

MAX POWER 40W QUAD BTL AUDIO POWER AMPLIFIER

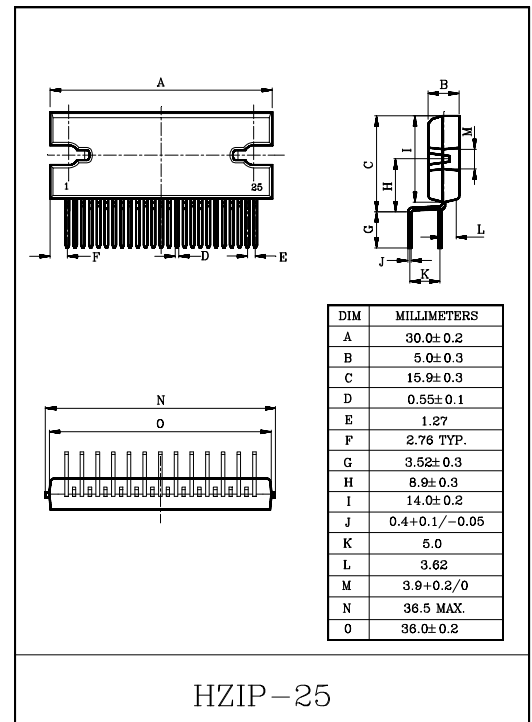
The KIA8260AH is 4ch BTL audio power amplifier for car audio application.

This IC can generate more high power : $P_{OUTMAX}=40W$ as it is included the pure complementary PNP and NPN transistor output stage.

It is designed low distortion ratio for 4ch BTL audio power amplifier, built-in Stand-by Function, Muting Function, Clip detector, and diagnosis circuit. Additionally, the AUX, amplifier is built-in, it can make the beep signal etc. output to 2 channels (OUT1 and 4). It contains various kind of protectors for car audio use.

FEATURES

- High Power
 - : $P_{OUTMAX}(1)=40W(Typ.)$
($V_{CC}=14.4V$, $f=1kHz$, EIAJ Max., $R_L=4\Omega$)
 - : $P_{OUTMAX}(2)=37W(Typ.)$
($V_{CC}=13.7V$, $f=1kHz$, EIAJ Max., $R_L=4\Omega$)
 - : $P_{OUT}(1)=24W(Typ.)$
($V_{CC}=14.4V$, $f=1kHz$, THD=10%, $R_L=4\Omega$)
 - : $P_{OUT}(2)=21W(Typ.)$
($V_{CC}=13.2V$, $f=1kHz$, THD=10%, $R_L=4\Omega$)
- Built-in clip detector & diagnosis circuit. (Pin③)
- Low Distortion Ratio
 - : THD=0.02%(Typ.)
($V_{CC}=13.2V$, $f=1kHz$, $P_{out}=3W$, $R_L=4\Omega$)
- Low Noise
 - : $V_{NO}=0.16mV_{rms}(Typ.)$
($V_{CC}=13.2V$, $R_g=0\Omega$, $G_v=26dB$, $BW=20\sim 20kHz$)
- Built-in stand-by switch function. (Pin②)
- Built-in muting function. (Pin④)
- Built-in AUX. amplifier from single input to 2 channels output (Pin⑩)
- Built-in junction temperature detection circuit (pin②③)
 - : pin②③ DC voltage rises at about $+5mV/^{\circ}C$ in proportion to junction temperature.
- Built-in various protection circuit.
 - : Thermal shut down, over voltage, out to GND, out to V_{CC} , out to out short.
- Operating supply voltage.
 - : $V_{CC(opr)}=9\sim 18V$.



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MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Supply Voltage (0.2sec)	V _{CC (surge)}	50	V
DC Supply Voltage	V _{CC (DC)}	25	V
Operating Supply Voltage	V _{CC (opr)}	18	V
Output Current (Peak)	I _{O (peak)}	9	A
Power Dissipation	P _{D *}	250	W
Operating Temperature	T _{opr}	-40~85	℃
Storage Temperature	T _{stg}	-55~150	℃

* : Package thermal resistance $\theta_{j-T}=0.5^{\circ}\text{C/W(Typ.)}$
(Ta=25℃, with infinite heat sink)

ELECTRICAL CHARACTERISTICS

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

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I _{CCQ}	—	V _{IN} =0	—	200	400	mA
Output Power	P _{OUT} MAX(1)	—	V _{CC} =14.4V, MAX power	—	40	—	W
	P _{OUT} MAX(2)	—	V _{CC} =13.7V, MAX power	—	37	—	
	P _{OUT} (1)	—	V _{CC} =14.4V, THD=10%	—	24	—	
	P _{OUT} (2)	—	THD=10%	19	21	—	
Total Harmonic Distortion Ratio	THD	—	P _{OUT} =3W	—	0.02	0.2	%
Voltage Gain	G _V	—	V _{OUT} =0.775V _{rms} (0dBm)	24	26	28	dB
Voltage Gain Ratio	ΔG _V	—	V _{OUT} =0.775V _{rms} (0dBm)	-1.0	0	1.0	
Output Noise Voltage	V _{NO} (1)	—	R _g =0Ω, DIN45405	—	0.12	—	mV _{rms}
	V _{NO} (2)	—	R _g =0Ω, BW=20Hz~20kHz	—	0.10	0.35	
Ripple Rejection Ratio	R.R.	—	f _{ripple} =100Hz, R _g =620Ω V _{rip} =0.775V _{rms} (0dBm)	40	50	—	dB
Cross Talk	C.T.	—	R _g =620Ω, V _{OUT} =0.775V _{rms} (0dBm)	—	70	—	
Output Offset Voltage	V _{OFFSET}	—	—	-100	0	+100	mV
Input Resistance	R _{IN}	—	—	—	90	—	kΩ
Stand-By Current	I _{SB}	—	Stand-by condition	—	2	10	μA
Stand-By Control Voltage	V _{SB} H	—	Power : ON	3.0	—	6.0	V
	V _{SB} L	—	Power : OFF	0	—	1.5	
Mute Control Voltage *	V _{SB} H	—	Mute : OFF	OPEN			V
	V _{SB} L	—	Mute : ON, R1=10kΩ	0	—	0.5	
Mute Attenuation	ATT M	—	Mute:on, V _{OUT} =7.75V _{rms} (20dBm) at Mute:off	80	90	—	dB

* : Muting function have to be controlled by open and low logic, which logic is a transistor, FET and μ-COM port of I_{MUTE}>250μA ability. This means that the Mute control terminal : pin② must not be pulled-up.

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TEST CIRCUIT & BLOCK DIAGRAM

