

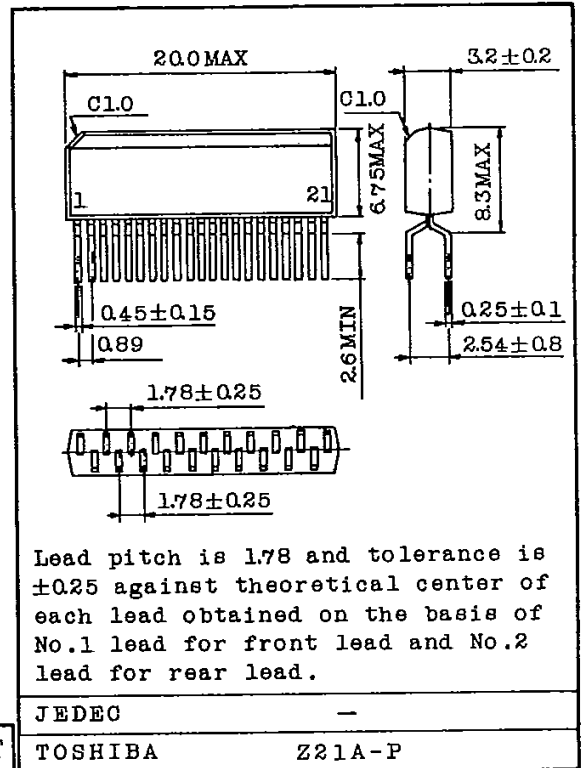
TA7415P

OUTPUT AMP. FOR CD PLAYER

TA7415P is an audio output (de-emphasis) amp. in CD players of portable type or low-end model.

- . 5V single power supply. (3-8V operation is possible)
- . Right and left stereo channel head phone driver amp. is built in.
- . Low distortion ratio. -83dB or less.
- . De-emphasis ON/OFF switch is built in.
- . Package is ZIP21-pin. Compact design is possible.

Unit in mm

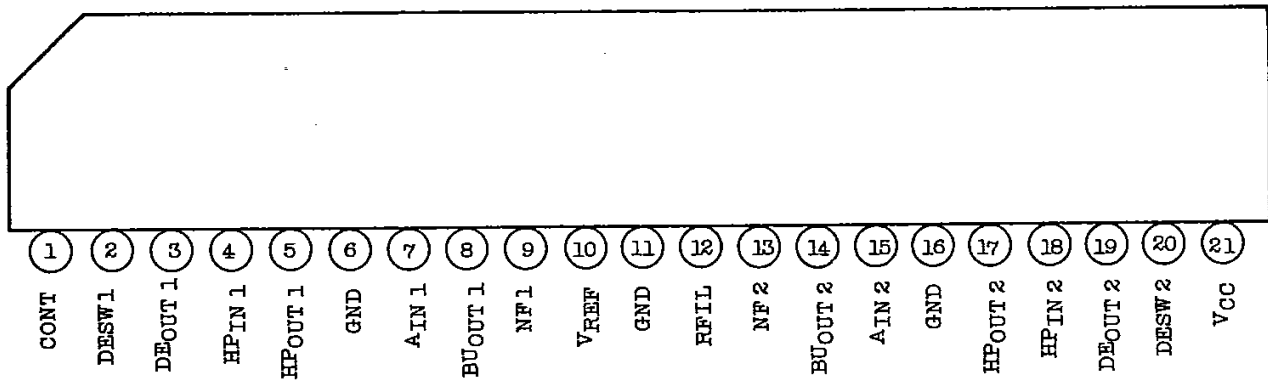


MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V _{CC}	9	V
Power Dissipation	P _D	750*	mW
Operating Temperature	T _{opr}	-25~75	°C
Storage Temperature	T _{stg}	-55~150	°C

* Derated above Ta=25°C in the proportion of 6mW/deg.

PIN CONNECTIONS



ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC}=5V$, $f=1kHz$, $T_a=25^\circ C$)

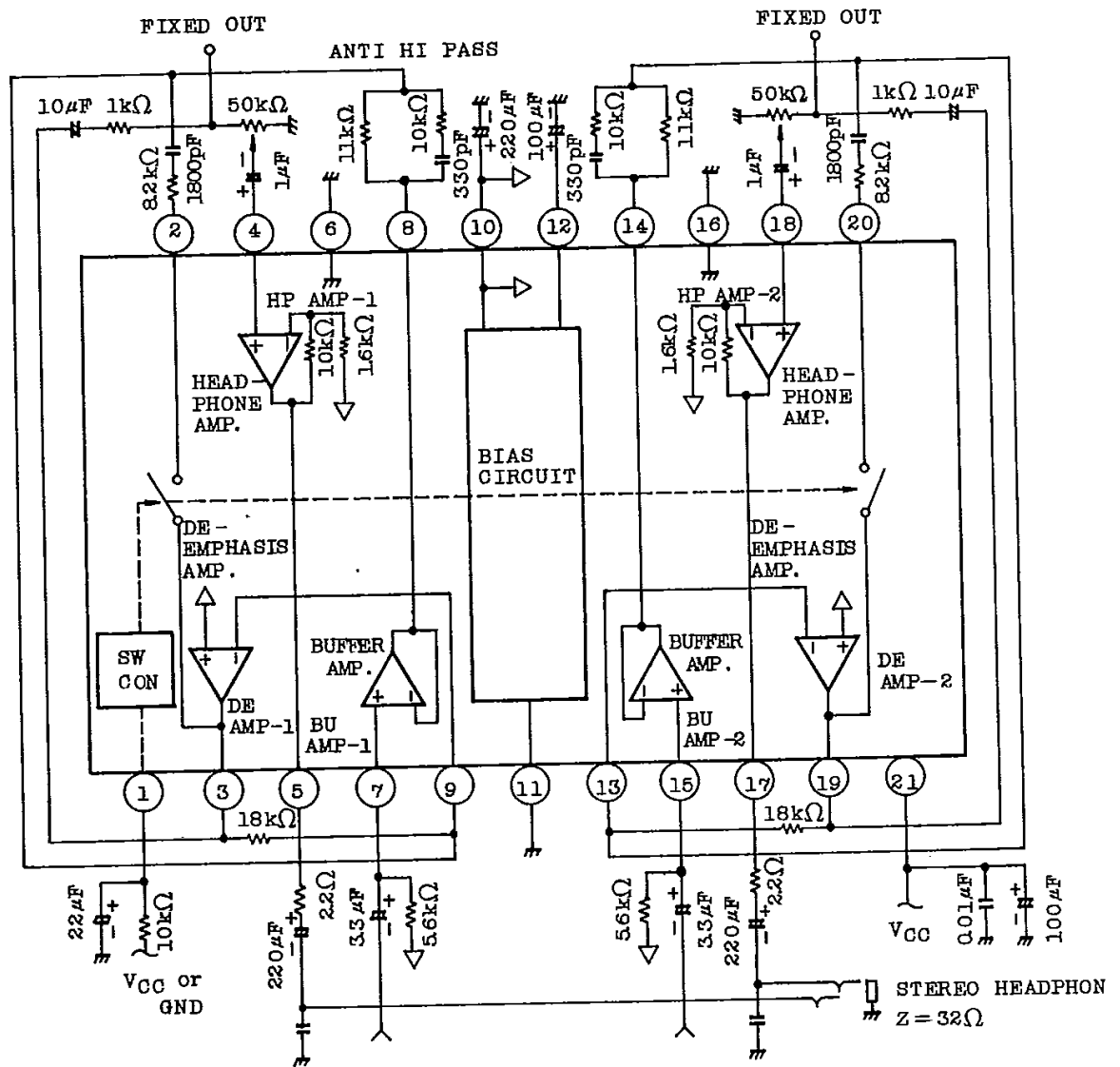
CHARACTERISTIC		SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current		I_{CCQ}	-	$V_{IN}=0$	5	9	12.5	mA
DE-EMPHASIS AMP.	Distortion Ratio	THD _{DE1}	3	$V_O=620mV_{rms}$ Emphasis ON	-	-	-85	dB
		THD _{DE2}	3	$V_O=620mV_{rms}$ Emphasis OFF	-	-	-83	
		THD _{DE3}	3	$V_O=620mV_{rms}$, $f=10kHz$ Emphasis OFF	-	-	-80	
	Gain	GV _{DE1}	3	$V_O=620mV_{rms}$, $f=10kHz$ Emphasis ON	-3.4	-2.9	-2.4	dB
		GV _{DE2}	3	$V_O=620mV_{rms}$, $f=1kHz$ Emphasis OFF	3.8	4.3	4.8	
	Output Voltage	V _{OM}	3	THD=1%, $f=1kHz$ Emphasis OFF	-	-	0.9	V _{rms}
	Cross Talk	CT ₁	3	$V_O=620mV_{rms}$, $f=1kHz$	83	-	-	dB
CT ₂		3	$V_O=620mV_{rms}$, $f=10kHz$	80	-	-		
Ripple Rejection Ratio	RR	2	$V_{IN}=-30dBV$	40	-	-	dB	
HEADPHONE AMP.	Output Power	P _{OUT}	3	THD=10%	20	-	-	mW
	Distortion Ratio	THD _{HP}	3	$P_O=10mW$	-	-70	-50	dB
	Gain	GV _{HP}	3	$P_O=10mW$	15.5	17	18.5	dB
	Input Resistance	R _{IN}	1		15	20	27	k Ω
	Output Offset Voltage	V _{OS}	-	$V_S \cdot V_{REF}$	70	140	180	mV
OTHERS	Reference Voltage	V _{REF}	-		2.45	2.5	2.55	V
	Switch Control Voltage	"H" Level	V _{IH}	-	3.5	-	5	V
		"L" Level	V _{IL}	-	0	-	1	

FUNCTION OF EACH PIN

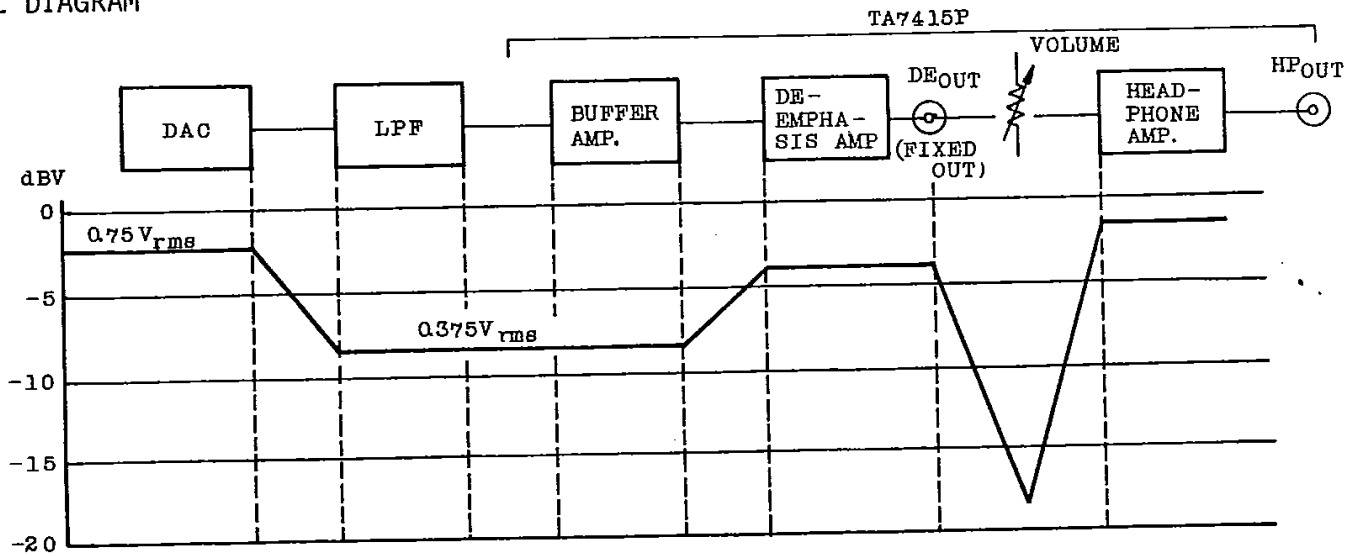
PIN No.	SYMBOL	I/O	FUNCTION DESCRIPTION	REMARKS
1	CONT	I	De-emphasis ON/OFF switching terminal. At "H" level, De-emphasis turns ON.	
2	DESW ₁	I	De-emphasis ON/OFF switching terminal-1.	
3	DEOUT1	O	De-emphasis amp. output terminal-1.	
4	HPIN1	I	Headphone amp. input terminal-1.	
5	HPOUT1	O	Headphone amp. output terminal-1.	
6	GND	-	Ground terminal.	
7	AIN1	I	Audio signal input terminal-1.	Connection with passive LPF is possible.
8	BUOUT1	O	Buffer amp. output terminal-1. AIN1 signal buffer output.	
9	NF ₁	I	De-emphasis amp. negative phase input terminal.	
10	VREF	-	Reference voltage supply terminal.	Connect capacitor for filter between this terminal and GND.
11	GND	-	Ground terminal.	
12	RFIL	I	Ripple filter connection terminal.	Connect capacitor for filter between this terminal and GND.
13	NF ₂	I	De-emphasis amp. negative phase input terminal-2.	
14	BUOUT2	O	Buffer amp. output terminal-2. AIN2 signal buffer output.	
15	AIN2	I	Audio signal input terminal-2.	Connection with passive LPF is possible.
16	GND	-	Ground terminal.	
17	HPOUT2	O	Headphone amp. output terminal-2.	
18	HPIN2	I	Headphone amp. input terminal-2.	
19	DEOUT2	O	De-emphasis amp. output terminal-2.	
20	DESW ₂	I	De-emphasis ON/OFF switching terminal-2.	
21	VCC	-	Power supply terminal.	

Note: Connect GND terminal outside IC (pins 6,11,16).

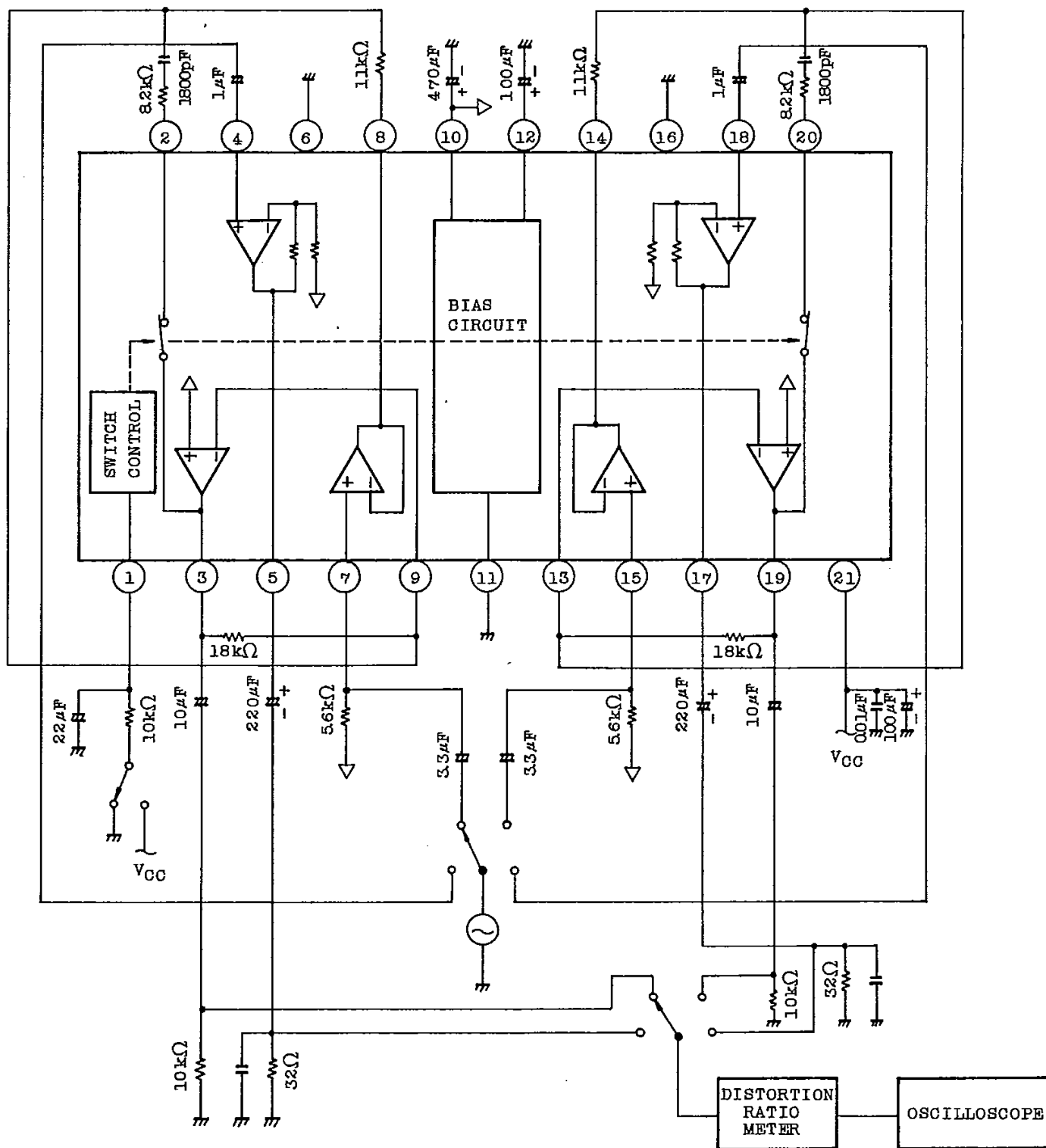
BLOCK DIAGRAM/EXAMPLE OF APPLICATION CIRCUIT



LEVEL DIAGRAM

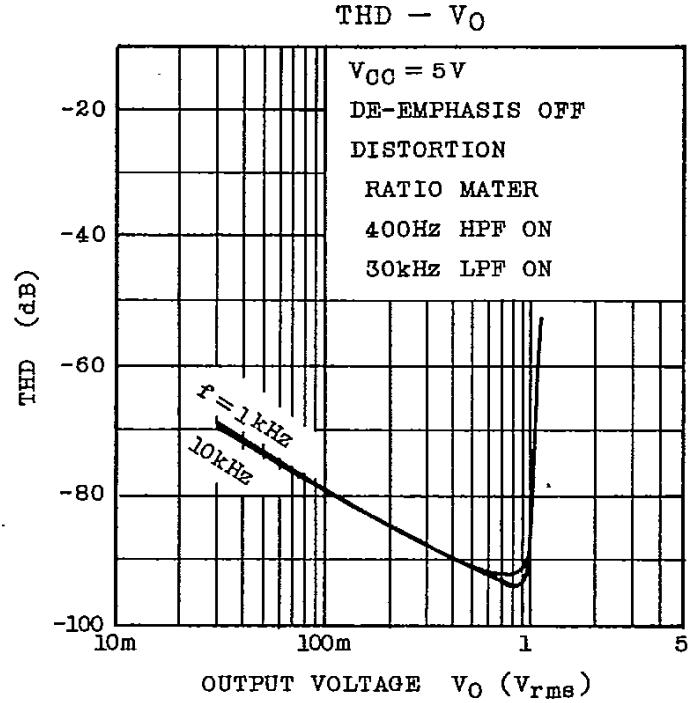
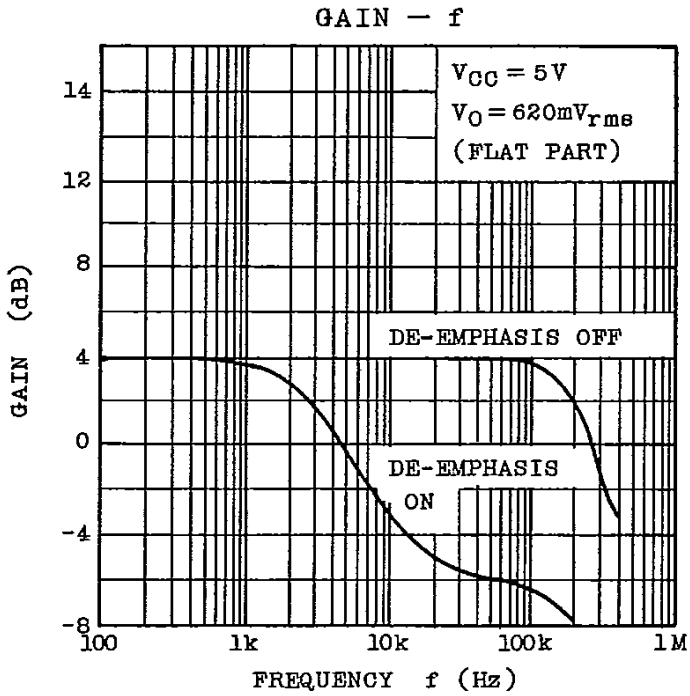


TEST CIRCUIT 3



400Hz HPF ON
30kHz LPF ON

(1) OUTPUT AMP.



(2) HEADPHONE AMP.

