

**INTRODUCTION**

The KA22429D 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**

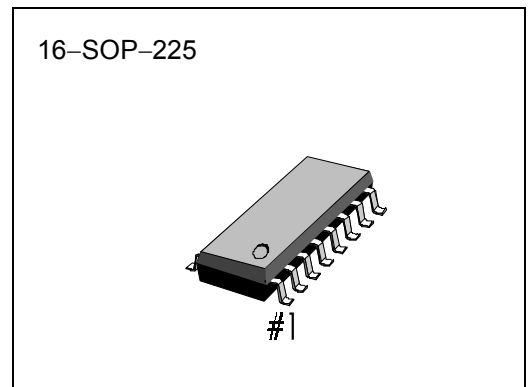
- RF input stage
- Mixer
- Mute control
- Local OSC
- IF Amp
- Earphone drive amp

**FEATURES**

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

**ORDERING INFORMATION**

Device	Package	Operating Temperature
KA22429D	16-SOP-225	-10°C ~ + 70°C



**BLOCK DIAGRAM**

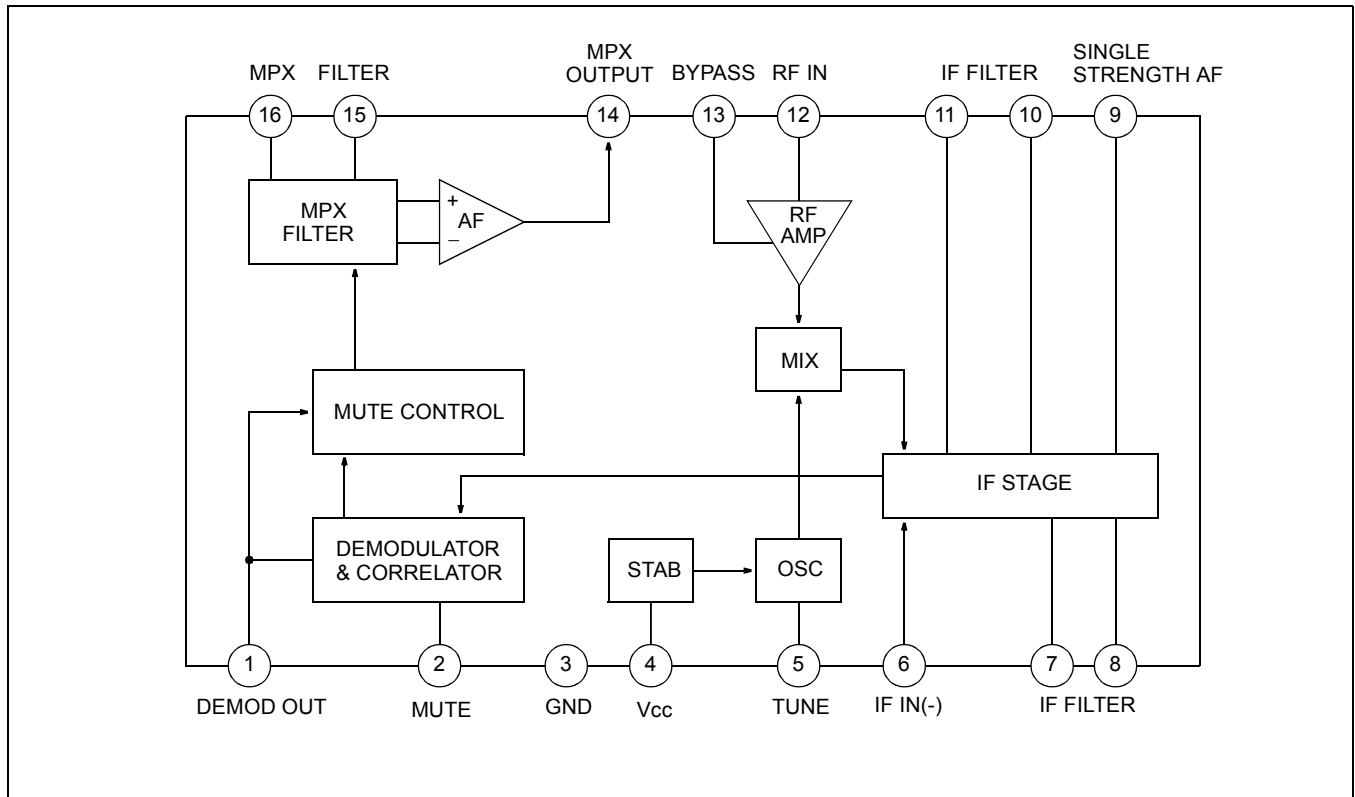


Figure 1.

**ABSOLUTE MAXIMUM RATINGS ( Ta = 25°C )**

Characteristic	Symbol	Value	Unit
Supply Voltage	V <sub>CC</sub>	7	V
Oscillator Voltage	V <sub>OSC</sub>	-0.5 ~ + 0.5	V
Operating Temperature	T <sub>OPR</sub>	-10 ~ + 70	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ + 150	°C
Thermal Resistance Junction to Ambient	R <sub>EJA</sub>	300	K/W

**ELECTRICAL CHARACTERISTICS**

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

STEREO CONDITION:  $f = 98\text{MHz}$ ,  $f_m = 1\text{kHz}$ ,  $\Delta f = \pm 22.5\text{kHz}$ ,  $V = 60\text{dB}\mu$  (Modulated with pilot  $\Delta f = 6.75\text{kHz}$ )

Characteristic		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current		$I_{CCQ}$	$V_I = 0$	–	6.3	–	mA
MONO	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	
AM Output Voltage	$V_{O1}$	–	–	90	–	mV	
STEREO	Sensitivity	$S_{VI3}$	S/N = 46dB	–	49	–	$\text{dB}\mu$
	Signal to Noise Ratio	S/N <sub>2</sub>	–	–	53	–	dB
	Channel Separation	CS	–	–	20	–	dB
	AF Output Voltage	$V_{O2}$	–	–	80	–	mV

TEST CIRCUIT

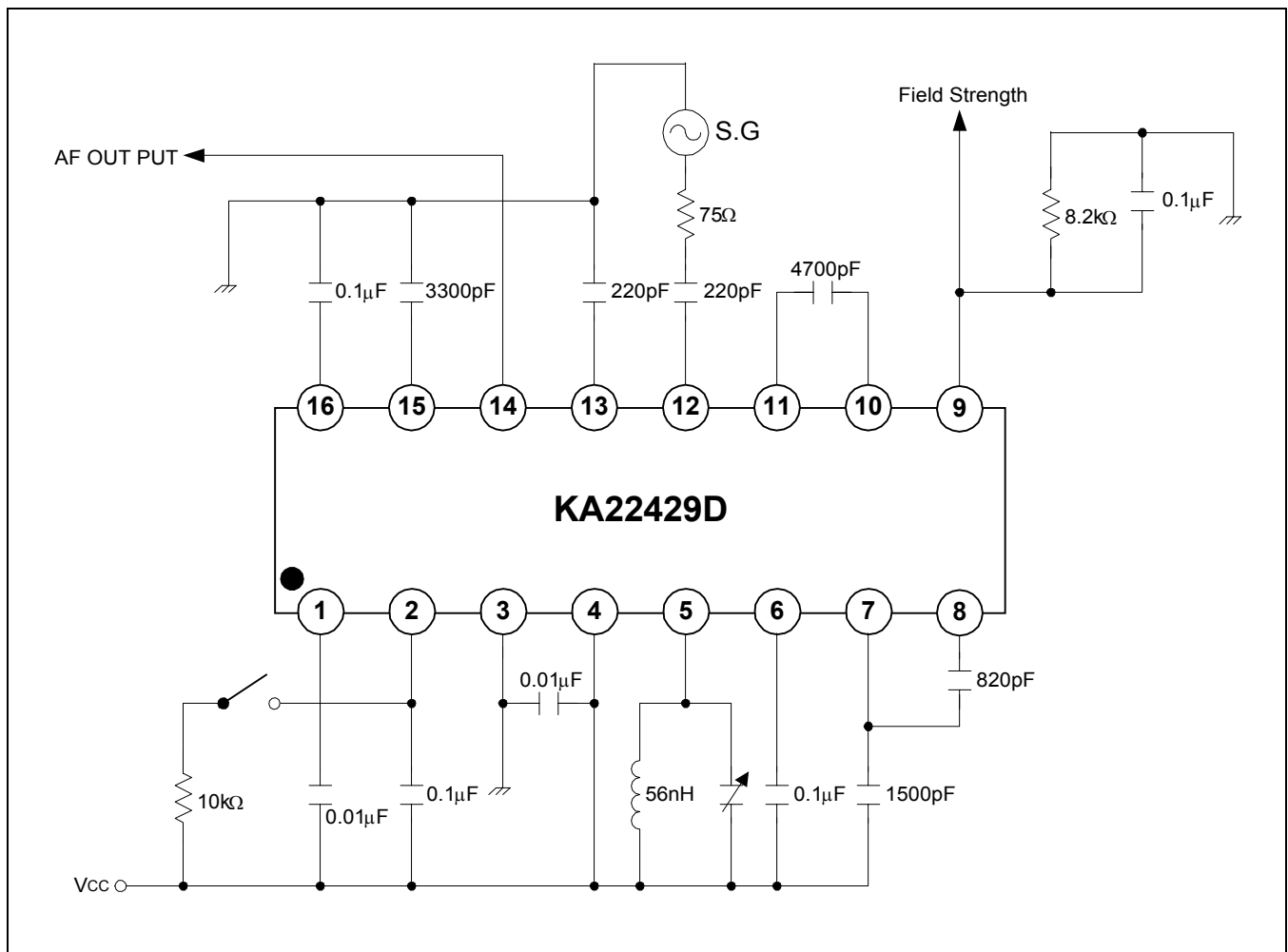


Figure 2. Test Circuit for Mono Operation

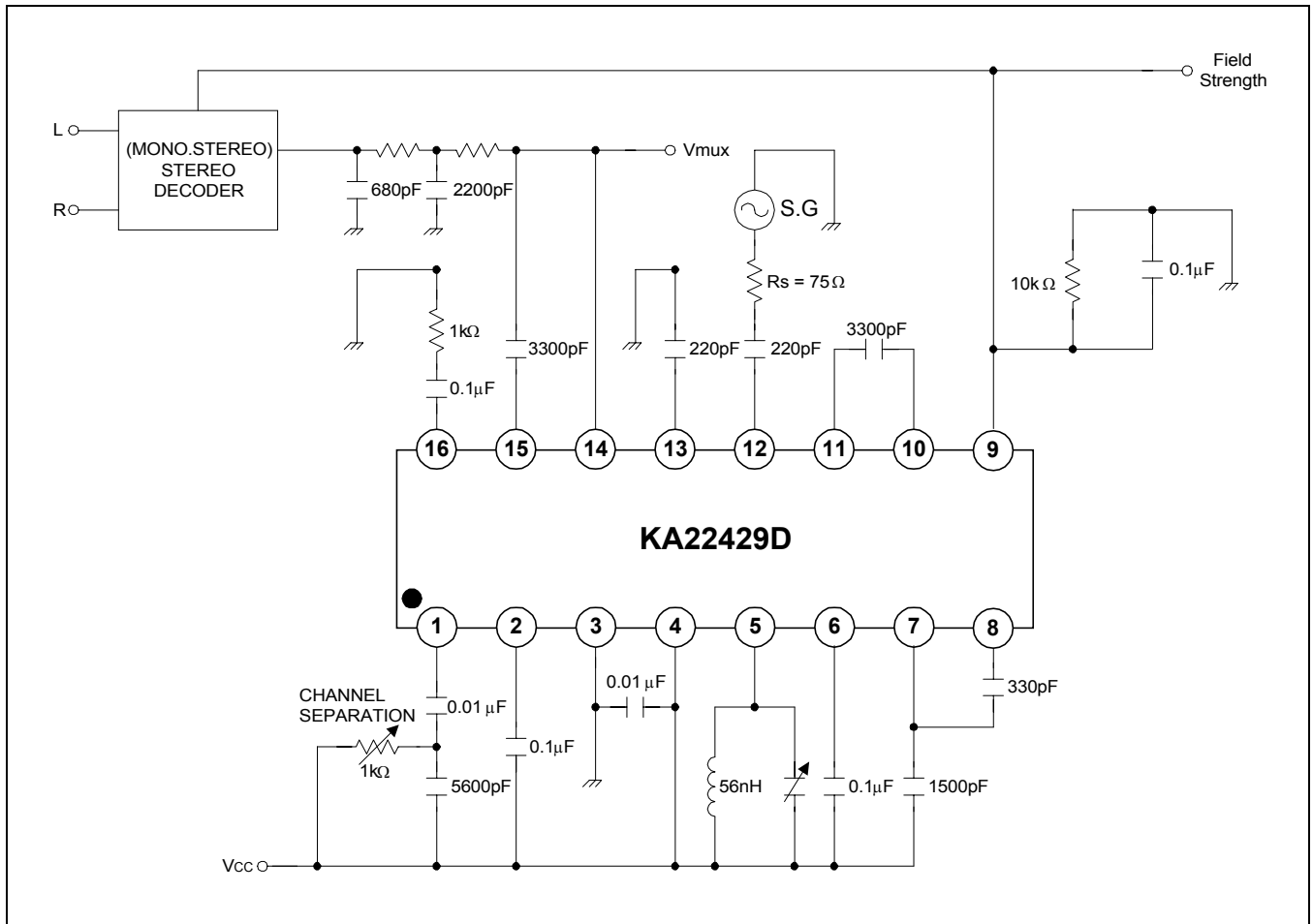


Figure 3. Test Circuit for Stereo Operation

APPLICATION CIRCUIT

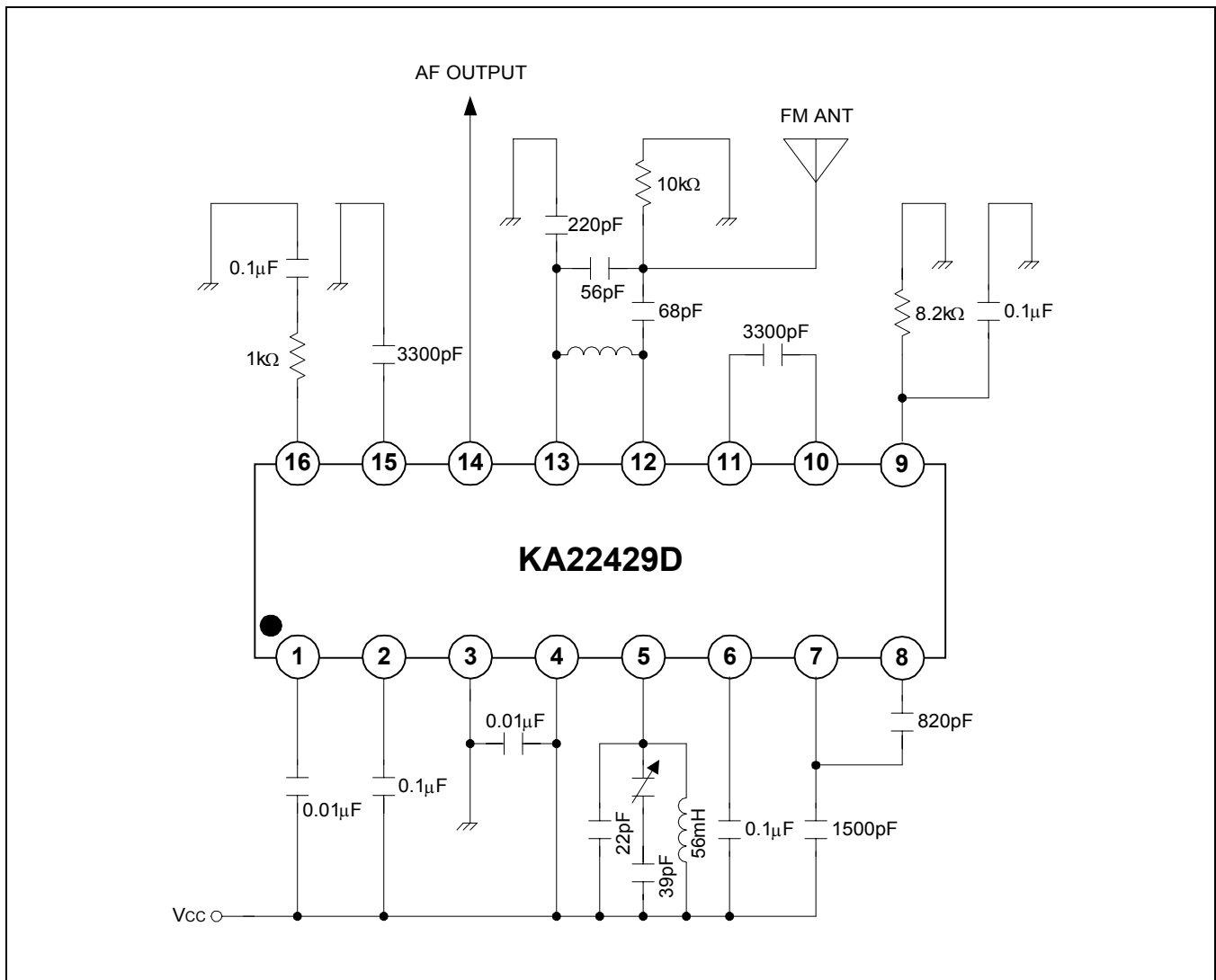


Figure 4.