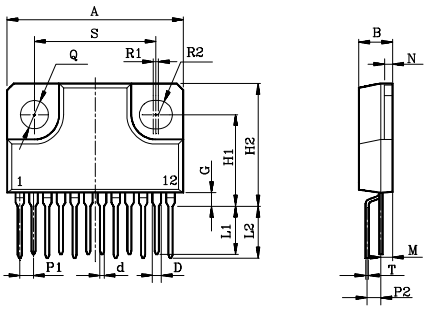
5.8W DUAL AUDIO POWER AMPLIFIER.
22W BTL AUDIO POWER AMPLIFIER.

The KIA6281H is dual audio power amplifier for consumer application.
It is designed for high power, low distortion and low noise.
It also contains various kind of protectors.
It is suitable for car-audio power amplifier with high performance.



DIM	MILLIMETERS
A	22.6± 0.2
B	4.0± 0.2
D	1.1± 0.1
d	0.55± 0.1
G	1.55± 0.2
H1	11.25± 0.3
H2	14.5± 0.3
L1	6.55± 0.3
L2	7.05± 0.3
M	2.075 TYP.
N	1.5 TYP.
P1	1.778
P2	2.0
Q	3.7± 0.2
R1	0.4
R2	R1.85
S	15.6± 0.2
T	0.4+0.1/−0.05

CPP−12

FEATURES

- High Power
  $P_{OUT(1)}$=22W(Typ.)
  (V_{CC}=14.4V, f=1kHz, THD=10%, R_L=4Ω, BTL)
  $P_{OUT(2)}$=19W(Typ.)
  (V_{CC}=13.2V, f=1kHz, THD=10%, R_L=4Ω, BTL)
  $P_{OUT(3)}$=15W(Typ.)
  (V_{CC}=13.2V, f=1kHz, THD=1%, R_L=4Ω, BTL)
  $P_{OUT(4)}$=5.8W(Typ.)/ch
  (V_{CC}=13.2V, f=1kHz, THD=10%, R_L=4Ω, DUAL).

- Low Distortion
  THD(1)=0.03%(Typ.)
  (V_{CC}=13.2V, f=1kHz, P_{OUT}=4W, G_V=40dB, R_L=4Ω, BTL)
  THD(2)=0.06%(Typ.)
  (V_{CC}=13.2V, f=1kHz, P_{OUT}=1W, G_V=52dB, R_L=4Ω, DUAL).

- Low Noise
  $V_{NO(1)}$=0.14mV_{rms}(Typ.)
  (V_{CC}=13.2V, R_L=4Ω, G_V=40dB, Rg=0, DIN Noise : DIN45405)
  $V_{NO(2)}$=0.7mV_{rms}(Typ.)
  (V_{CC}=13.2V, R_L=4Ω, G_V=52dB, Rg=10kΩ, BW=20Hz∼20kHz, DUAL).

- Protector Circuit
  Thermal shut down, over voltage protection
  Out-V_{CC} short, OUT-GND short and Out-Out short protection.

- Operating supply voltage range
  V_{CC}=9∼18V.

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Supply Voltage (0.2 sec)	V_{CC} surge	45	V
DC Supply Voltage	V_{CC} DC	25	V
Operating Supply Voltage	V_{CC} opr	18	V
Output Current (Peak)	I_O (peak)	4.5	A
Power Dissipation	P_D	25	W
Operating Temperature	T_{opr}	-30~85	℃
Storage Temperature	T_{stg}	-55~150	℃

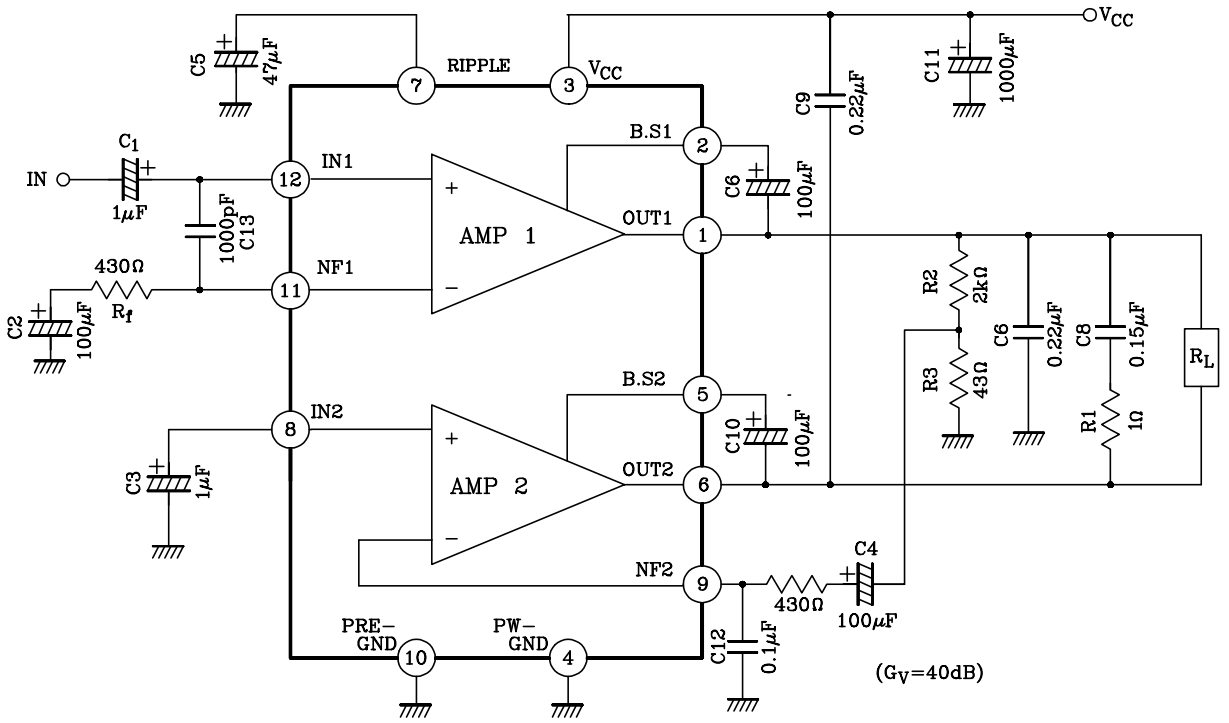
ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, V_{CC}=13.2V, R_L=4Ω, Rg=600Ω, f=1kHz, Ta=25℃)

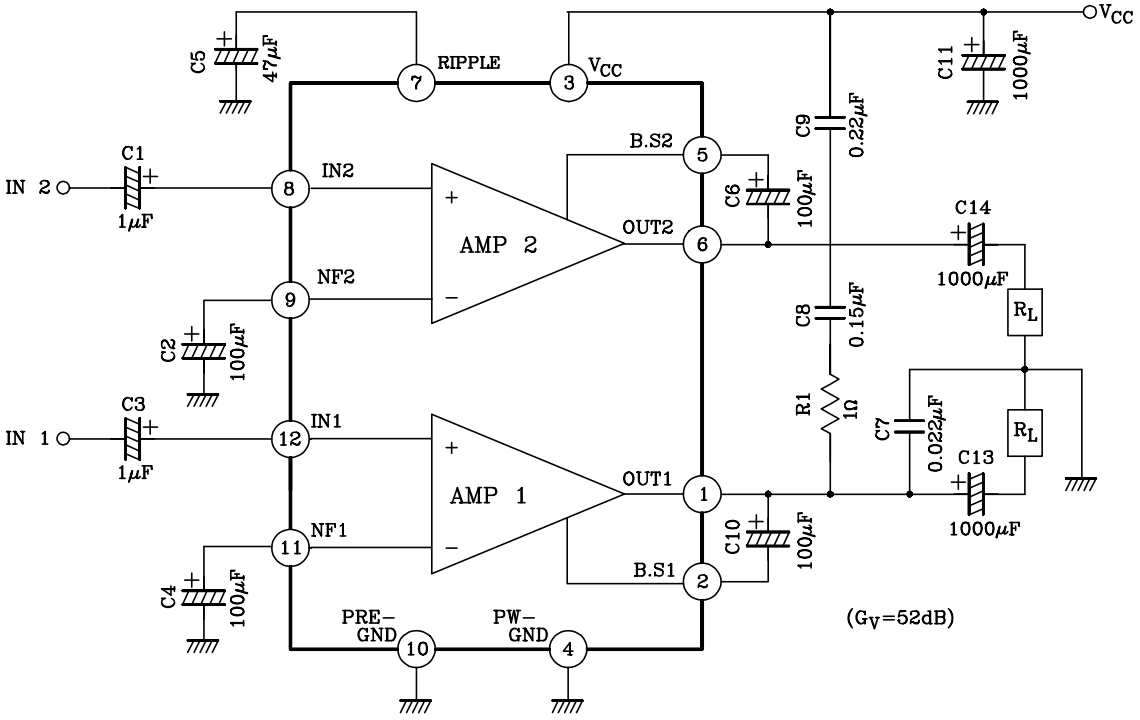
CHARACTERISTIC		SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current		I_{CCQ}	2	V_{IN}=0	-	80	145	mA
BTL Mode	Output Power	P_{OUT}(1)	1	V_{CC}=14.4V, THD=10%	-	22	-	W
		P_{OUT}(2)	1	THD=10%	-	19	-	
		P_{OUT}(3)	1	THD=1%	-	15	-	
	Total Harmonic Distortion	THD(1)	1	P_{OUT}=4W, G_V=40dB	-	0.03	0.25	%
	Output Offset Voltage	V_{OFF}	1	V_{IN}=0	-	0	0.35	V
	Voltage Gain	G_V(1)	1	V_{OUT}=0dBm	-	40	-	dB
	Output Noise Voltage	V_{NO}(1)	1	Rg=0, BW=20Hz~20kHz	-	0.14	-	mV_{rms}
	Ripple Rejection Ratio	R.R(1)	1	f_{RIP}=100Hz, V_{RIP}=0dBm	-	-52	-40	dB
Dual Mode	Output Power	P_{OUT}(4)	2	THD=10%	5	5.8	-	W
	Total Harmonic Distortion	THD(2)	2	P_{OUT}=1W	-	0.06	0.30	%
	Voltage Gain	G_V(2)	2	V_{OUT}=0dBm	50	52	54	dB
	Voltage Gain Ratio	$\triangle G_V$	2	V_{OUT}=0dBm	-1	0	1	dB
	Output Noise Voltage	V_{NO}(2)	2	Rg=10kΩ, BW=20Hz~20kHz	-	0.7	1.5	mV_{rms}
	Ripple Rejection Ratio	R.R(2)	2	f_{RIP}=100Hz, V_{RIP}=0dBm	-	-52	-40	dB
	Cross Talk	C.T	2	V_{OUT}=0dBm, Rg=600Ω	-	-57	-	dB
	Input Resistance	R_{IN}	2	-	-	33	-	kΩ

TEST CIRCUIT / APPLICATION CIRCUIT

(1) BTL MODE



(2) DUAL MODE



TYPICAL VOLTAGE OF EACH TERMINAL
(V_{CC}=13.2V, Ta=25℃, DUAL MODE TEST CIRCUIT)

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12
DC Voltage(V)	6.4	12.3	V_{CC}	GND	12.3	6.4	6.4	1.5	1.5	GND	1.5	1.5

APPLICATION INFORMATION

1.VOLTAGE GAIN ADJUSTMENT

(1) DUAL AMPLIFIER

The voltage gain G_V is determined by R_1, R_2 and R_f in Fig. 1.

$$G_V = 20\log\frac{R_f + R_1 + R_2}{R_f + R_1}(dB)$$

In case of R_f=0

The voltage gain is set as follows : G_V=52dB (Typ.)

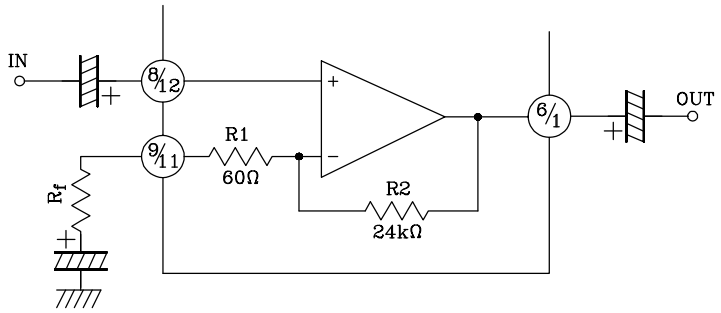


Fig. 1

(2) BTL AMPLIFIER

The recommended BTL connection amplifier shown in Fig. 2.

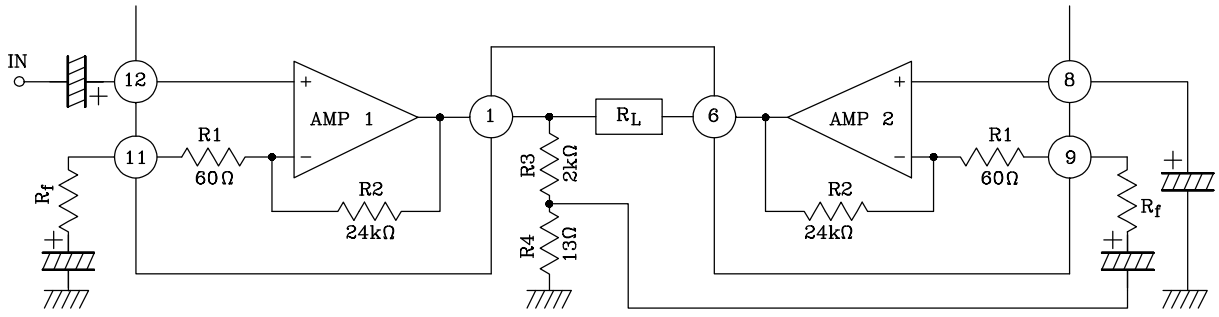


Fig. 2