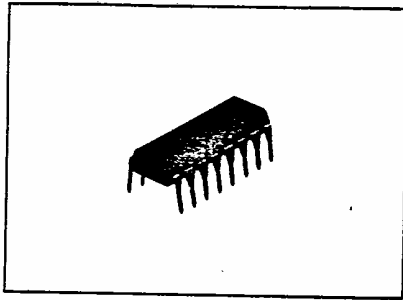


AM/FM IF Amplifier BA4220

REVISED DATA SHEET FOR 7020777 0002678 4
T-77-05-c



Dimensions (Unit: mm)

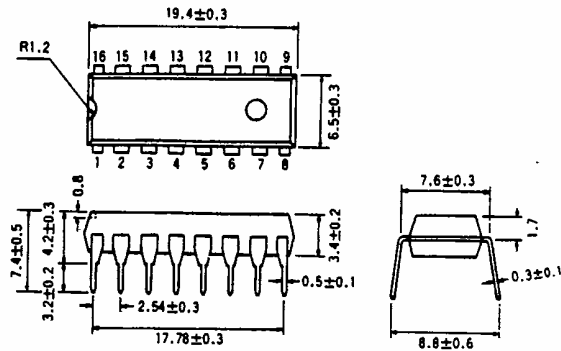


Fig. 1

The BA4220 is a monolithic integrated circuit developed for use as an AM/FM IF amplifier and detector for use in radio cassette recorders and home stereo systems. It includes an AM/FM level meter circuit and an FM tuning meter circuit, making it ideal for use as an IF system. Also, operating voltage range is wide, with stable operation at low voltages.

Features

1. Wide operating voltage range ($V_{cc}=3.0\sim 14.0V$).
2. Low current drain (typically 11.0mA for FM operation).
3. AM/FM level meter output.
4. AFC output.
5. High FM sensitivity.
Low residual noise.
High S/N ratio.
Excellent AM: AGC characteristics.

Applications

- Radio cassette recorders
- System components
- Music centers
- AM/FM radios

Block Diagram

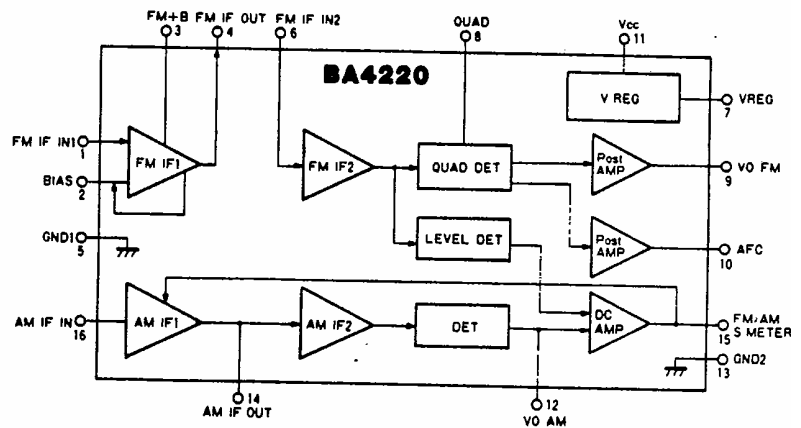


Fig. 2

Absolute Maximum Ratings ($T_a=25^\circ C$)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{cc}	16	V
Power dissipation	P_d	550*	mW
Operating temperature range	T_{opr}	-25~75	$^\circ C$
Storage temperature range	T_{stg}	-40~125	$^\circ C$

* Derating is done at 5.5mW/ $^\circ C$ for operation above $T_a=25^\circ C$

Electrical Characteristics ($T_a=25^\circ\text{C}$, $V_{CC}=6.0\text{V}$)

FM: $f_c=10.7\text{MHz}$, $f_m=1\text{kHz}$, 100% MOD
 AM: $f_c=455\text{kHz}$, $f_m=1\text{kHz}$, 30% MOD

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Test circuit
Supply current	I_o	7.0	11	16.5	mA	—	Fig. 3
Detector output	V_{out}	180	250	320	mV	$V_{N1}=100\text{dB}\mu$	Fig. 3
Total harmonic distortion	THD	—	0.3	0.9	%	$V_{N1}=100\text{dB}\mu$	Fig. 3
Limiting sensitivity	$V_{N1}(\text{lim})$	—	33	38	dB μV	$V_O=-3\text{dB}$	Fig. 3
Signal-to-noise ratio	S/N	72	80	—	dB	$V_{N1}=100\text{dB}\mu$	Fig. 3
Residual noise	V_N	—	40	—	dB	$V_{N1}=-10\text{dB}\mu$	Fig. 3
Level meter voltage	V_M	—	2.4	—	V	$V_{N1}=100\text{dB}\mu$	Fig. 3
Detector output	V_{out}	60	80	100	mV	$V_{N1}=74\text{dB}\mu$	Fig. 3
Total harmonic distortion	THD	—	0.3	0.9	%	$V_{N1}=74\text{dB}\mu$	Fig. 3
Maximum sensitivity	S_F	34	40	—	dB μV	$V_{N1}=10\text{mV}$	Fig. 3
Signal-to-noise ratio	S/N	45	55	—	dB	$V_{N1}=74\text{dB}\mu$	Fig. 3
Level meter voltage	V_M	—	1.4	—	V	$V_{N1}=100\text{dB}\mu$	Fig. 3

Test Circuit

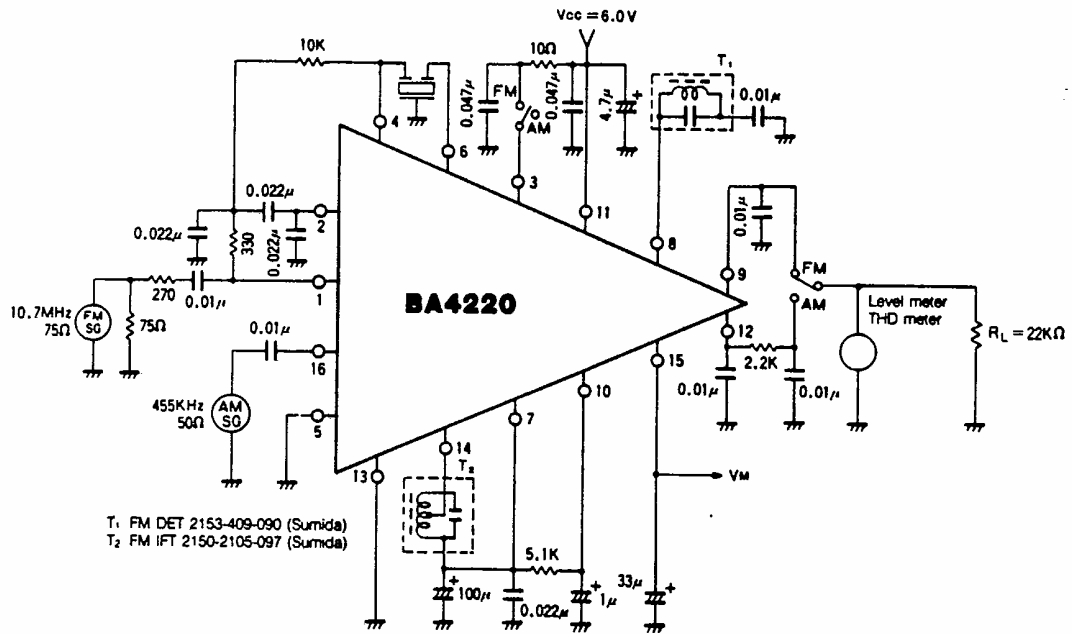


Fig. 3