

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

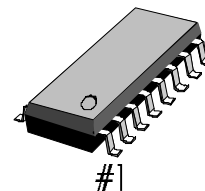
FEATURES

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

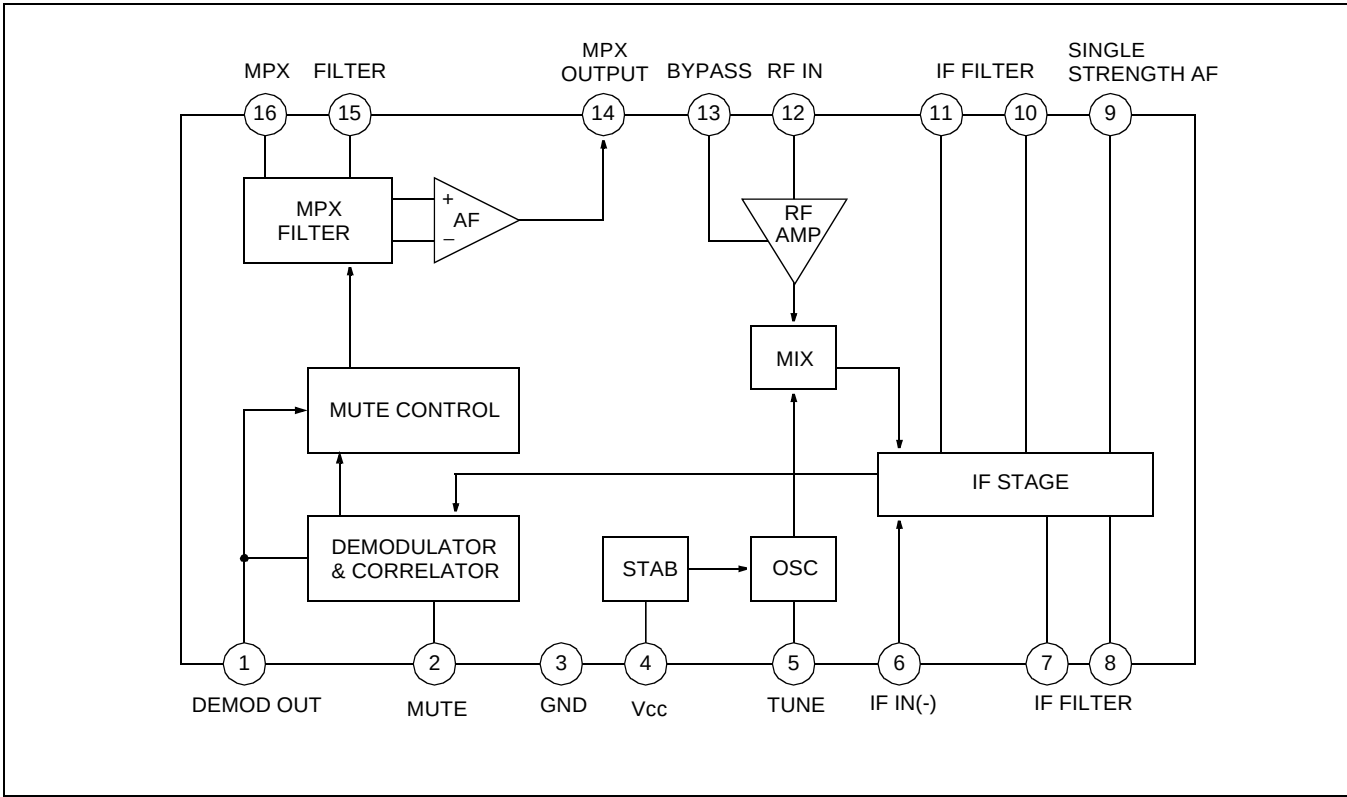
ORDERING INFORMATION

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

16-SOP-225



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°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	°C
Storage Temperature	T _{STG}	-55 - + 150	°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
MONO	Sensitivity	S_{VI1} S_{VI2}	–3dB: Mute Disable SIN = 26dB: Mute Enable	–	12 17	–	$\text{dB}\mu$ $\text{dB}\mu$
	Signal to Noise Ratio	S/N1	–	–	60	–	dB
	Total Harmonic Distortion	THD1 THD2	$\Delta f = \pm 22.5\text{kHz}$ $\Delta f = \pm 75\text{kHz}$	–	0.7 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	ΔAFC	–	–	160	–	kHz
	Mute Range	MR	–	–	120	–	kHz
	Band Width	BW	$\Delta VO = 3\text{dB}$ Pre-Emphasis $t = 5\text{kHz}$	–	10	–	kHz
	AF Output Voltage	V_{O1}	–	–	90	–	mV

TEST CIRCUIT

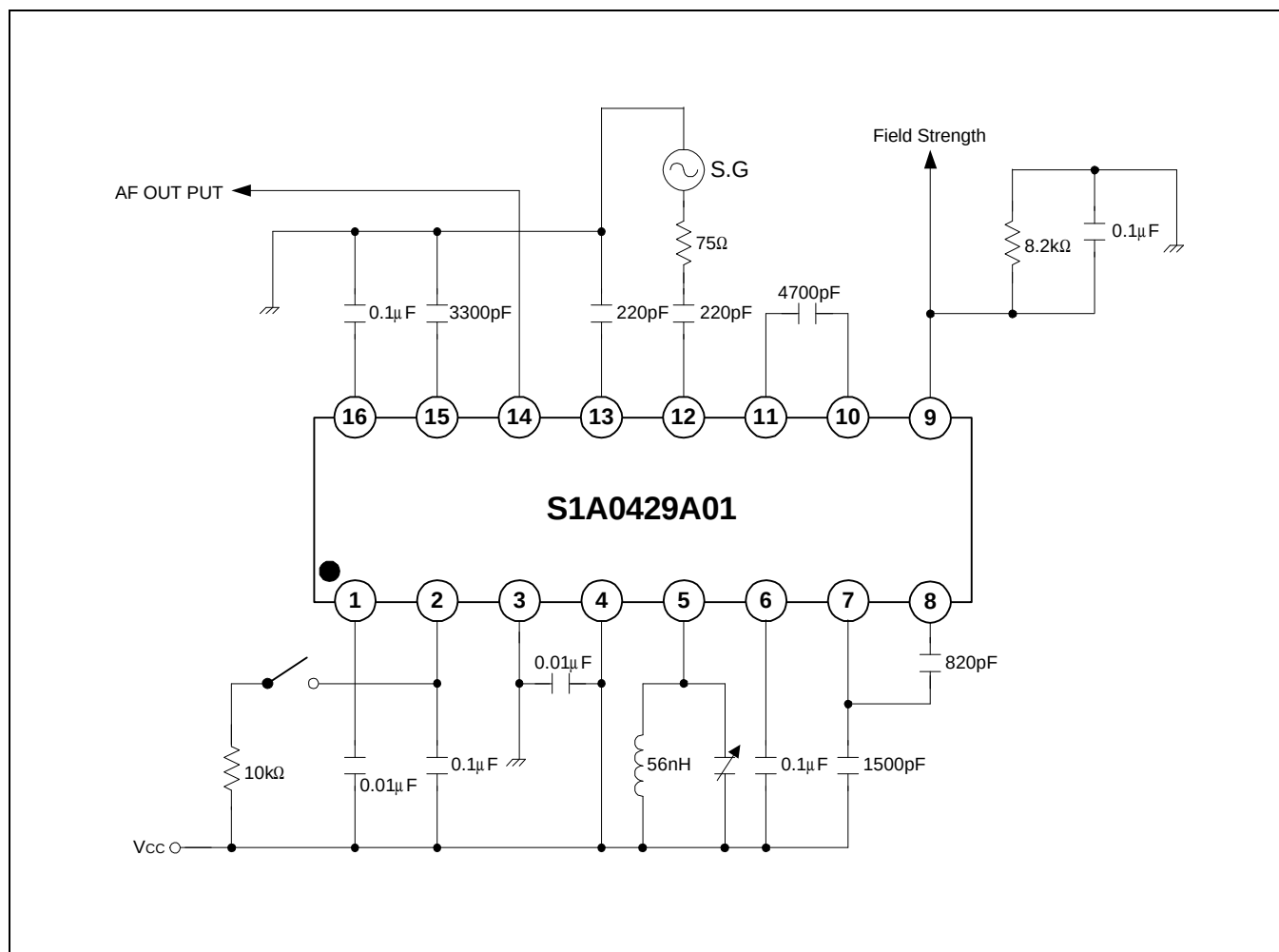


Figure 1. Test Circuit for Mono Operation

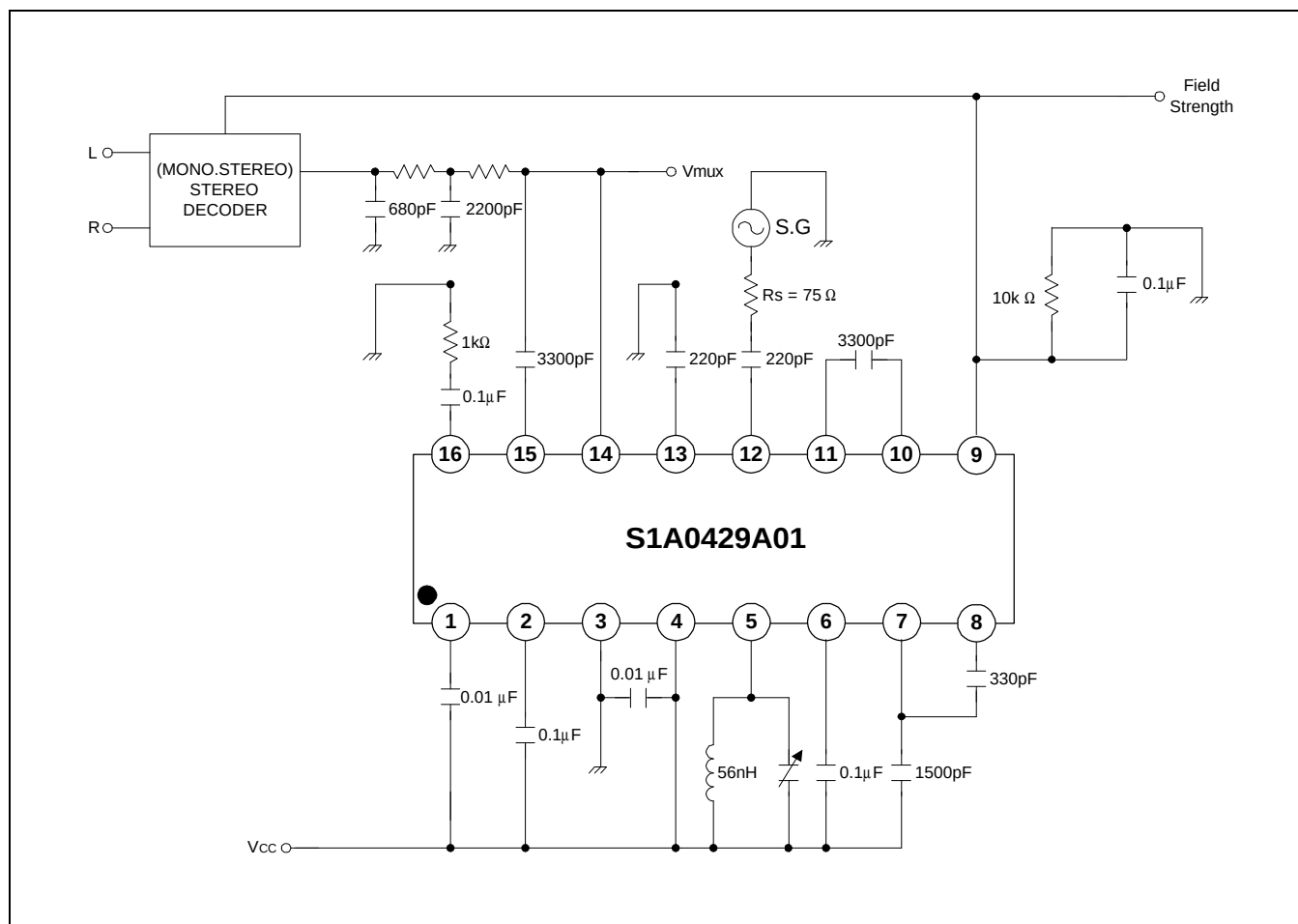


Figure 2. Test Circuit for Stereo Operation

APPLICATION CIRCUIT

