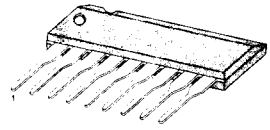
FM IF SYSTEM FOR CAR RADIOS

The KA2244 is a monolithic integrated circuit consisting of FM IF amplifier, detector, muting circuit and signal meter driver. It is suitable for car radios.

9 SIP



FUNCTIONS

- 3-stage IF amplifiers.
- Peak detector.
- Muting circuit.
- Signal meter drive circuit.

FEATURES

- **Suitable for FM car radios.**
- **Wice operating supply voltage range: V_{CC} = 8V ~ 15V**
- **High detector output voltage (V_O = 500mV, Typ).**
- **Variable muting level.**
- **Muting off by Pin 4 open.**
- **Simplified single coil tuning.**
- **Low distortion (THD=0.1%; Typ).**
- **Minimum number of external parts required.**

ORDERING INFORMATION

Device	Package	Operating Temperature
KA2244	9 SIP	-20°C ~ +70°C

BLOCK DIAGRAM

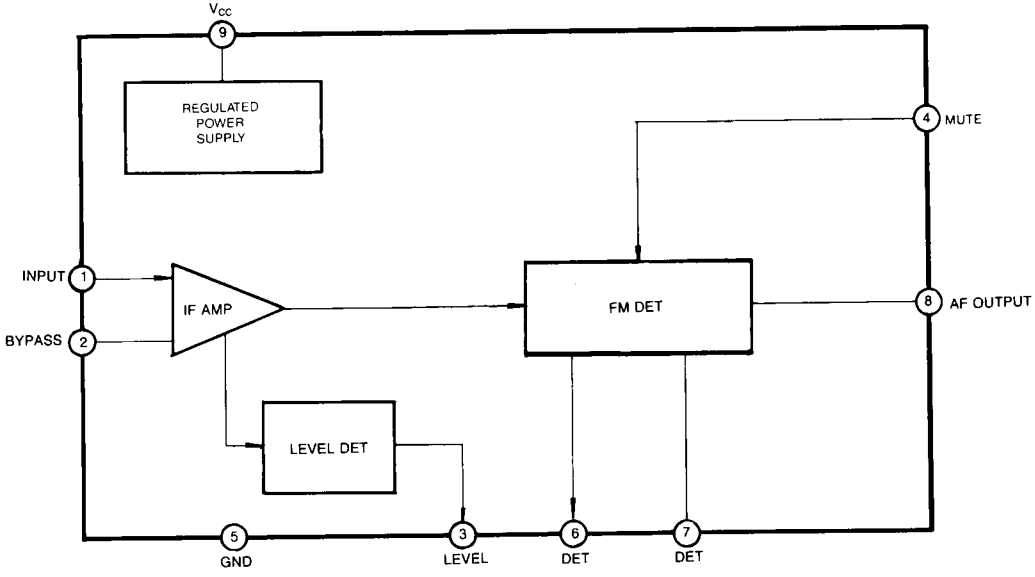


Fig. 1

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Input Voltage	V_I	0.7	V
Power Dissipation	P_D	750	mW
Operating Temperature	T_{OPR}	−20 ~ +70	°C
Storage Temperature	T_{STG}	−40 ~ +125	°C

*: Derated above Ta = 25°C in the proportion of 4mW/°C

ELECTRICAL CHARACTERISTICS

(T_a = 25°C, V_{CC} = 12V, f = 10.7MHz, fm = 400Hz, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CCQ}	V_I = 0	10	14	18	mA
−3dB Limiting Sensitivity	$V_{I(LIM)}$	−3dB point from V_O (V_I = 80dBμ, Δf = ±75KHz)		50	55	dBμ
AM Rejection Ratio	AMR	FM: Δf = ±75KHz dev AM: 30% Mod, fm = 1KHz V_I = 80dBμ		50		dB
Detector Output Voltage	$V_{O(DET)}$	Δf = ±75KHz dev V_I = 80dBμ	300	500	700	mV
Total Harmonic Distortion	THD	Δf = ±22.5KHz dev V_I = 80dBμ		0.1		%
Signal to Noise Ratio	S/N	Δf = ±75KHz dev V_I = 80dBμ		75		dB
Muting Attenuation	ATT_{MUTE}	Δf = ±75KHz dev V_I = 80dBμ, V_4 = 0		70		dB
Meter Driver Voltage	V_M	V_I = 110dBμ		4.0		V

TEST CIRCUIT

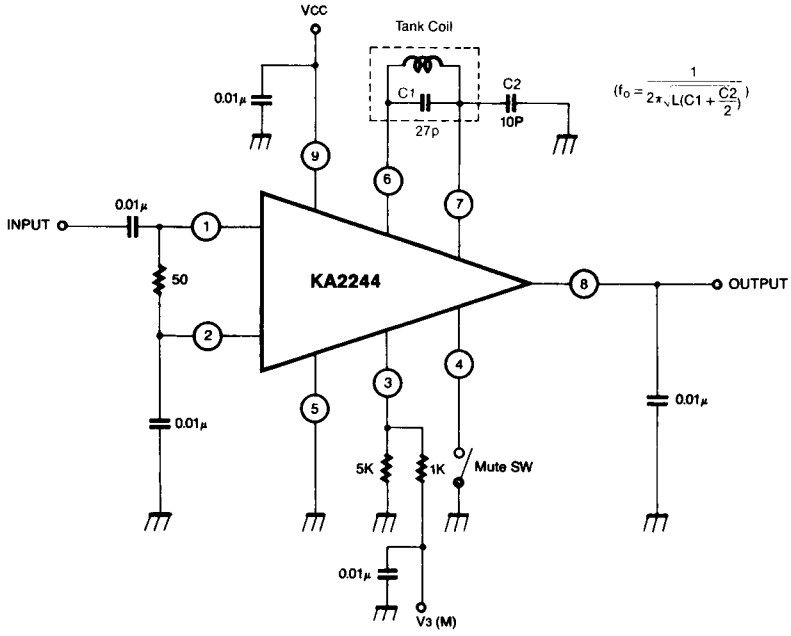
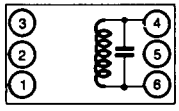


Fig. 2

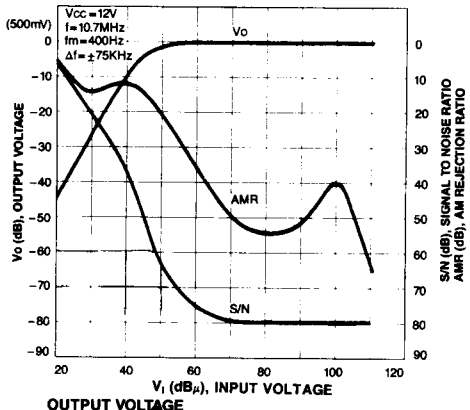
COIL SPECIFICATIONS



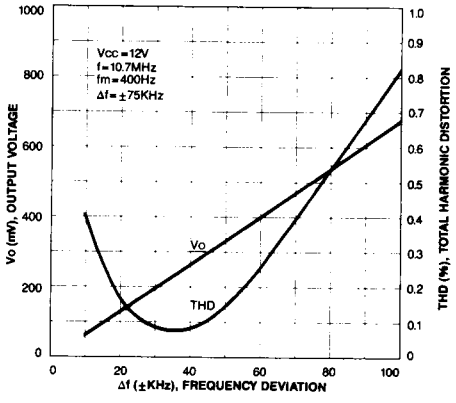
C_O (pF)	f (MHz)	Q_O (%)	TURNS		
			4-6		
27	10.7	150	18		

Seoul Jupa SJ-59JG-045 0.1mmϕ UEW

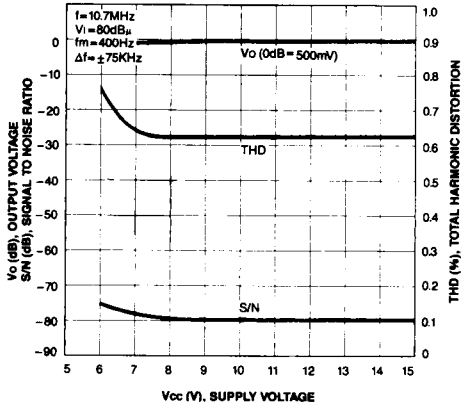
OUTPUT VOLTAGE
SIGNAL TO NOISE RATIO — INPUT VOLTAGE
AM REJECTION RATIO



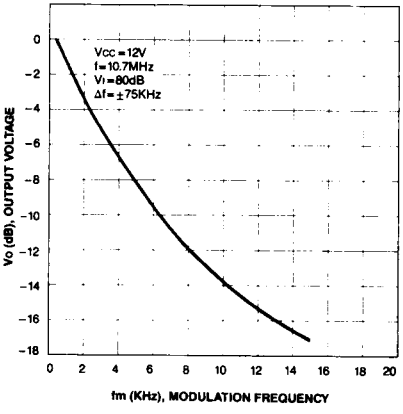
OUTPUT VOLTAGE,
TOTAL HARMONIC DISTORTION —FREQUENCY DEVIATION



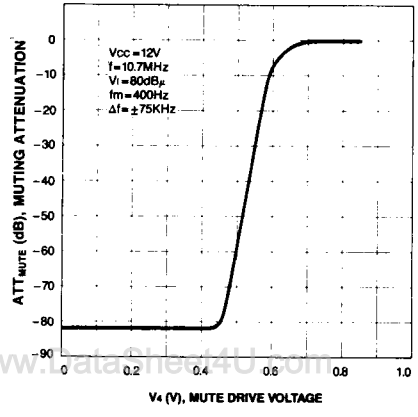
OUTPUT VOLTAGE
TOTAL HARMONIC DISTORTION —SUPPLY VOLTAGE
SIGNAL TO NOISE RATIO



OUTPUT VOLTAGE-MODULATION FREQUENCY



MUTING ATTENUATION-MUTE DRIVE VOLTAGE



OUTPUT DC VOLTAGE-INPUT FREQUENCY