

## TR1815 单/两段, OSC 选择 7.5~30 秒录音

### General Description:

TR1815 分 10, 15 和 20 秒三种简单录/放音 IC, 由 OSC 电阻的阻值调节出不同秒数。IC 内建有 LPF 来减少录音时的噪音。由 PWM 直推喇叭或蜂鸣片。两个录放音指示 LED, 另有一留言 LED。

此 IC 非常适合用于便携式录音设备, 玩具等产品。

### FEATURE:

工作电压范围: 2.4~5.5VDC

外加震荡电阻 OSC

低静态电流, <1uA@3V

内建有低通滤波线路 LPF

可录一段或两段信息, 有两种模式可用来决定每段的录音长度: 固定时间分段和不固定时间分段, 由帮定脚位选择。

四键功能如下:

REC\_E: Edge/Unhold, 触发录音, 具有 Toggle ON/OFF 功能

REC\_L: Level/Hold 按键长按录音, 松开即停

Play\_E: Edge/Unhold 触发放音, 具有 Toggle ON/OFF 功能

Play\_L: Level/hold 触发放音

开始及结束录音时有提示音

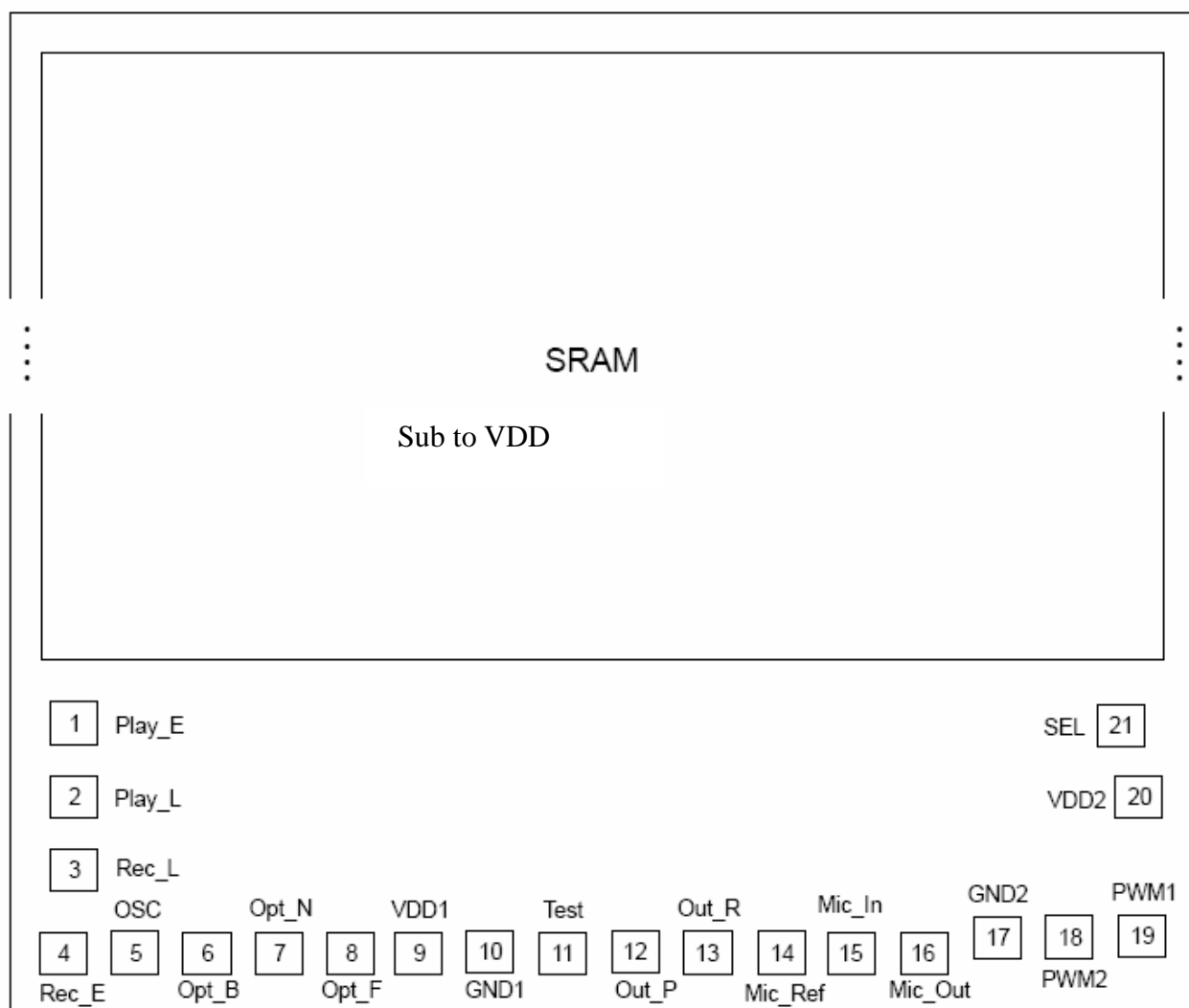
可选择单端或双端 PWM 输出, 直推喇叭或蜂鸣片

### DC Characteristics (at R<sub>osc</sub>=560kΩ, SR=6kHz)

Symbol	Parameter	VDD	Min.	Typ.	Max.	Unit	Condition
VDD	Operating voltage	-	2.4	3	5.5	V	Depending on Freq.
I <sub>sb1</sub>	Standby1	3	-	-	1	uA	Sleep mode, Message Indicator OFF.
		4.5	-	-	2		
I <sub>sb2</sub>	Standby2	3	-	3.5	-	uA	Sleep mode, Message Indicator ON, No load.
		4.5	-	7.5	-		
I <sub>op1</sub>	Operating1	3	-	0.8	-	mA	Recording, No load
		4.5	-	4.2	-		
I <sub>op2</sub>	Operating2	3	-	0.2	-	mA	Playback, No load
		4.5	-	0.3	-		
I <sub>il</sub>	Input current (Internal pull-high 300kΩ)	3	-	6	-	uA	V <sub>il</sub> =0v
		4.5	-	17	-		
I <sub>ol</sub>	Output-low current (Open-drain)	3	-	24	-	mA	Vol=0.75V
		4.5	-	52	-		Vol=1.50V
I <sub>PWM</sub>	PWM output current	3	-	40	-	mA	Load=8 ohms
		4.5	-	60	-		
dF/F	Frequency stability		-5	-	5	%	$\frac{F_{osc}(5.5v-2.4v)}{F_{osc}(5.5v)}$
dF/F	Fosc lot variation		-10	-	10	%	Different lot wafer

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引脚排列:



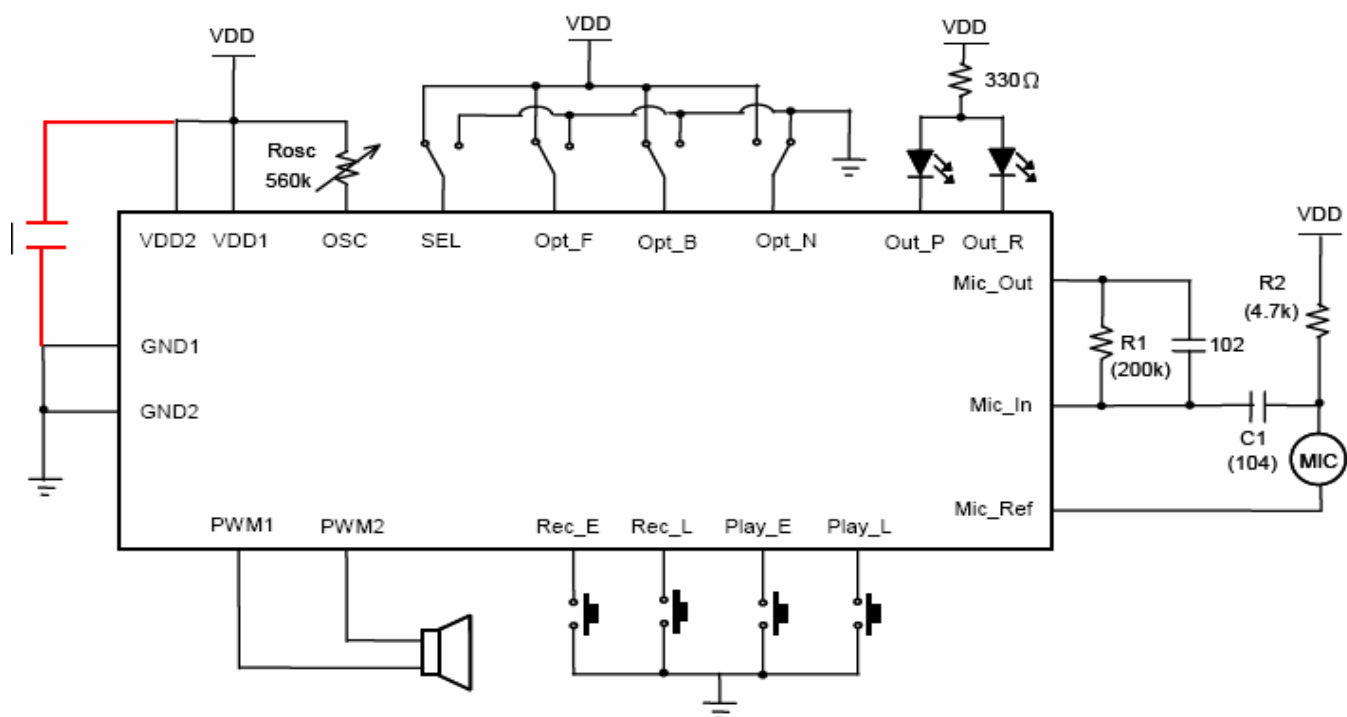
(0, 0)

Pad #	Pad Name	X	Y	Pad #	Pad Name	X	Y
1	Play_E	85	465	12	Out_P	1000	85
2	Play_L	85	345	13	Out_R	1116	85
3	Rec_L	85	225	14	Mic_Ref	1238	85
4	Rec_E	71	85	15	Mic_In	1363	85
5	OSC	198	85	16	Mic_Out	1474	85
6	Opt_B	308	85	17	GND2	1584	104
7	Opt_N	424	85	18	PWM2	1695	108
8	Opt_F	540	85	19	PWM1	1816	108
9	VDD1	657	85	20	VDD2	1819	309
10	GND1	767	85	21	SEL	1794	425
11	Test	877	85				

应用线路: A

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### a. PWM Direct Drive (MIC\_SPK Alone, 2-Ended PWM)

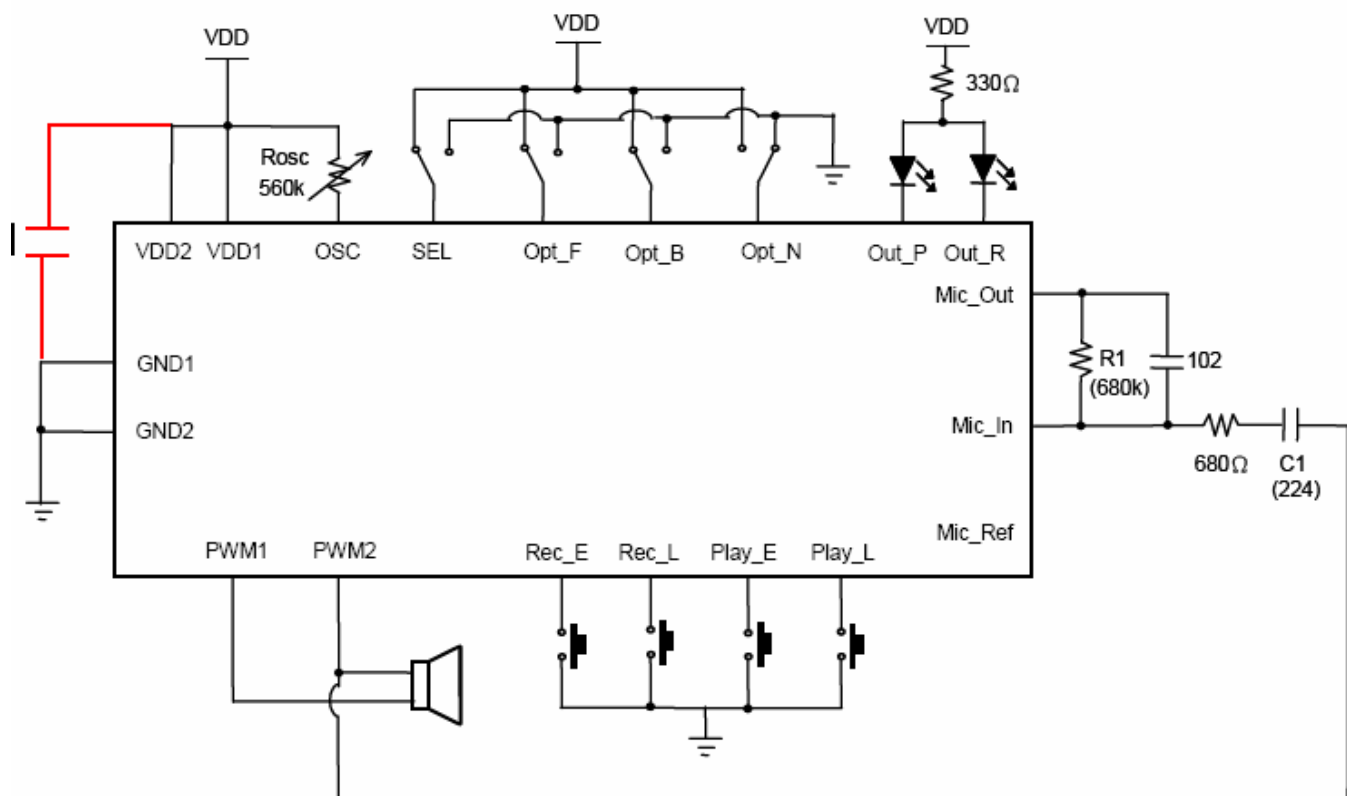


\* R1 is used to control the gain of OP-Amp. A bigger R1 value will lead to larger voice volume. (100K~300K $\Omega$ )

\* R2 is used to match the different microphone. A bigger R2 value will lead to larger voice volume and noise. (2K~4.7K $\Omega$ )

\* C1 is used to control the gain and noise. A bigger C1 value will lead to larger voice volume and noise. (0.033u~0.1uF)

### b. PWM Direct Drive (MIC\_SPK Shared, 2-Ended PWM)



\* R1 is used to control the gain of OP-Amp. A bigger R1 value will lead to larger voice volume. (470K~820K $\Omega$ )

\* C1 is used to control the gain and noise. A bigger C1 value will lead to larger voice volume and noise. (0.1u~0.22uF)

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## Volume Control (MIC\_SPK Shared, 1-Ended PWM)

