

## FM IF SYSTEM FOR CAR RADIOS

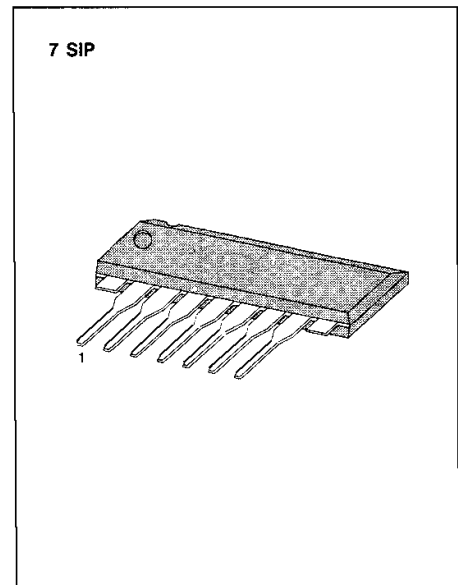
The KA2245 is a monolithic integrated circuit consisting of an FM IF amplifier and detector. It is suitable for car radios.

### 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:  $V_{I(LIM)} = 50dB\mu V (Typ)$ .
- 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°C ~ +70°C

### BLOCK DIAGRAM

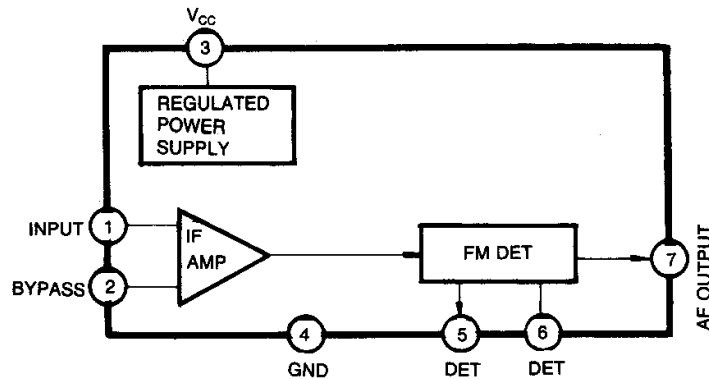


Fig. 1

## ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	15	V
Input Voltage	$V_i$	0.7	V
Power Dissipation	$P_D$	400	mW
Operating Temperature	$T_{OPR}$	-20 ~ +70	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +125	$^\circ\text{C}$

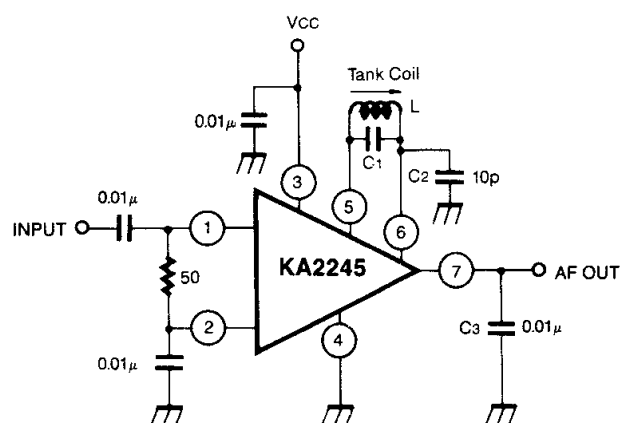
\* : Derated above  $T_a = 25^\circ\text{C}$  in the proportion of  $4\text{mW}/^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS

( $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ ,  $f = 10.7\text{MHz}$ ,  $f_m = 400\text{Hz}$ )

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	$I_{CCQ}$	$V_i = 0$	8	12	15	mA
-3dB Limiting Sensitivity	$V_{i(LIM)}$	-3dB point from $V_o$ $V_i = 80\text{dB}\mu$ , $\Delta f = \pm 75\text{KHz}$		50	55	$\text{dB}\mu$
AM Rejection Ratio	AMR	FM: $\Delta f = \pm 75\text{KHz dev}$ AM: 30% Mod $V_i = 80\text{dB}\mu$		50		dB
Detector Output Voltage	$V_o$	$\Delta f = \pm 75\text{KHz dev}$ $V_i = 80\text{dB}\mu\text{V}$	300	500	700	mV
Total Harmonic Distortion	THD	$\Delta f = \pm 22.5\text{KHz dev}$ $V_i = 80\text{dB}\mu\text{V}$		0.2		%
Signal to Noise Ratio	S/N	$\Delta f = \pm 75\text{KHz dev}$ $V_i = 80\text{dB}\mu\text{V}$		60		dB

## TEST CIRCUIT



## APPLICATION CIRCUIT

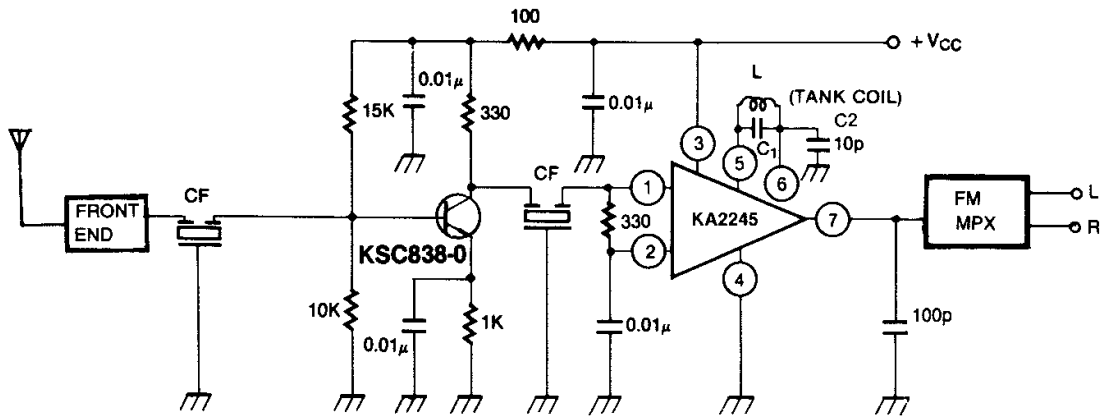
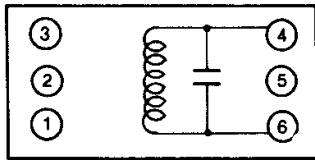


Fig. 3

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

## COIL SPECIFICATIONS



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