

TA7222AP

T-74-05-01

5.8W AUDIO POWER AMPLIFIER

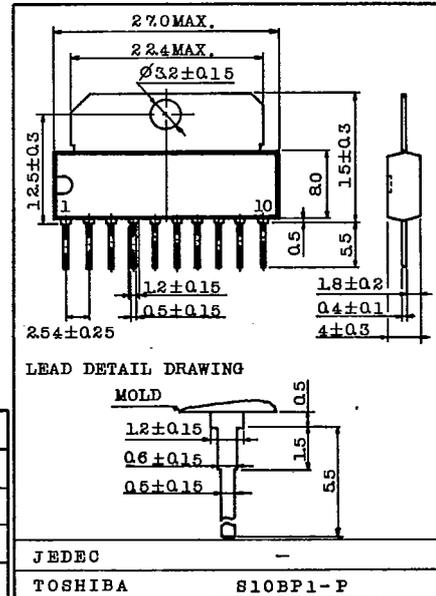
CAR STEREO CAR RADIO AUDIO OUTPUT

- Very Few External Parts (Require 4 PCS Capacitor)
- Adjustable Closed-Loop Gain
- High Sustaining Over Voltage
(Surge voltage up to 40V for 0.2sec. pin 1 to 8)
- Excellent Ripple Rejection
- High Power and Low Distortion :
 $P_{OUT}=5.8W(\text{Typ.})$ at $V_{CC}=13.2V, R_L=4\Omega, THD=10\%$
 $THD=0.2\%(\text{Typ.})$
- Possible to Use for 2Ω Load :
 $P_{OUT}=9.3W(\text{Typ.})$ at $V_{CC}=13.2V, THD=10\%$
- Operating Supply Voltage Range : $V_{CC}=8 \sim 18V$
- Audio Muting Circuit
- Protection Circuit (for Load Short, Excessive Supply Voltage and Thermal Shut-down)

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Supply Voltage (200ms)	V _{CC surge}	40	V
D.C Supply Voltage	V _{CC(DC)}	25	V
Operating Supply Voltage	V _{CC(ope)}	18	V
Output Current (Peak)	I _{O(peak)}	4.5	A
Power Dissipation (Tc=25°C)	P _D	12.5	W
Operating Temperature	P _{opr}	-30 ~ 75	°C
Storage Temperature	T _{stg}	-55 ~ 150	°C

Unit in mm



ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, V_{CC}=12.5V, R_L=4Ω, R_g=600Ω, f=1kHz, Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I _{CCQ}	-	-	-	40	80	mA
			V _{CC} =18V	-	45	100	
Output Power	P _{OUT}	-	THD=10%	-	5.2	-	W
			V _{CC} =13.2V, THD=10%	5.0	5.8	-	
Maximum Output Power	P _{OM}	-	V _{CC} =13.2V, R _L =2Ω, THD=10%	-	9.3	-	W
			V _{CC} =13.2V, V _{IN} =100mV	-	9.0	-	
Total Harmonic Distortion	THD	-	P _{OUT} =1W	-	0.2	1.5	%
			P _{OUT} =100mW	-	0.36	1.0	
			P _{OUT} =1W, R _L =2Ω	-	0.5	-	
Voltage Gain	G _v	-	-	51.5	53	54.5	dB
Input Resistance	R _{IN}	-	-	-	34	-	kΩ
Output Noise Voltage	V _{NO}	-	R _g =10kΩ, BW=50~20kHz	-	0.9	2.0	mV

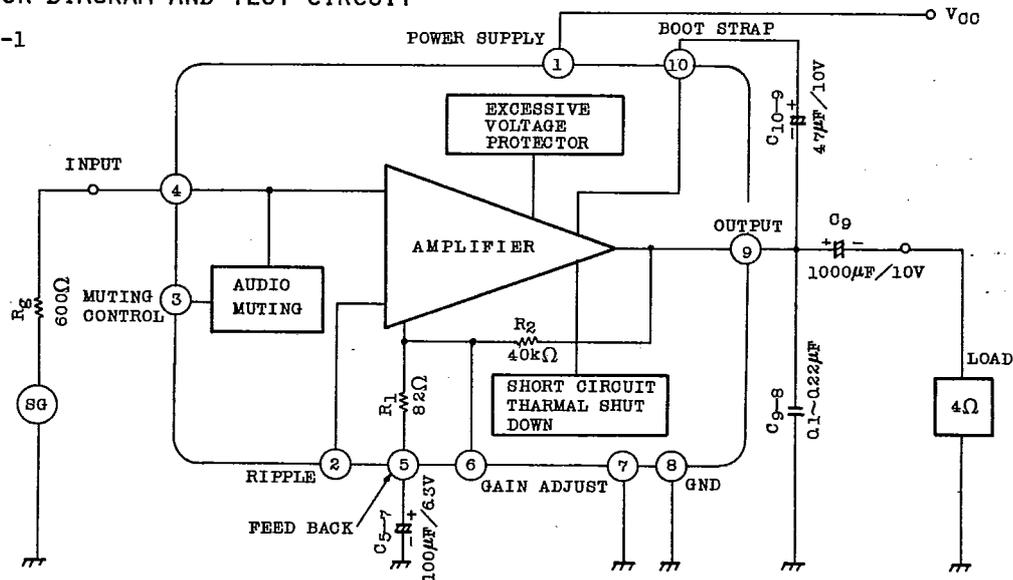
AUDIO LINEAR IC

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BLOCK DIAGRAM AND TEST CIRCUIT

FIG-1



- Terminal ⑦ is input stage GND, terminal ⑧ is output stage GND.
- Closed-loop voltage gain of the amplifier is determined by the ratio ; $(R_1+R_2)/R_1$. TA7222AP is fixed at typically 53.0 dB for designing minimum external components.
 - When higher closed loop gain is desired, the gain can be increased by connecting a resistor between pin ⑤ and pin ⑥ . Open loop gain is obtained by shortening pin ⑤ and pin ⑥ .
 - When lower closed loop gain is desired, the following two ways can be used.
 - Series connecting a resistor and a capacitor between pin ⑥ and pin ⑨ .
 - Series adding a resistor to pin ⑤ .

Both A and B, lower closed loop gain than 40 dB is not recommended. And also, ripple rejection ratio is decreased by using B configuration in such a case, connecting a capacitor from pin ② to ground is recommended. (Fig.2,3,4 show these ways.)
- For applications requiring high ripple rejection ratio, an excellent supply voltage ripple rejection is obtained by connecting a capacitor (recommended value 4.7μF) between pin ② and ground. (R.R-f shows these characteristics)
- Terminal ③ is Audio Muting Control Input.
 - When control input is low state (; open or below 0.3V), muting circuit does not operate, OFF.
 - When control input is high state (; above 1.0V), muting circuit, then, operates, ON. (Refer to Fig.5)