

15W BTL×2CH AUDIO POWER AMPLIFIER

The thermal resistance θ_{j-T} of KIA6216H package designed for low thermal resistance, has a high efficiency of heat radiation.

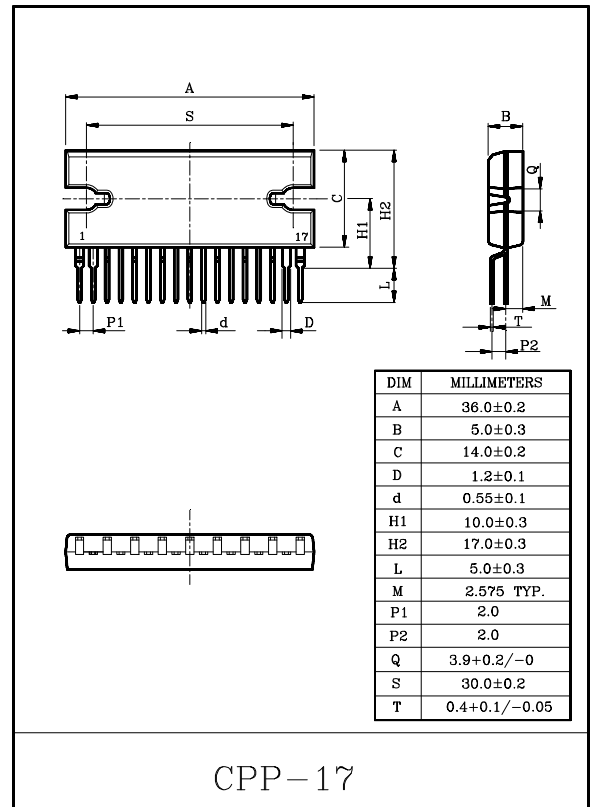
The temperature rise of chip can be reduced, and the influence from the degradation of the features due to the temperature rise at the high output can also be reduced.

This stereo audio power IC, designed for car audio use, has two built-in channels to reduce the characteristic difference between L and R channels.

In addition, the functions of stand-by and muting, and a variety of protection circuits are involved.

FEATURES

- Low Thermal Resistance.
: $\theta_{j-T}=1.5^{\circ}\text{C}/\text{W}$ (Infinite heat sink)
- High Power.
: $P_{\text{OUT}}(1)=18\text{W}(\text{Typ.})/\text{Channel}$
($V_{\text{CC}}=14.4\text{V}$, $f=1\text{kHz}$, $\text{THD}=10\%$, $R_L=4\Omega$)
: $P_{\text{OUT}}(2)=15\text{W}(\text{Typ.})/\text{Channel}$
($V_{\text{CC}}=13.2\text{V}$, $f=1\text{kHz}$, $\text{THD}=10\%$, $R_L=4\Omega$)
- Low Distortion.
: $\text{THD}=0.04\%(\text{Typ.})$
($V_{\text{CC}}=13.2\text{V}$, $f=1\text{kHz}$, $P_{\text{OUT}}=1\text{W}$, $R_L=4\Omega$, $G_V=50\text{dB}$)
- Low Noise.
: $V_{\text{NO}}=0.30\text{mV}_{\text{rms}}(\text{Typ.})$
($V_{\text{CC}}=13.2\text{V}$, $R_L=4\Omega$, $G_V=50\text{dB}$, $R_g=0\Omega$, $\text{BW}=20\text{Hz}\sim 20\text{kHz}$)
- Built-in stand-by function.
(With ④ pin set at Low, power is turned OFF.)
: $I_{\text{SB}}=1\mu\text{A}(\text{Typ.})$
- Built-in muting function.
(With ① pin set at Low, power is turned OFF.)
: $V(\text{Mute})=1\text{V}(\text{Typ.})$
- Built-in various protection circuits.
: Thermal shut down, over voltage, $\text{OUT}\rightarrow V_{\text{CC}}$ short, $\text{OUT}-\text{GND}$ short and $\text{OUT}-\text{OUT}$ short.
- Operating supply voltage : $V_{\text{CC}}=9\sim 18\text{V}$.



KIA6216H

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	50	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, f=1kHz, Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Supply Current	I _{CCQ}	—	V _{IN} =0	—	120	250	mA
Output Power	P _{OUT(1)}	—	V _{CC} =14.4V, THD=10%	—	18	—	W
	P _{OUT(2)}	—	THD=10%	11	15	—	
Total Harmonic Distortion	THD	—	P _{OUT} =1W	—	0.04	0.4	%
Voltage Gain	G _V	—	—	48	50	52	dB
Output Noise Voltage	V _{NO}	—	R _g =0Ω, BW=20Hz~20kHz	—	0.30	0.70	mV _{rms}
Ripple Rejection Ratio	R.R	—	f _{RIP} =100Hz, R _g =600Ω V _{RIP} =0dBm	40	54	—	dB
Input Resistance	R _{IN}	—	—	—	30	—	kΩ
Output Offset Voltage	V _{offset}	—	V _{IN} =0	-0.3	0	0.3	mV
Current at Stand-by State	I _{SB}	—	—	—	1	10	μA
Cross Talk	C.T	—	R _g =600Ω, V _{OUT} =0dBm	—	60	—	dB
④ Pin Control Voltage	V _{SB}	—	Stand-by→OFF(Power→ON)	2.5	—	V _{CC}	V
① Pin Control Voltage	V _(MUTE)	—	Mute→ON (Power→OFF)	—	1.0	2.0	V

KIA6216H

BLOCK DIAGRAM AND TEST CIRCUIT
(KIA6216H ($G_V=50\text{dB}$))

