

## FM IF SYSTEM FOR CAR RADIOS

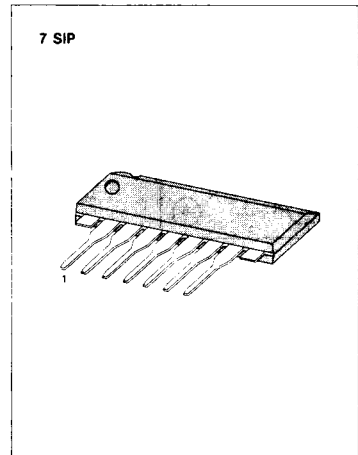
The KA2245 is a monolithic integrated circuit consisting of an FM IF amplifier and detector. It is suitable for car radios.

## FUNCTIONS

- 3-stage IF amplifier.
- Peak detector.

## FEATURES

- Suitable for FM car radios.
- Wide operating supply voltage range:  $V_{CC} = 8V \sim 14V$ .
- High detector output voltage ( $V_o = 500mV$ , Typ).
- Excellent AM rejection:  $AMR = 50dB$  (Typ).
- High sensitivity:  $V_{1(LIM)} = 50dB\mu V$  (Typ).
- Simplified single coil tuning.
- Low distortion ( $THD = 0.1\%$ : Typ).
- Minimum number of external parts required.



## ORDERING INFORMATION

Device	Package	Operating Temperature
KA2245	7 SIP	$-20^{\circ}C \sim +70^{\circ}C$

## BLOCK DIAGRAM

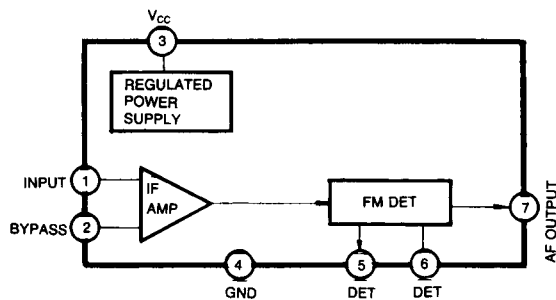


Fig. 1

ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V <sub>CC</sub>	15	V
Input Voltage	V <sub>I</sub>	0.7	V
Power Dissipation	P <sub>D</sub>	400	mW
Operating Temperature	T <sub>OPR</sub>	- 20 ~ + 70	°C
Storage Temperature	T <sub>STG</sub>	- 40 ~ + 125	°C

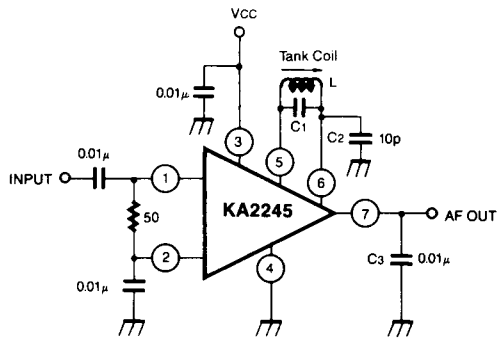
\*: Derated above T<sub>a</sub>=25°C in the proportion of 4mW/°C

ELECTRICAL CHARACTERISTICS

(T<sub>a</sub> = 25°C, V<sub>CC</sub> = 12V, f = 10.7MHz, f<sub>m</sub> = 400Hz)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I <sub>CCO</sub>	V <sub>I</sub> = 0	8	12	15	mA
- 3dB Limiting Sensitivity	V <sub>I(LIM)</sub>	-3dB point from V <sub>O</sub> V <sub>I</sub> = 80dBμ, Δf = ± 75KHz		50	55	dBμ
AM Rejection Ratio	AMR	FM: Δf = ± 75KHz dev AM: 30% Mod V <sub>I</sub> = 80dBμ		50		dB
Detector Output Voltage	V <sub>O</sub>	Δf = ± 75KHz dev V <sub>I</sub> = 80dBμV	300	500	700	mV
Total Harmonic Distortion	THD	Δf = ± 22.5KHz dev V <sub>I</sub> = 80dBμV		0.2		%
Signal to Noise Ratio	S/N	Δf = ± 75KHz dev V <sub>I</sub> = 80dBμV		60		dB

TEST CIRCUIT



APPLICATION CIRCUIT

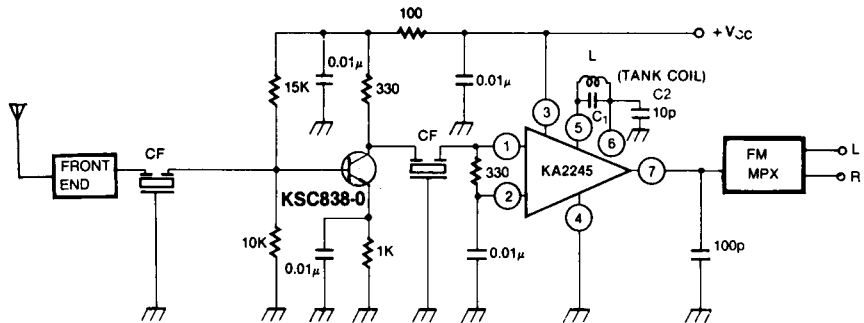
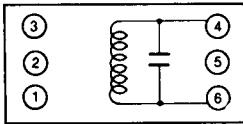


Fig. 3

$$f_o = \frac{1}{2\pi\sqrt{L(C_1 + \frac{C_2}{2})}}$$

COIL SPECIFICATIONS



C <sub>o</sub> (pF)	f (MHz)	O <sub>o</sub> (%)	Tums		
			4-6		
27	10.7	150	18		