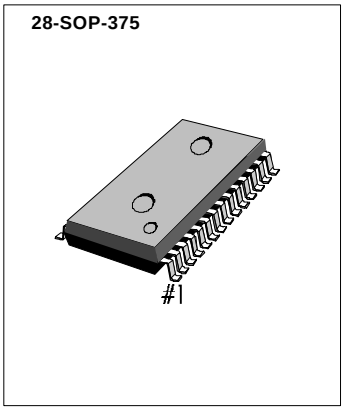
KA22425B AM/FM 1 CHIP RADIO

INTROCUCTION

The KA22425B is a monolithic integrated circuit designed for radio-cassette tape recorders, clock radios and headphone radios.



FUNCTIONS

- AM/FM RF AMP
- Local OSC
- AM AGO Control
- FM AFO Control
- Audio Power AMP
- Tuning Indicator
- DC Volume
- AM/FM IF AMP
- FM Quadrature DET
- AM DET

FEATURES

- Built-in AM/FM Switching Circuit
- Wide operating supply voltage: V_{CC} = 2 ~ 8.5 V
- Low current consumption (V_{CC} = 3V)
  FM: I_{CCQ} = 7.0mA (tvP)
  AM: I_{CCQ} = 3.5mA (typ)
- High Power Audio Amplitier: 0.5W(typ) at V_{CC} = 6V, RL=8Ω, THD = 10%

ORDERING INFORMATION

Device	Package	Operating Temperature
KA22425B	28-SOP-375	-20 ~ +70°C

BLOCK DIAGRAM

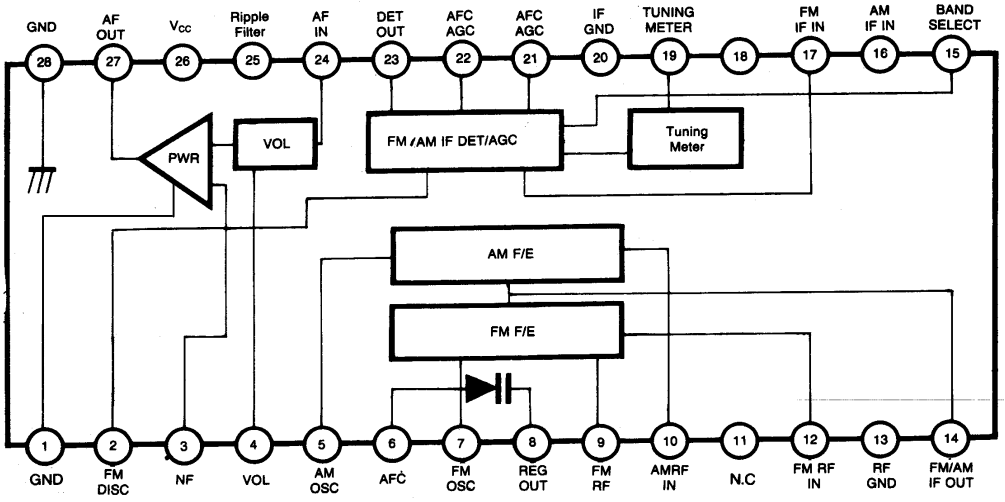


Fig1.

ABSOLUTE MAXIMUM RATINGS (Ta 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	9	V
Power Dissipation	P_D	1000	mW
Operating Temperature	T_{OPR}	-20 ~ +70	°C
Storage Temperature	T_{STG}	-40 ~ +125	°C

ELECTRICAL CHARACTERISTICS

(V_{CC} = 6V, Ta = 25°C, FM; Δf = 22.5KHz, fm = 1KHz, AM; 30% Mod unless otherwise specified)

	Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
FM	Quiescent Circuit Current	I_{CCQ}	V_I = 0		7.0	14.0	mA
	F/E Voltage Gain	G_{V1V}	V_I(1) = 40dBμ , f = 100MHz, Δf = 0	32	39	46	dB
	Detect Output Gain	V_O(1)	V_I(3) = 90dBμ , f = 10.7 MHz	-26	-20	-14	dBm
	IF-3dB Sensitivity	$V_{I\ (LIM)}$	V_O(V_I3) = 90dBμ -3dB, f = 10.7 MHz		24	32	dBμ
	Total Harmonic Distortion	THD_1	V_I(3) = 90dBμ , f = 10.7MHz (Δf = 75KHz)		0.3	2.0	%
	Meter Drive Current	I_M(1)	V_I(3) = 60dBμ , f = 10.7MHz	1.8	3.5	7.0	mA
AM	Quiescent Circuit Current	I_{CCQ}(2)	V_I = 0		3.5	10.0	mA
	F/E Voltage Gain	G_V(2)	V_I(2) = 60dBμ , f = 1660KHz, m=0%	15	22	29	dB
	IF Voltage Gain	G_V(3)	V_O(3) = -34dBm, f = 455kHz	14	20	27	dBμ
	AM Detect Output Voltage	V_O(2)	V_I(3) = 85dBμ , f = 455KHz	-26	-20	-14	dBm
	Total Harmonic Distortion	THD_2	V_I(2) = 95dBμ , f = 1660KHz, V_{CC}=7.8V		0.6	2.0	%
	Meter Drive Current	I_M(2)	V_I(3) = 85dBμ , f = 455KHz	1.3	3.0	7.0	mA
AF	Closed Loop Voltage Gain	G_V(4)	V_O(4) = 0dBm, f = 1KHz	27	31.5	36	dB
	Total Harmonic Distortion	THD_3	P_O = 50mW, f = 1KHz		0.3	2.5	%
	Output Power	P_O	R_L = 8Ω, THD = 10%, f = 1KHz	0.4	0.5		W
	Mute Level	M_L	P_O = mW, $V_{1(4)}$ = 30dBm 1KHz, $V_{1(3)}$ = FF	8	15	22	dB

APPLICATION CIRCUIT

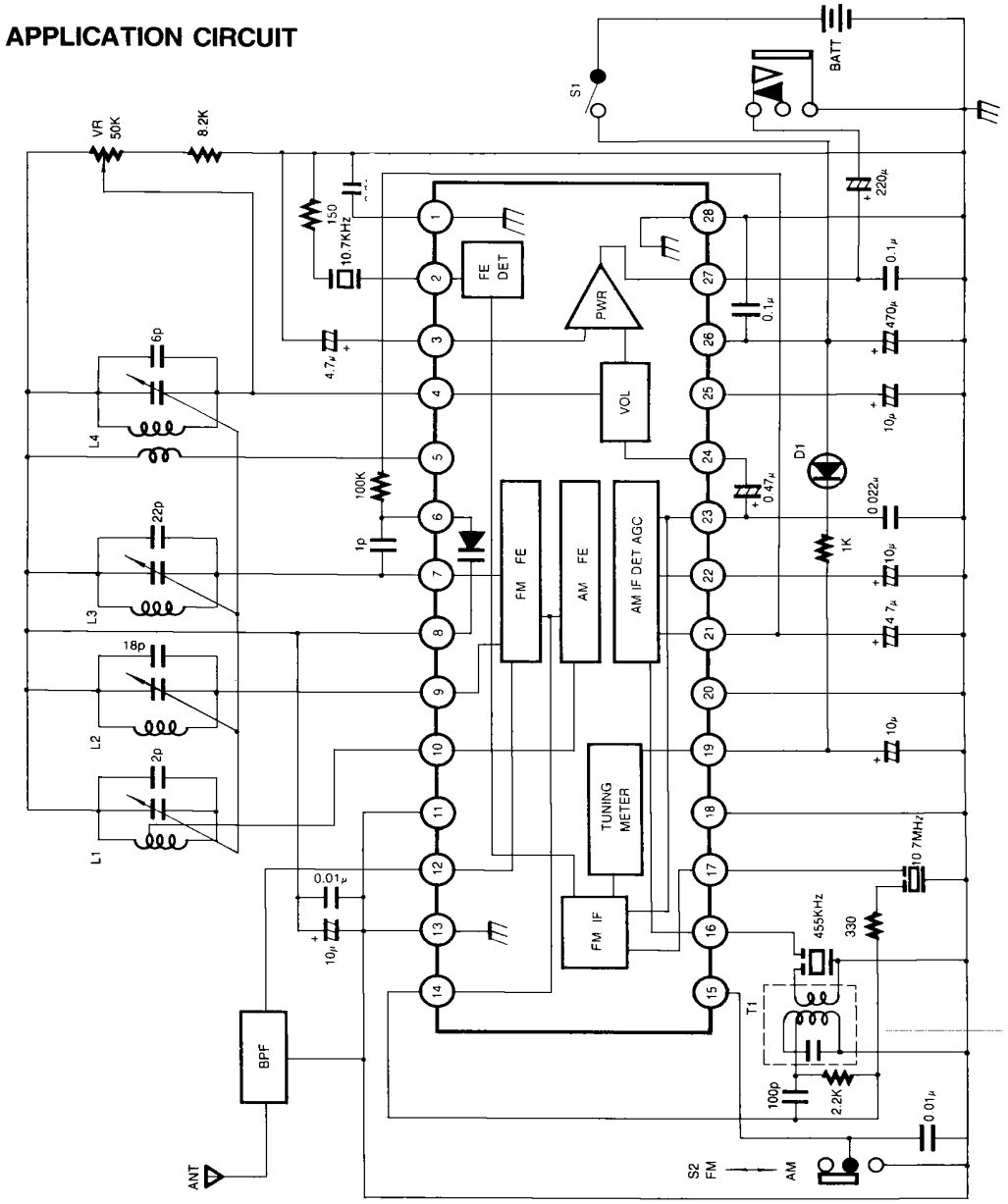


Fig. 3