON	ON	OFF	f_{osc}/1024 (4.0kHz)
ON	OFF	ON	f_{osc}/768 (5.3kHz)
OFF	ON	ON	f_{osc}/640 (6.4kHz)
ON	ON	ON	f_{osc}/512 (8.0kHz)

*Parenthesized figures at f_{osc} = 4.096 MHz

2.5 Specify the phrase to be recorded by selecting a channel with HEX switches (CH).

		Phrase No.	
		Playback Flash Memory	**Playback Mask ROM**
CH4 to 7	**CH0 to 3**	**ROM = OFF**	**ROM = ON**
0	0	To erase all phrases	Use Prohibited
0	1	CH 01	CH 01
0	2	CH 02	CH 02
•	•	•	•
3	F	CH 3F	CH 3F
4	0		CH 40
4	1		•
•	•	Use Prohibited	•
F	F		CH FF

3. RECORDING

POWER

3.1 Turn the POWER switch on to power up the board. The on-board LED (POWER) goes on.
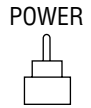
3.2 Push the RESET button to initialize the demonstration board.

RESET

3.3 Set up recording parameters according to item2. earlier in this document.

3.4 Push the REC button to initiate recording and input your message via microphone. The on-board LED (MON) keeps on during recording.

REC

3.5 Recording ends automatically when the last address assigned to the channel has been reached. Push the STOP button to stop recording before it comes to the end.

STOP

[Note]   Once recording is made up to the last memory address, no additional phrase can be recorde.

4. PLAYINGBACK

4.1 Push the PLAY button to initiate playback.

PLAY

4.2 Playback automatically ends when the last address of the recorded phrase has been reached. Push the STOP button to stop playback before the end of the phrase.

STOP

5. PAUSING ON-GOING RECORD/PLAYBACK

5.1 While in record/playback operation, you can push the PAUSE button whenever you want to suspend the on-going operation.

PAUSE

5.2 Pushing the button again resumes the suspended operation.

6. ERASING A RECORDED PHRASE(S)

6.1 Select a phrase to be erased according to item 2.5 earlier in this document.

6.2 Push the DELETE button to erase the selected phrase.

DELETE

[Note]   If you experience any problemin recording/playing back, erase "All" once. To do so, set the HEX switches (CH) to 00, and then push the DELETE button.

7. QUICK REFERENCE ON OPERATIONS

7.1 Playback Pre-recorded Phrase(s) (Mask ROM)

ROM	PHRASE					Pre-recorded Phrase
	CH4-7	CH0-3				
ON	C	1				"At this moment"
ON	C	2				"I'm unavailable to answer your call."
ON	C	3			Playback pre-	"I'm driving."
ON	C	4			recorded messages	"Right after the beep, please leave your name and brief mesage."
ON	C	5		Push the	stored in Mask ROM.	"Please call again later."
ON	C	6		PLAY button.		"Time for your message is"
ON	C	7			Push the STOP	"Recording time"
ON	C	8			button to stop on-	"Fifteen"
ON	C	9			goin playback	"Twenty"
ON	C	A			before its end.	"Thirty"
ON	C	B				"Seconds"
ON	C	C				BEEP (Frequency = 1.6kHz, Time = 0.6sec, Level = 13%)

7.2 Recording with Serial Voice Flash Memory

ROM	SAM			CH				Sampling Frequency	Operation
	3	2	1	CH4-7	CH0-3				
OFF	ON	OFF	OFF	0-3	0-F			4kHz	
OFF	ON	OFF	ON	0-3	0-F	Push the REC button.		5.3kHz	Initiate pre-specified recording at and save the data on the specified channel. Push the STOP button to stop on-going operation before its end.
OFF	ON	ON	OFF	0-3	0-F			6.4kHz	
OFF	ON	ON	ON	0-3	0-F			8.0kHz	

7.3 Playing Back Recorded Phrase from Serial Voice Flash Memory

ROM	PHRASE				Operation
	CH4-7	CH0-3			
OFF	0	1			Initiate playback of phrase 01 (CH01). Push the STOP button to stop on-going playback before its end.
OFF	0	2		Push the PLAY button.	Initiate playback of phrase 01 (CH02). Push the STOP button to stop on-going playback before its end.
•	•	•			•
OFF	3	E			Initiate playback of phrase 01 (CH3E). Push the STOP button to stop on-going playback before its end.
OFF	3	F			Initiate playback of phrase 01 (CH3F). Push the STOP button to stop on-going playback before its end.
OFF	4	0			Use-prohibited
OFF	4	1		Use-prohibited Channel.	Use-prohibited
•	•	•			•
OFF	F	E			Use-prohibited
OFF	F	F			Use-prohibited

PRE-RECORDED MESSAGES: PHRASE CODE AND OTHER DATA

Product Code: MSM9888L-820 (For general-purpose)

| Phrase Code	Message	Size	Time Length [sec]	Algorithm	Sampling Frequency [kHz]
00 to C0	Use-prohibited Code	—	—	—	—
C1	At this moment	A40	0.84	ADPCM	6.40
C2	I'm unavailable to answer your call.	1A31	2.15	ADPCM	6.40
C3	I'm driving.	1E7C	2.50	ADPCM	6.40
C4	Right after the beep, please leave your name and brief message.	4522	5.67	ADPCM	6.40
C5	Please call again later.	1DA2	2.43	ADPCM	6.40
C6	Time for your message is	1753	1.92	ADPCM	6.40
C7	Recording time	11CD	1.46	ADPCM	6.40
C8	Fifteen	4E2	0.40	ADPCM	6.40
C9	Twenty	5F8	0.49	ADPCM	6.40
CA	Thirty	7BE	0.64	ADPCM	6.40
CB	Seconds.	809	0.66	ADPCM	6.40
CC	Beep (1.6 kHz / 0.6 sec / 13%)	E88	0.60	PCM	6.40
CD to FF	Use-prohibited Code	—	—	—	—
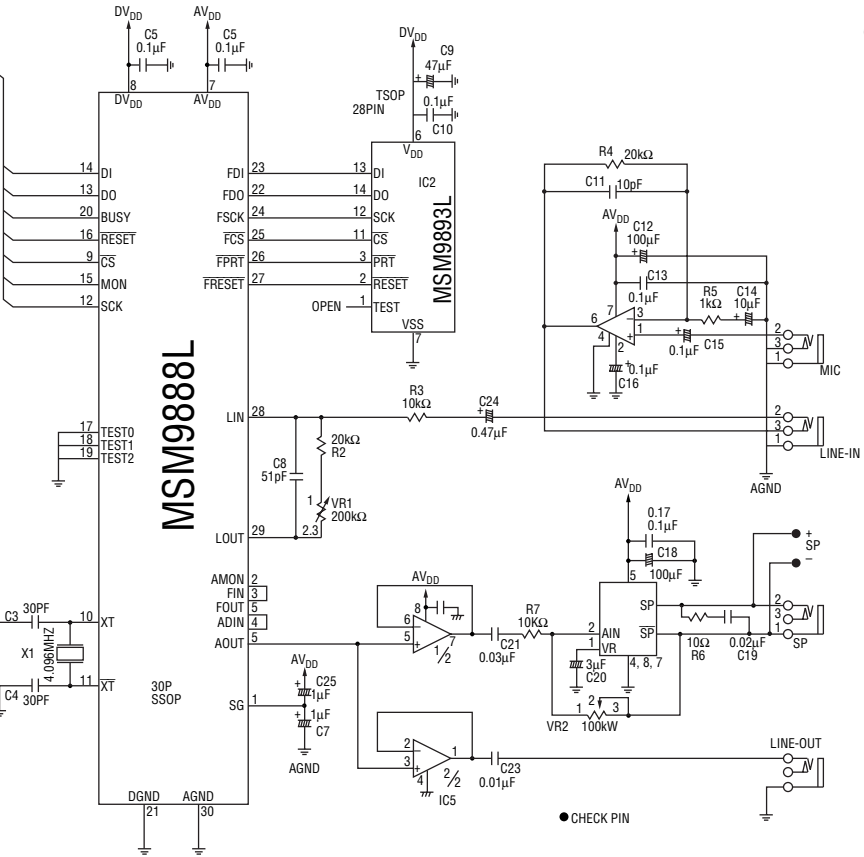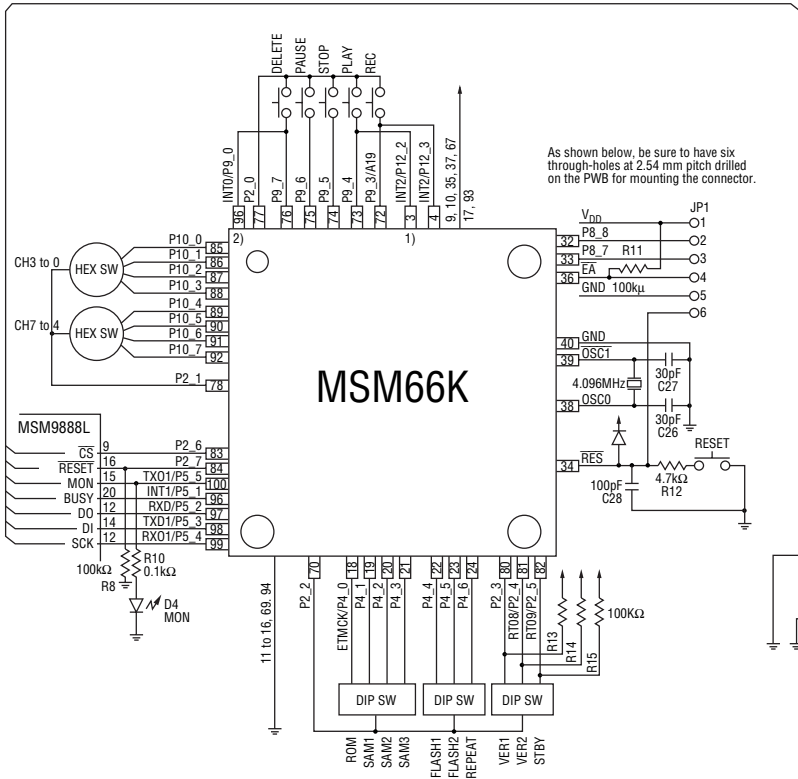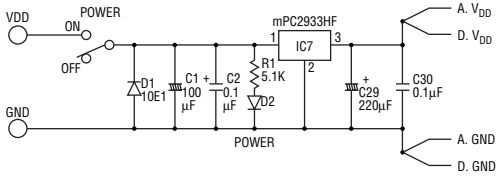
9. PATTERN LAYOUT

9.1 Silk Screen

(Unit: mm)
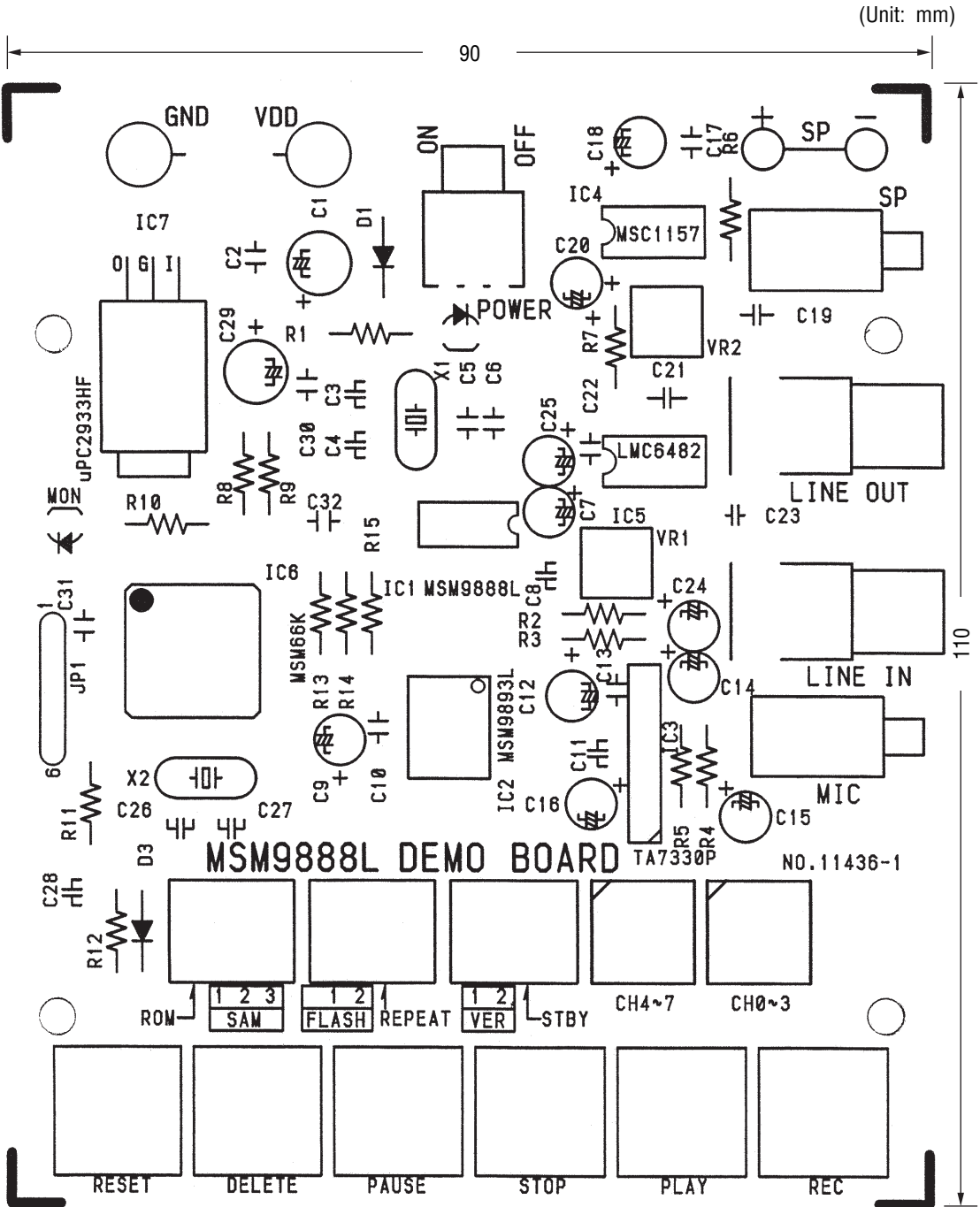
9.2 Mounting Side
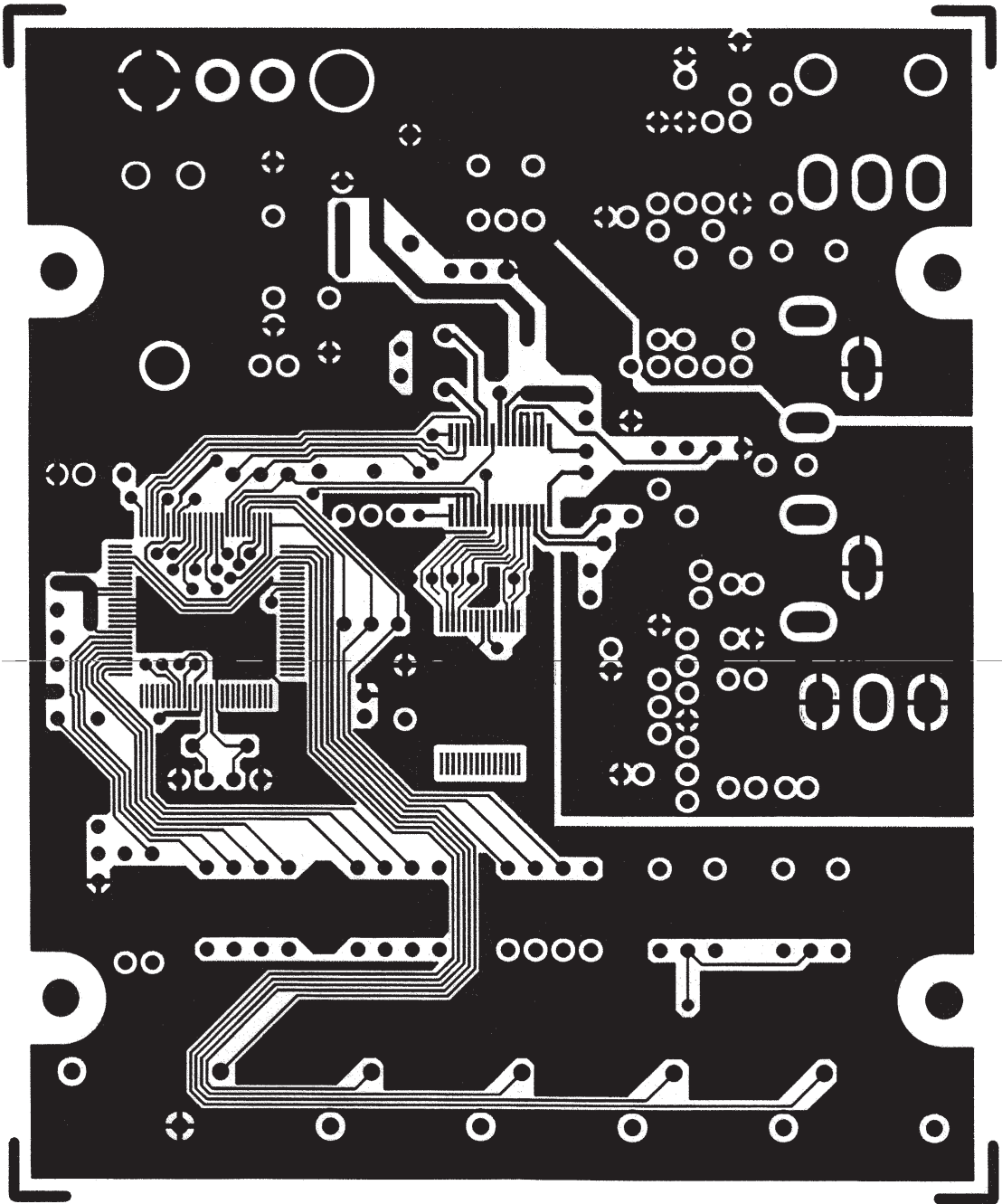
9.3 Solder Side
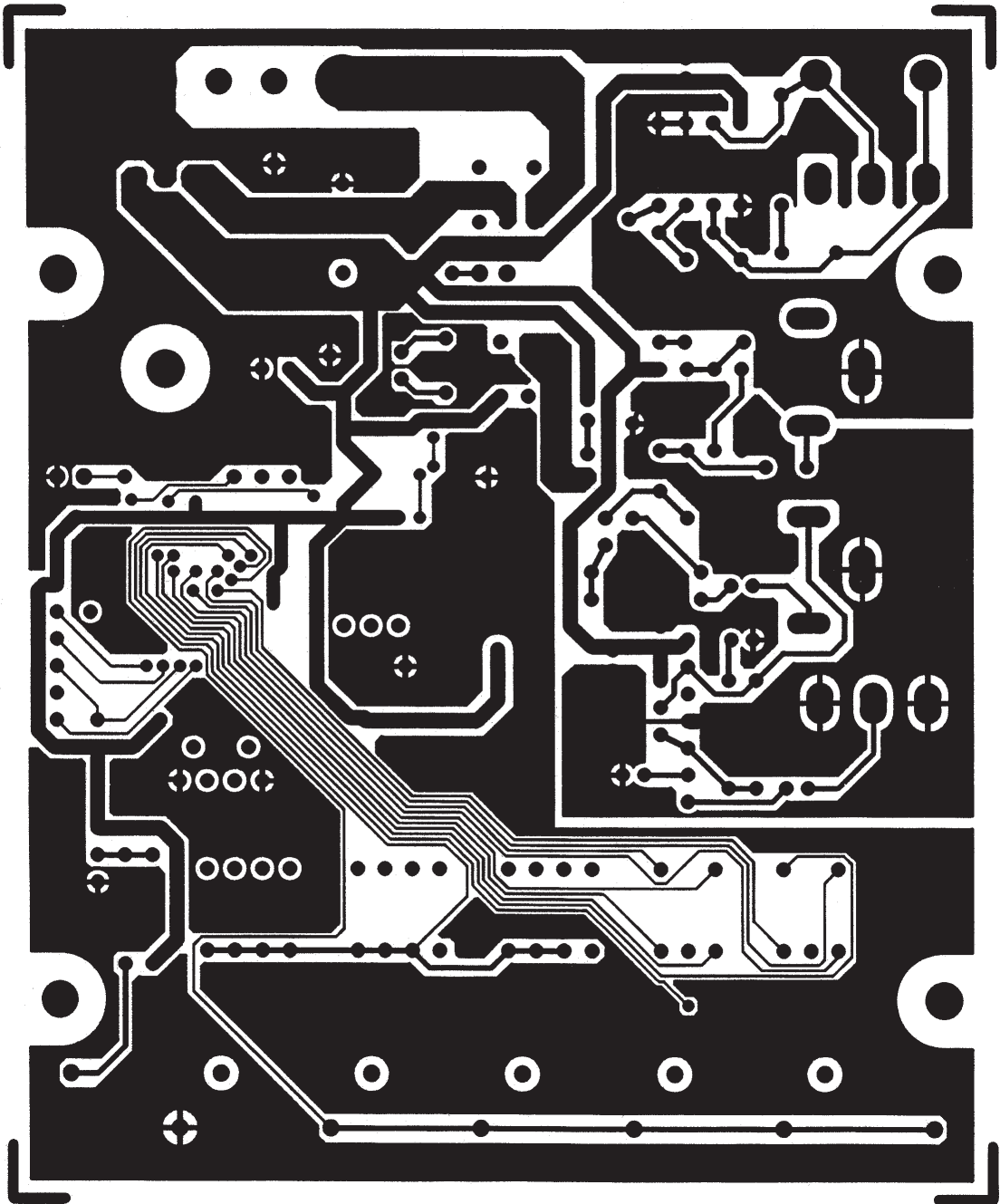
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