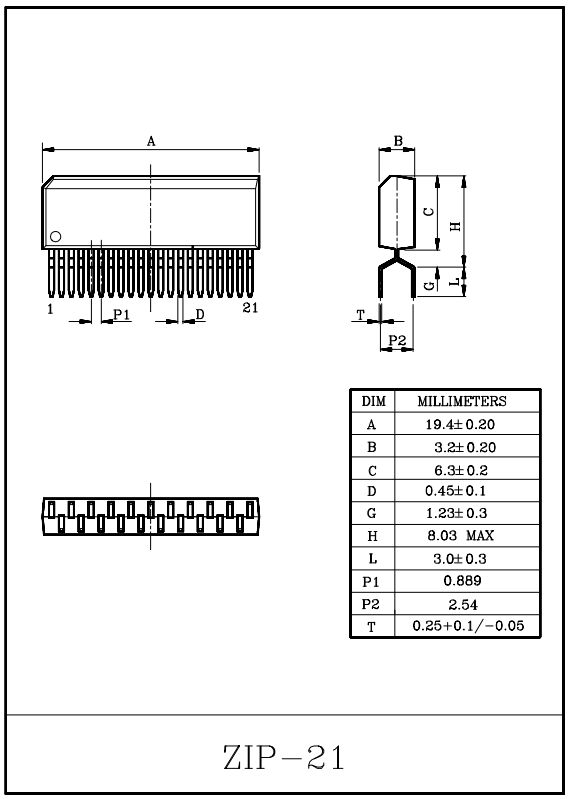
DUAL PRE AMPLIFIER SYSTEM

The KIA7417AP is a dual preamplifier system IC designed for radio cassette player of the low end class to the middle class.



DIM	MILLIMETERS
A	19.4± 0.20
B	3.2± 0.20
C	6.3± 0.2
D	0.45± 0.1
G	1.23± 0.3
H	8.03 MAX
L	3.0± 0.3
P1	0.889
P2	2.54
T	0.25+0.1/−0.05

ZIP−21

FEATURES

- Recording Amp with ALC.
- Play Back Amp.
- Mic Amp with ALC.
- Monitor Amp.
- Built-in Switch for Selecting REC/PLAY.
- Built-in Switch for Selecting TAPE input or RADIO(AUX) input.
- Built-in Recording Bias Circuit Control terminal.
- Follwing 4 modes can be Carried out by External two Switches Combination.
  - Radio Recording.
  - Mic Recording.
  - Radio Play.
  - Tape Play Back.
- Few External Parts.
- Small Package (ZIP-21)
- Operational Supply Voltage (Recommended)
  : V_{CC}=3.5～7V (Ta=25℃)

MAXIMUM RATINGS (Ta=25℃)

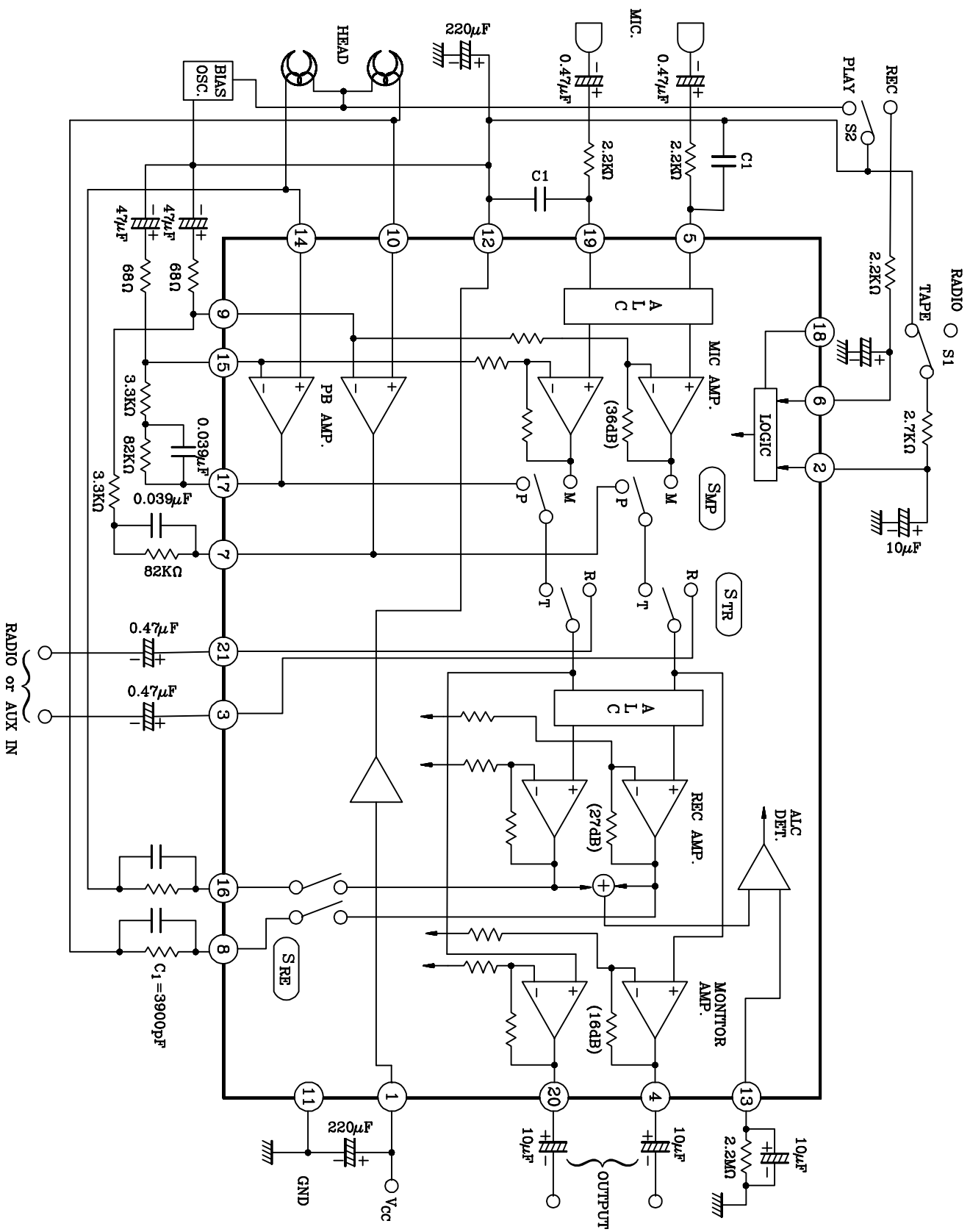
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	8	V
Power Dissipation (Note)	P_D	750	mW
Operating Temperature	T_{opr}	-25～75	℃
Storage Temperature	T_{stg}	-55～150	℃

Note : Derated above Ta=25℃ in the proportion of 6mW/℃.

ELECTRICAL CHARACTERISTICS
(Unless otherwise specified, V_{CC}=9V, f=1kHz, Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current		I_{CC1}	S1=RADIO, S2=PLAY	-	11	16	mA
		I_{CC2}	S1=RADIO, S2=REC	-	14	19	
		I_{CC3}	S1=TAPE, S2=PLAY	-	11	16	
		I_{CC4}	S1=TAPE, S2=REC	-	10	15	
Reference Voltage		V_{ref}		1.8	2.0	2.3	V
MONITOR AMP	Voltage Gain	G_{V1}	V_{IN}=-50dBV	14	16	18	dB
	Maximum Output Voltage	V_{omax1}	THD=1%	-	1.3	-	V_{rms}
	Output Noise Voltage	V_{no1}	BW=5~30kHz	-	15	-	μV_{rms}
	Total Harmonic Distortion	THD1	V_{OUT}=-10dBV, BW=400~30kHz	-	0.06	-	%
	Cross Talk	CT1	V_{OUT}=0dBV, BW=400~30kHz	-	-66	-	dB
	Ripple Rejection Ratio	RR1	V_{ripple}=-20dBV, f=100Hz	-	-50	-	dB
PLAY BACK AMP	Voltage Gain	G_{V2}	V_{IN}=-50dBV	35	38	41	dB
	Open Loop Voltage Gain	G_{VO2}	V_{IN}=-90dBV		78		dB
	Maximum Output Voltage	V_{omax2}	THD=1%		1.3		V_{rms}
	Output Noise Voltage	V_{no2}	BW=5~30kHz		80	160	μV_{rms}
	Total Harmonic Distortion	THD2	V_{OUT}=-10dBV, BW=400~30kHz		0.02		%
	Cross Talk	CT2	V_{OUT}=0dBV, BW=400~30kHz		-77		dB
	Ripple Rejection Ratio	RR2	V_{ripple}=-20dBV, f=100Hz		-42		dB
REC AMP	Voltage Gain	G_{V3}	V_{IN}=-50dBV	24	27	30	dB
	Output Noise Voltage	V_{no3}	BW=5~30kHz		160		μV_{rms}
	Total Harmonic Distortion	THD3	V_{OUT}=-10dBV, BW=400~30kHz		0.04		%
	Cross Talk	CT3	V_{OUT}=-10dBV, BW=400~30kHz		-71		dB
	Ripple Rejection	RR3	V_{ripple}=-20dBV, f=100Hz		-42		dB
	ALC1	ALC31	V_{IN}=-25dBV, Dual OP	-6	-2	2	dBV
	ALC2	ALC32	V_{IN}=-15dBV, Dual OP		-1		dBV
	ALC3	ALC33	V_{IN}=-5dBV, Dual OP		-1		dBV
MIC AMP + REC AMP	Voltage Gain	G_{V4}	V_{IN}=-80dBV		63		dB
	Output Noise Voltage	V_{no4}	BW=5~30kHz		3.5	5.6	μV_{rms}
	Total Harmonic Distortion	THD4	V_{OUT}=-10dBV, BW=400~30kHz		0.7		%
	Cross Talk	CT4	V_{OUT}=-10dBV, BW=400~30kHz		-43		dB
	Ripple Rejection	RR4	V_{ripple}=-20dBV, f=100Hz		-28		dB
	ALC1	ALC41	V_{IN}=-60dBV, Dual OP	-6	-2	2	dBV
	ALC2	ALC42	V_{IN}=-40dBV, Dual OP		-1	-	dBV
	ALC3	ALC43	V_{IN}=-15dBV, Dual OP	-4	-1	2	dBV

BLOCK DIAGRAM



APPLICATION CIRCUIT (AC biasing type)