

**INTRODUCTION**

The S1A0429A01 is a monolithic integrated circuit designed for Portable FM radios. It consists of an RF input stage, mixer, IF, mute control and loop (earphone drive) Amp. It is suitable for a pocket-size radio.

**FUNCTIONS**

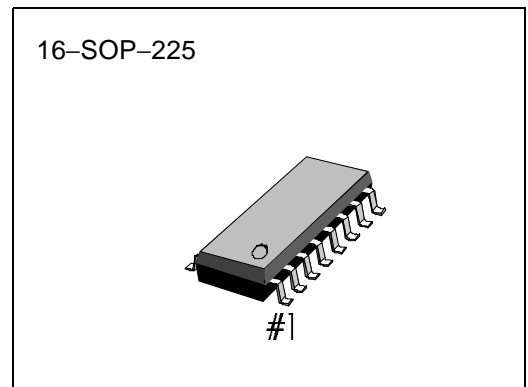
- RF input stage
- Mixer
- Mute control
- Local OSC
- IF Amp
- Earphone drive amp

**FEATURES**

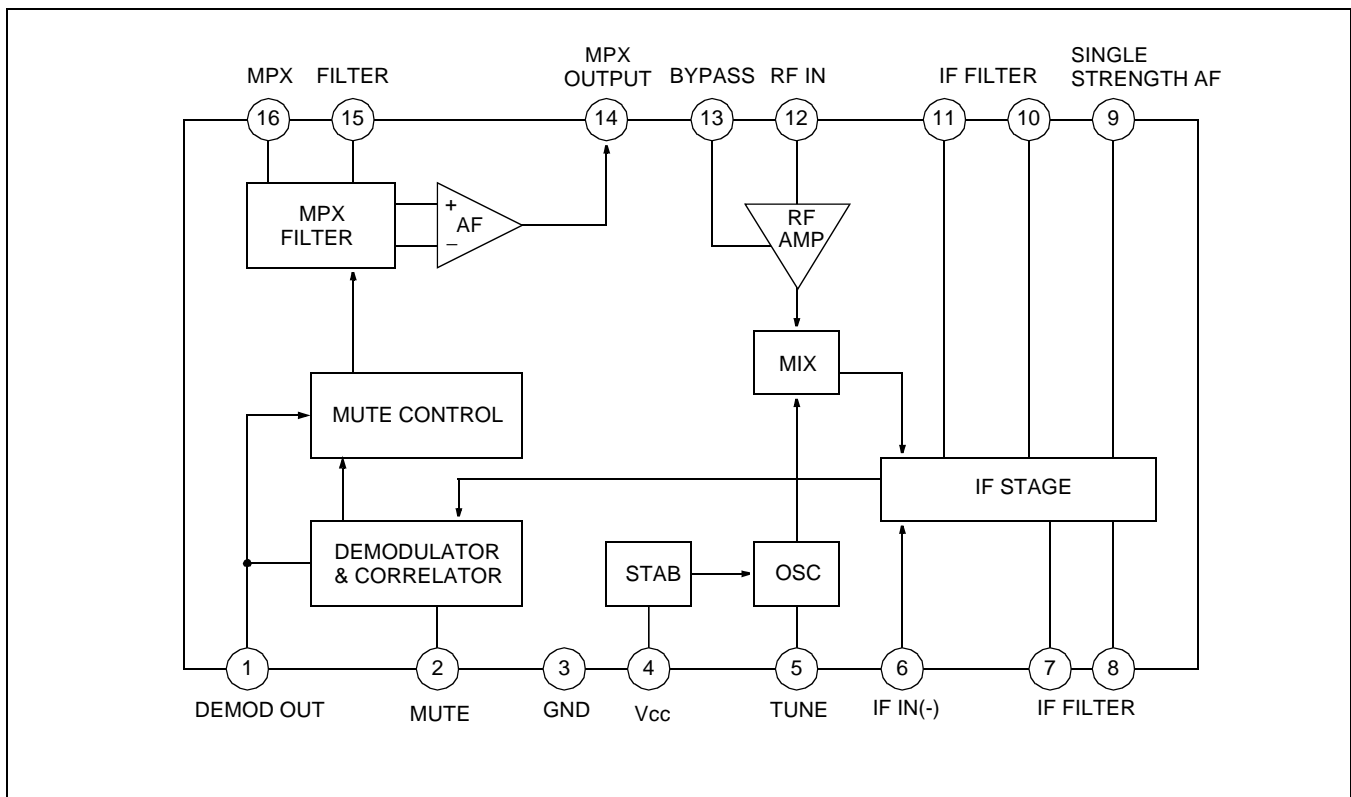
- Minimum number of external parts required
- Single trimmer tuning
- No FM det coil
- FLL IF detect system (76kHz)
- Operating voltage:  $V_{CC} = 1.8V - 6.0V$

**ORDERING INFORMATION**

Device	Package	Operating Temperature
S1A0429A01-S0B0	16-SOP-225	-10°C - + 70°C



## BLOCK DIAGRAM

ABSOLUTE MAXIMUM RATINGS (  $T_a = 25^\circ\text{C}$  )

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	7	V
Oscillator Voltage	$V_{OSC}$	-0.5 - + 0.5	V
Operating Temperature	$T_{OPR}$	-10 - + 70	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 - + 150	$^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{EJA}$	300	K/W

**ELECTRICAL CHARACTERISTICS**MONO CONDITION:  $f = 98\text{MHz}$ ,  $f_m = 1\text{kHz}$ ,  $\Delta f = \pm 22.5\text{kHz}$ ,  $V = 50\text{dB}\mu$ ,  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 3\text{V}$ 

Characteristic		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current		$I_{CCQ}$	$V_I = 0$	–	6.3	–	mA
<b>MONO</b>	Sensitivity	$S_{VI1}$	–3dB: Mute Disable	–	12	–	$\text{dB}\mu$
		$S_{VI2}$	SIN = 26dB: Mute Enable	–	17	–	$\text{dB}\mu$
	Signal to Noise Ratio	S/N1	–	–	60	–	dB
	Total Harmonic Distortion	THD1	$\Delta f = \pm 22.5\text{kHz}$	–	0.7	–	%
		THD2	$\Delta f = \pm 75\text{kHz}$	–	2.3	–	%
	AM Rejection Ratio	AMR	AM: $f_m = 1\text{kHz}$ , $m = 80\%$ FM: $f_m = 1\text{kHz}$ , $\Delta f = 75\text{kHz}$	–	50	–	dB
	Oscillator Voltage	$V_{OSC}$	–	–	250	–	mV
	AFC Range	$\Delta\text{AFC}$	–	–	160	–	kHz
	Mute Range	MR	–	–	120	–	kHz
Band Width	BW	$\Delta\text{VO} = 3\text{dB}$ Pre-Emphasis $t = 5\text{kHz}$	–	10	–	kHz	
AF Output Voltage	$V_{O1}$	–	–	90	–	mV	

TEST CIRCUIT

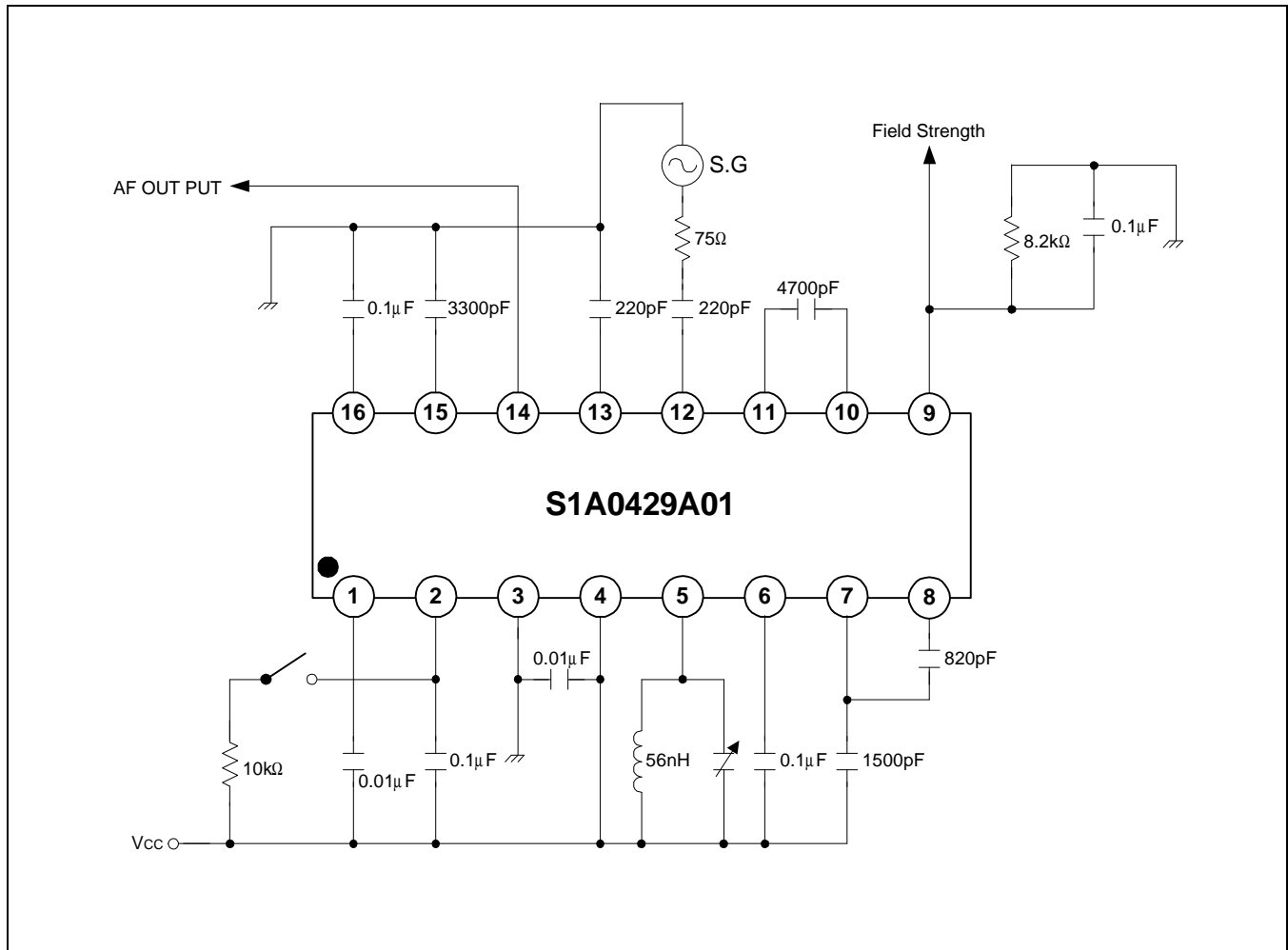


Figure 1. Test Circuit for Mono Operation

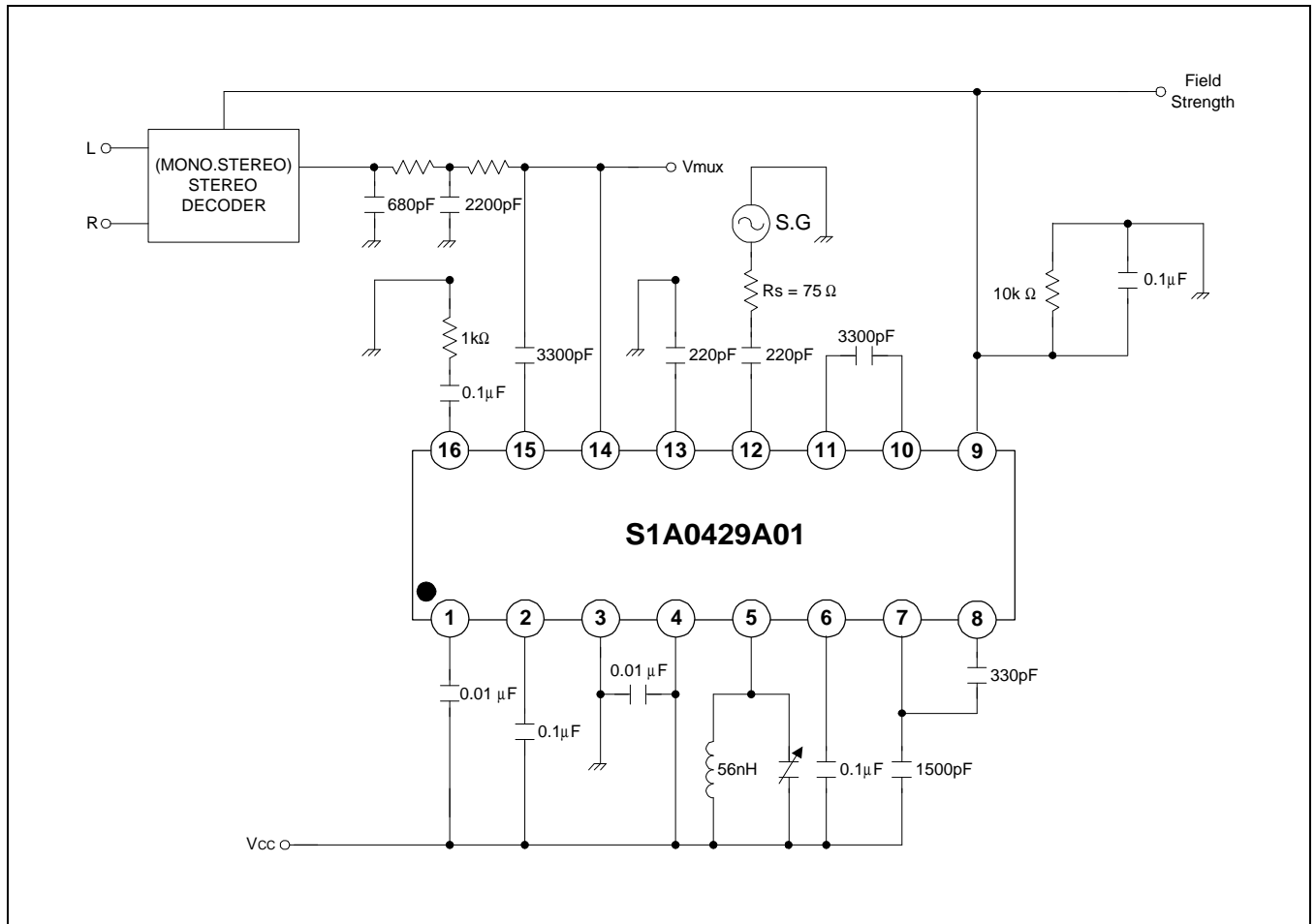


Figure 2. Test Circuit for Stereo Operation

APPLICATION CIRCUIT

