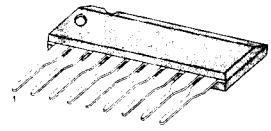
## FM IF SYSTEM FOR CAR RADIOS

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

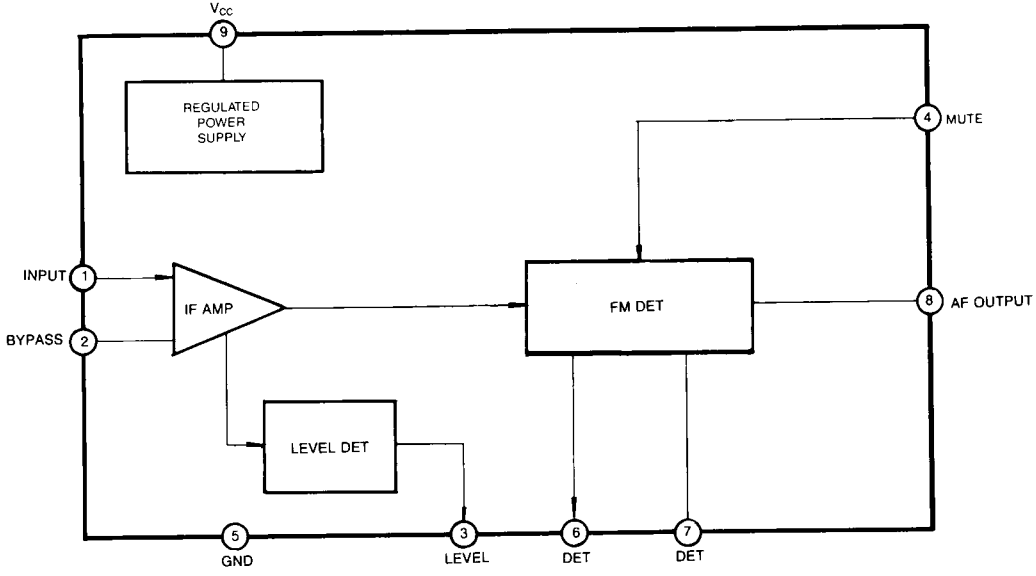



**Fig. 1**

## 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<br>AM: 30% Mod, fm = 1KHz<br>$V_I$ = 80dBμ | | 50 | | dB |
| Detector Output Voltage | $V_{O(DET)}$ | Δf = ±75KHz dev<br>$V_I$ = 80dBμ | 300 | 500 | 700 | mV |
| Total Harmonic Distortion | THD | Δf = ±22.5KHz dev<br>$V_I$ = 80dBμ | | 0.1 | | % |
| Signal to Noise Ratio | S/N | Δf = ±75KHz dev<br>$V_I$ = 80dBμ | | 75 | | dB |
| Muting Attenuation | $ATT_{MUTE}$ | Δf = ±75KHz dev<br>$V_I$ = 80dBμ, $V_4$ = 0 | | 70 | | dB |
| Meter Driver Voltage | $V_M$ | $V_I$ = 110dBμ | | 4.0 | | V |

## TEST CIRCUIT

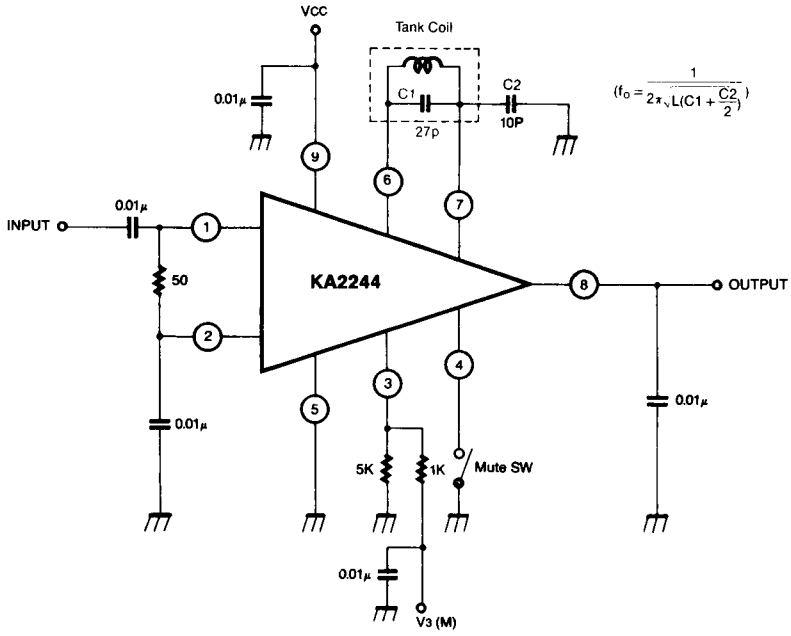
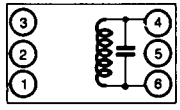



Fig. 2

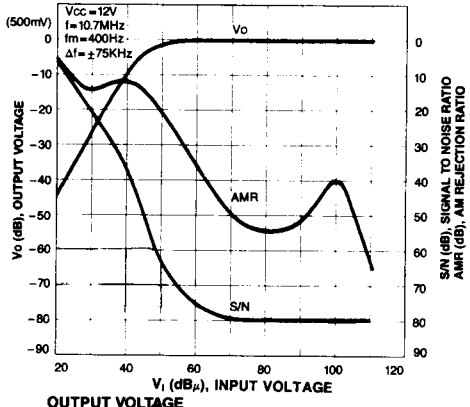
## COIL SPECIFICATIONS



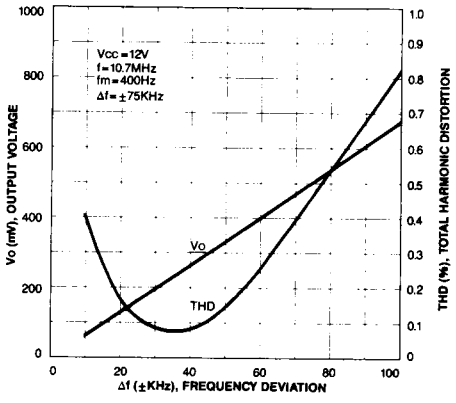

| $C_o$ (pF) | f (MHz) | $Q_o$ (%) | TURNS | | |
|---|---|---|---|---|---|
| | | | 4-6 | | |
| 27 | 10.7 | 150 | 18 | | |

Seoul Jupa SJ-59JG-045 0.1mmϕ UEW

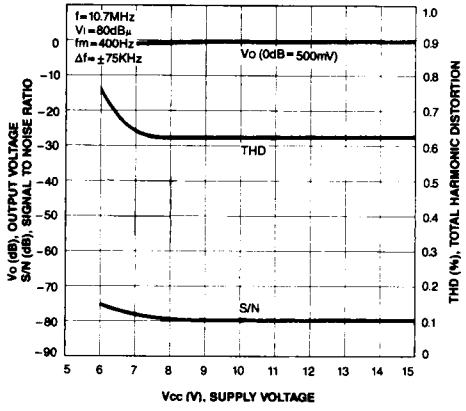
OUTPUT VOLTAGE
SIGNAL TO NOISE RATIO — INPUT VOLTAGE
AM REJECTION RATIO



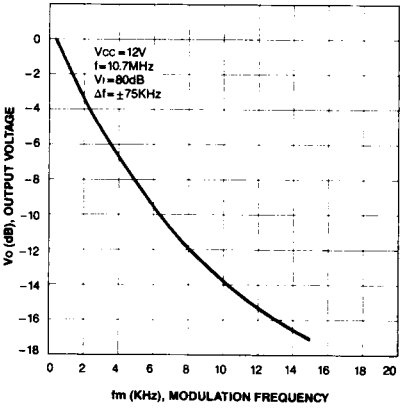

OUTPUT VOLTAGE ,
TOTAL HARMONIC DISTORTION —FREQUENCY DEVIATION



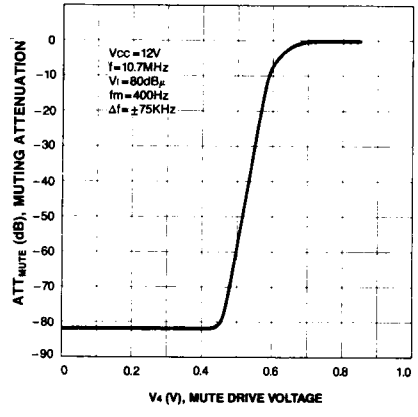

OUTPUT VOLTAGE
TOTAL HARMONIC DISTORTION —SUPPLY VOLTAGE
SIGNAL TO NOISE RATIO




OUTPUT VOLTAGE-MODULATION FREQUENCY




MUTING ATTENUATION-MUTE DRIVE VOLTAGE




OUTPUT DC VOLTAGE-INPUT FREQUENCY