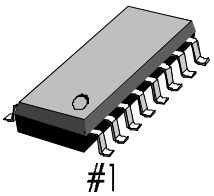
KA22429 FM 1 CHIP RADIO

INTRODUCTION

The KA22429 is a monolithic integrated circuit designed for Portable FM radio.
It is consisting of RF input stage, Mixer, IF, Mute control and Loop (earphone drive) AMP.
It is suitable for a pocket-size radio.

16-SOP-225



FUNCTIONS

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

FEATURES

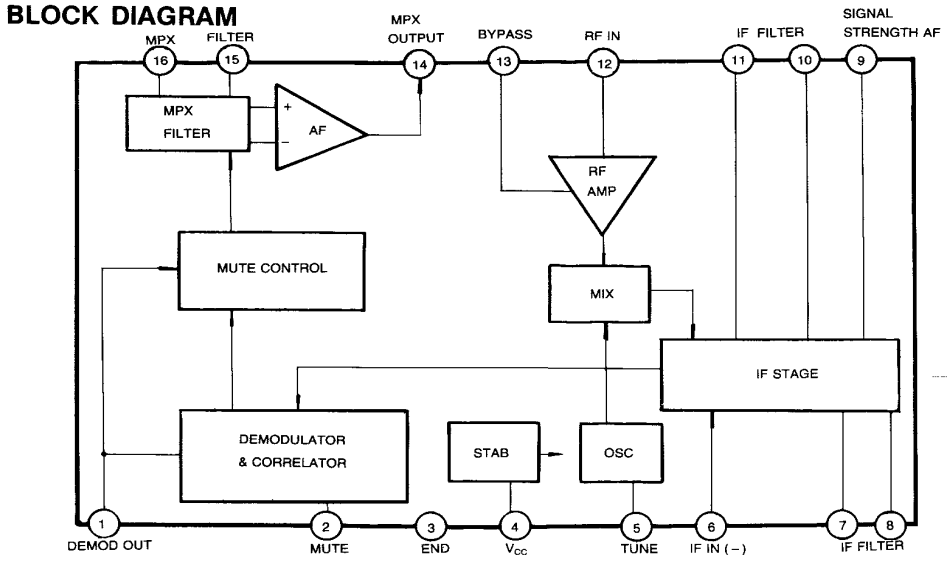
- Minimum number of external parts required
- **It** is able to a single trimmer tuning
- No FM det coil
- It is FLL IF detect system (76KHz)
- Operating voltage: V_{CC} =1.8V ~ 6.0V

ORDERING IN FORMATION

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

Fig. 1.

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 CHARACTERISTIC

MONO CONDITION: f = 98MHz, f_m = 1KHz, Δf = ±22.5KHz, V = 50dBμ, Ta = 25°C, V_{CC} = 3V
STEREO CONDITION: f = 98MHz, f_m = 1KHz, Δf = ±22.5KHz, V = 60dBμ (Modulated with pilot Δf = ±6.75KHz)

Characteristic		Symbol	Test Condition	Min	Typ	Max	Unit
Quiescent Circuit Current		I_{CCQ}	VI = 0		6.3		mA
MONO	Sensitivity	S_{VI1}	-3dB: Mute Disable		12		dBμ
		S_{VI2}	SIN = 26dB: Mute Enable		17		dBμ
	Signal to Nois Ratio	S/N_1			60		dB
	Total Harmonic Distortion	THD_1	Δf = ±22.5Khz		0.7		%
		THD_2	Δf = ±75HKz		2.3		%
	AM Rejection Ratio	AMR	AM: fm = 1KHz, m = 80% FM: fm = 1Khz, Δf = 75KHz		50		dB
	Oscillator Voltage	V_{OSC}			250		mV
	AFC Range	ΔAFC			160		KHz
	Mute Range	MR			120		KHz
	Band Width	BW	ΔV_O = 3dB Pre-Emphasis t = 5KHz		10		KHz
	AM Output Voltage	V_{O1}			90		μV
STEREO	Sensitivity	S_{VI3}	S/N = 46dB		49		dBμ
	Signal to Noise Ratio	S/N_2			53		dB
	Channel Separation	CS			20		dB
	AF Output Voltage	V_{O2}			80		mV

TEST CIRCUIT

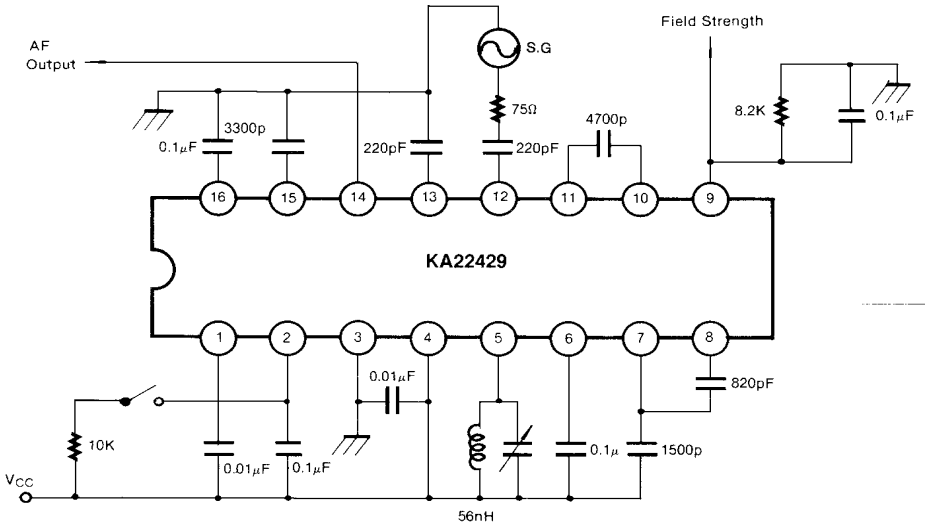


Fig. 2 Test Circuit for Mono Operation

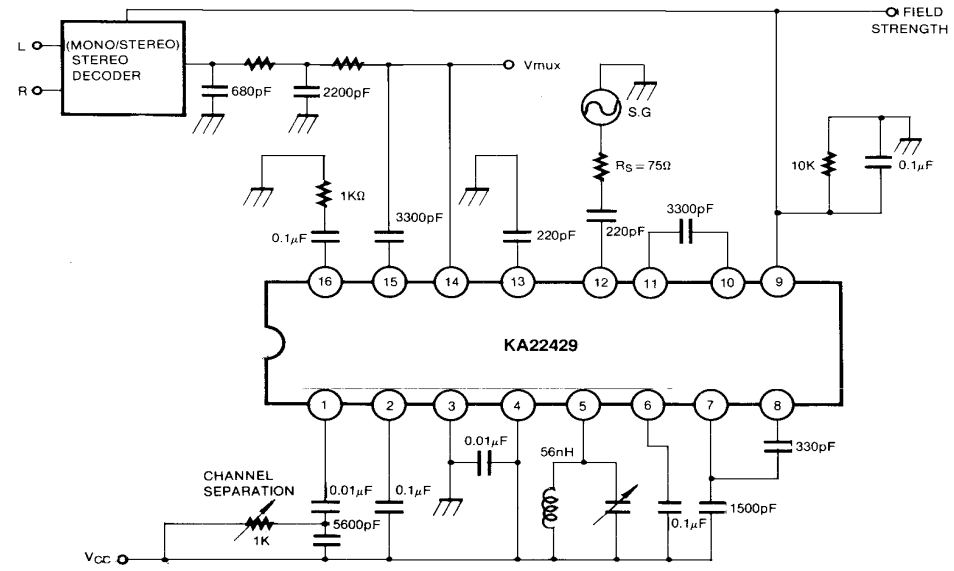


Fig. 3 Test Circuit for Stereo Operation

APPLICATION CIRCUIT

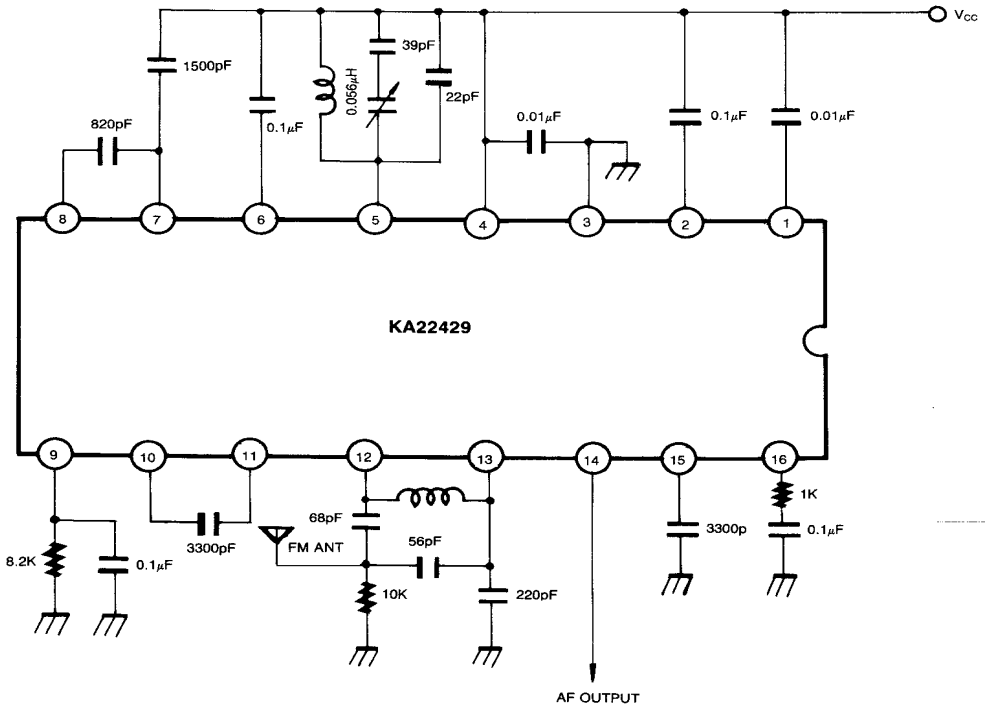


Fig. 4.