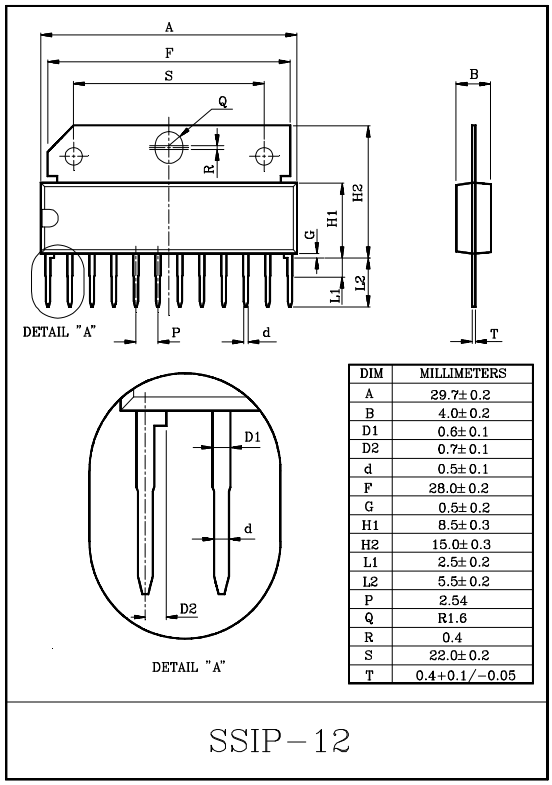
LOW FREQUENCY POWER AMPLIFIER

KIA8207K is an audio power IC with built-in two channels developed for portable radio cassette tape recorder with power ON/OFF switch.
Because of he parts reduction and SIP (Single Inline Package), space merit is remarkable.
Thermal shut down protection circuit is built in.



DIM	MILLIMETERS
A	29.7±0.2
B	4.0±0.2
D1	0.6±0.1
D2	0.7±0.1
d	0.5±0.1
F	28.0±0.2
G	0.5±0.2
H1	8.5±0.3
H2	15.0±0.3
L1	2.5±0.2
L2	5.5±0.2
P	2.54
Q	R1.6
R	0.4
S	22.0±0.2
T	0.4+0.1/−0.05

SSIP-12

FEATURES

- High Power
  : P_{OUT}=2.5W/CH (Typ.)
  (V_{CC}=9V, R_L=4Ω, f=1kHz, THD=10%)
  : P_{OUT}=4.6W/CH (Typ.)
  (V_{CC}=12V, R_L=4Ω, f=1kHz, THD=10%)
- Low Popping Noise at Power ON.
- Small Quiescent Current
  : I_{CCQ}=21mA(Typ.) (V_{CC}=9V, V_{IN}=0)
- Soft Clip
- Built-in Thermal Shut Down Protection Circuit.
- Best for Supply Voltage 9V, 12V
- Operation Supply Voltage Range
  : V_{CC}=6~15V

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	20	V
Output Current (peak/ch)	$I_{O(Peak)}$	2.5	A
Power Dissipation	P_D	12.5	W
Operating Temperature	T_{opr}	-20~75	℃
Storage Temperature	T_{stg}	-55~150	℃

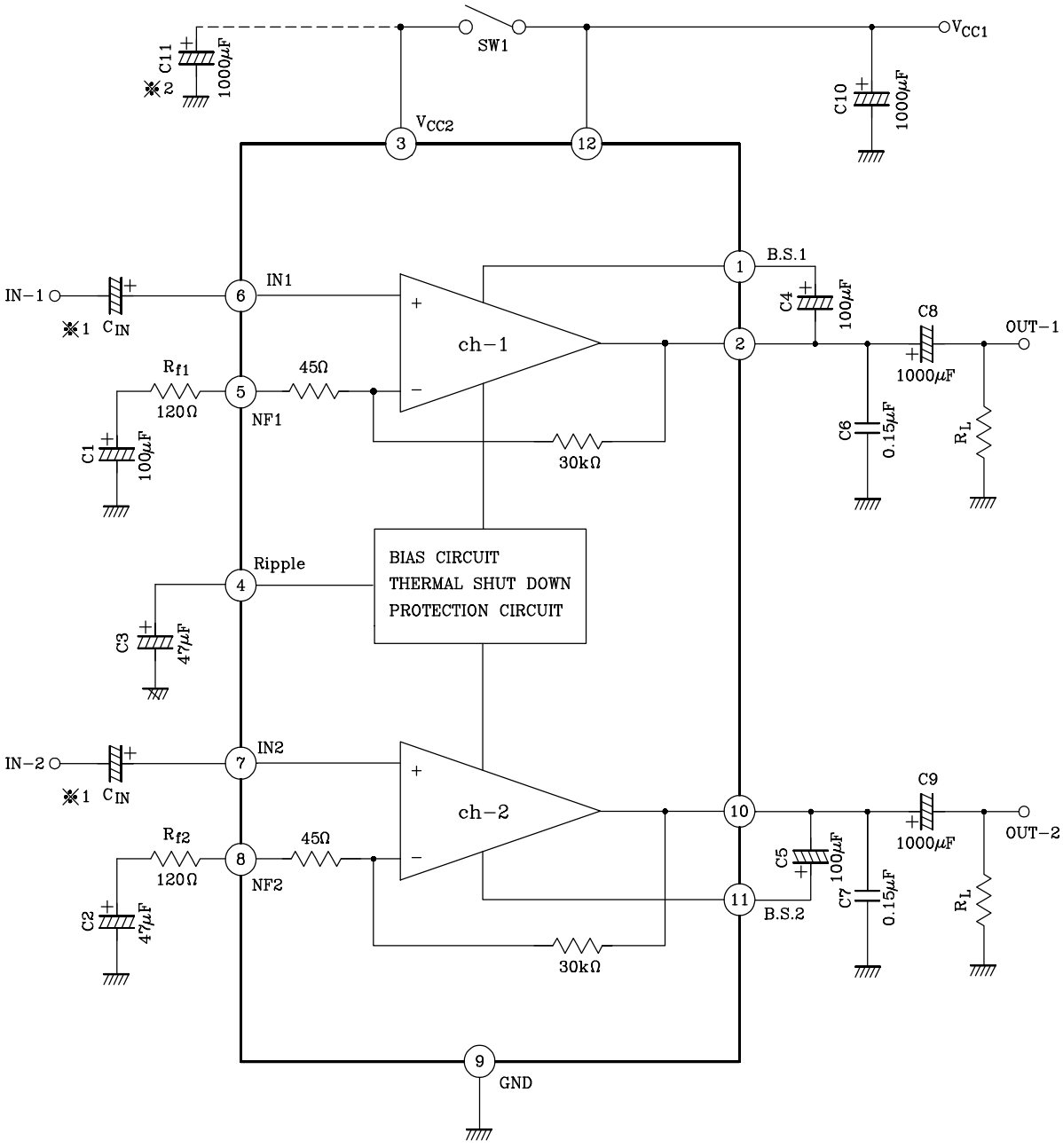
ELECTRICAL CHARACTERISTICS
(Unless otherwise specified, V_{CC}=9V, R_L=4Ω, Rg=600Ω, f=1kHz, Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{CCQ}	-	V_{IN}=0	-	21	45	mA
Output Power	$P_{OUT(1)}$	-	THD=10%	2.0	2.5	-	W
	$P_{OUT(2)}$	-	THD=10%, V_{CC}=12V	-	4.6	-	
Total Harmonic Distortion	THD	-	P_{OUT}=0.4W/ch	-	0.2	1.0	%
Voltage Gain	G_V (1)	-	R_f=120Ω, V_{OUT}=0.775Vrms	43	45	47	dB
	G_V (2)	-	R_f=0Ω, V_{OUT}=0.775Vrms	-	56.5	-	
Input Resistance	R_{IN}	-	-	-	30	-	kΩ
Output Noise Voltage	V_{NO}	-	Rg=10kΩ, BW=20Hz~20kHz	-	0.3	1.0	mV_{rms}
Ripple Rejection Ratio	R.R	-	Rg=600Ω, f_{ripple}=100Hz	-	52	-	dB
Cross Talk	C.T	-	Rg=600Ω, Amp1↔2 V_{OUT}=0dBm, f=1kHz	-	50	-	dB
Input Offset Voltage	V_6, V_7	-	-	-	30	60	mV
Stand-by Current	I_{OFF}	-	SW1→OFF	-	1	-	μA

TYPICAL DC VOLTAGE OF EACH TERMINAL (V_{CC}=9V, Ta=25℃)

TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12
DC VOLTAGE (V)	8.7	4.5	VCC	5.0	0.7	0.03	0.03	0.7	GND	4.5	8.7	VCC

BLOCK DIAGRAM / TEST CIRCUIT



* 1 This IC can be used without coupling capacitor (C_{IN}). If volume slide noise occurred by input offset voltage is undesirable, it needs to use the capacitor (C_{IN}).

* 2 The condenser between the pin ③ and the GND (C11) is for reducing pop noise when the power ON/OFF switch (SW1) is set to ON/OFF.

6. INPUT VOLTAGE

When the excessive signal is input, turning-up is produced in the clip waveform. The turning-up point is V_{IN}=30mV_{rms}(Typ.) : V_{CC}=9V, R_L=4Ω, f=1kHz : Enough care must be taken for this phenomenon.

7. GND LINE

GND pin is not separated for Pre-GND and for PW-GND. That is liable to cause distortion and cross talk worse. Before use this IC, please check it.

EXAMPLE OF PC BOARD PATTERN