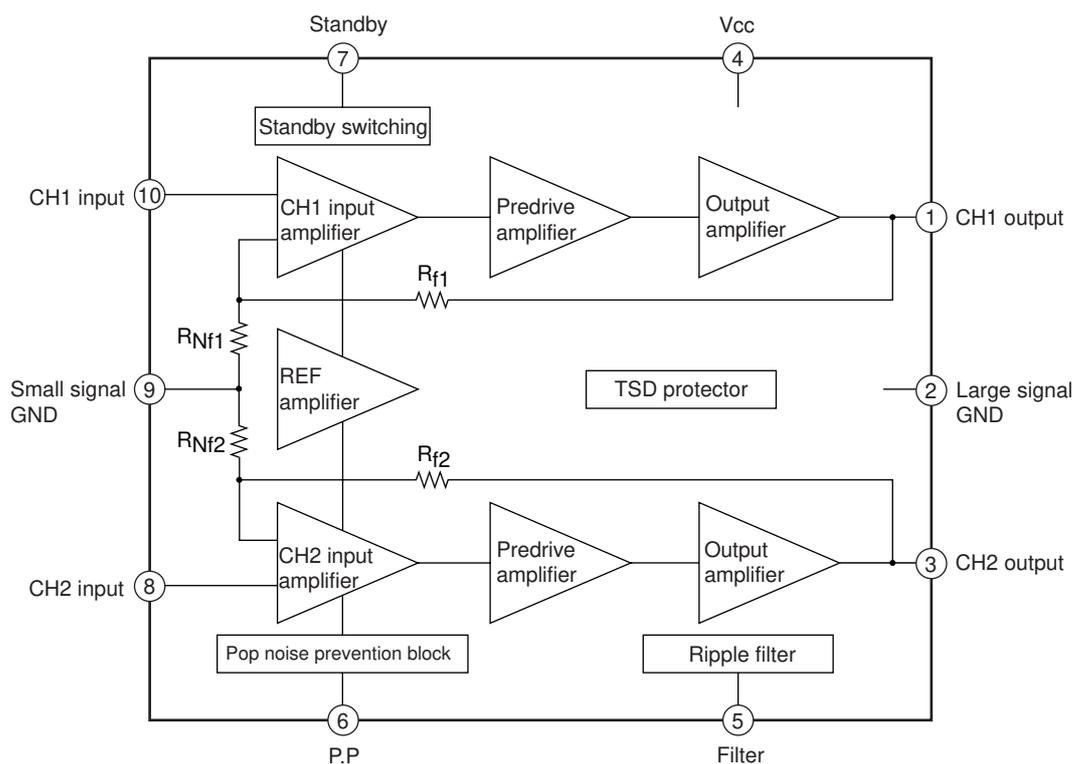


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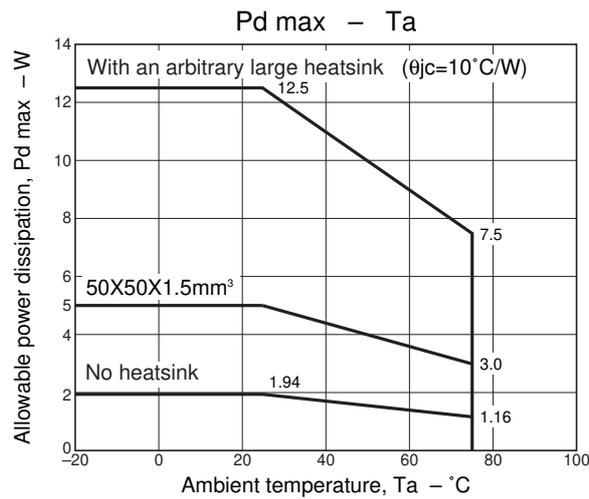
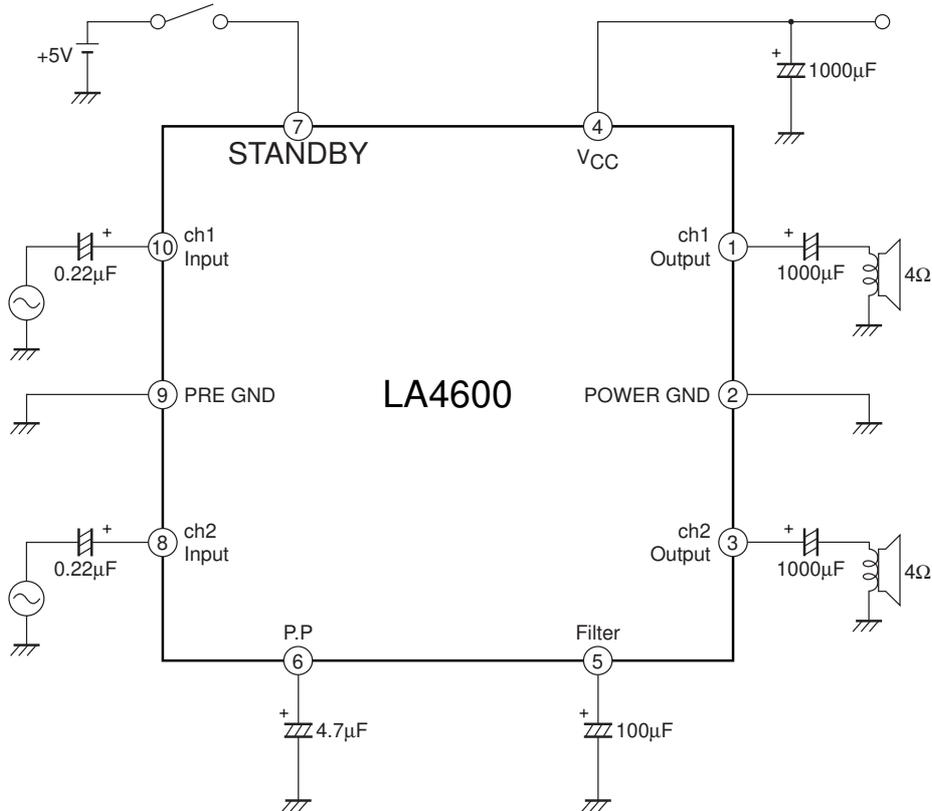
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{cc}=12\text{V}$, $R_L=4\Omega$, $f=1\text{ kHz}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Standby current	I_{st}	Standby pin \rightarrow GND	—	1.0	10	μA
Quiescent current	I_{cco}	$R_g=0$	18	32	64	mA
Voltage gain	VG	$V_o=0\text{dBm}$	43.0	45.0	47.0	dB
Total harmonic distortion	THD	$P_o=1\text{w}$	—	0.2	0.8	%
Output noise voltage	V_{no}	$R_g=0$, DIN AUDIO	—	0.15	0.5	mV
Output voltage	P_{o1}	THD=10%	3.0	4.0	—	W
	P_{o2}	$V_{cc}=9\text{V}$, THD=10%	1.5	2.0	—	W
Channel separation	Chsep	$V_o=0\text{dBm}$, $R_g=0$, DIN AUDIO	50	60	—	dB
Ripple rejection ratio	SVRR	$V_r=0\text{dBm}$, $R_g=0$, $f_r=100\text{ Hz}$ DIN AUDIO	45	55	—	dB
Standby ON voltage	V_{st}		1.5	5.0	—	V
Input resistance	R_i		20	30	40	$\text{K}\Omega$

Block Diagram



Sample Application



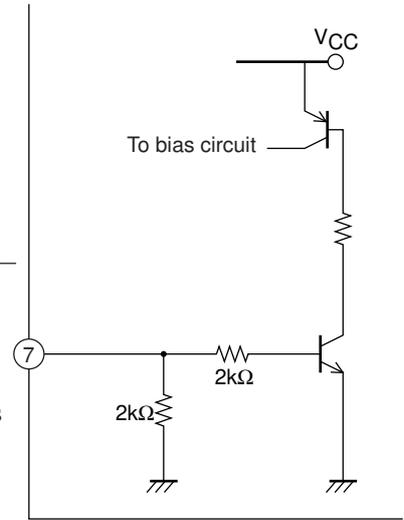
Pin Descriptions

1. Standby switching function (7)

Power is switched ON and OFF by controlling the High and Low states at pin 7, respectively (standby). To switch power ON, apply 1.5V or more, or 800 μ A to pin 7.

$$\text{Current supplied to pin 7} \approx \frac{\text{Applied voltage}}{2 \text{ k}\Omega} + \frac{\text{Applied voltage} - V_{BE} \text{ (approx. 0.7V)}}{2 \text{ k}\Omega}$$

- When directly connecting a microcontroller with this pin, add a resistor in series to optimize the current for the microcontroller.



2. Input pins (8,10)

Voltage at the input pins is approx. $2 V_{BE}$ (1.4V).

Input impedance is approx. 30 k Ω .

- The recommended value for the input capacitor is 0.22 μ F, but this can be varied in order to adjust the starting time (t_s). (The starting time is the time required from applying voltage to the standby pin until sound output is obtained.)

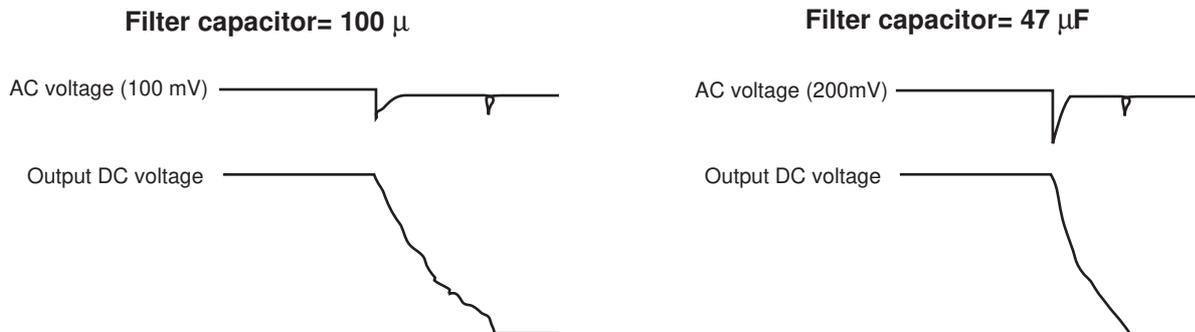
Input capacitor	1.0 μ F	2.0 μ F	3.3 μ F	4.7 μ F	10 μ F
Starting time (t_s)	0.2s	0.3s	0.5s	0.65s	1.5s

3. Filter (decoupling) pin (5)

Pin voltage is approx. $1/2 V_{CC}$.

The recommended value for the filter capacitor is 100 μ F.

When capacitance is lower, pop noise when setting the standby pin to Low (power OFF) will increase.

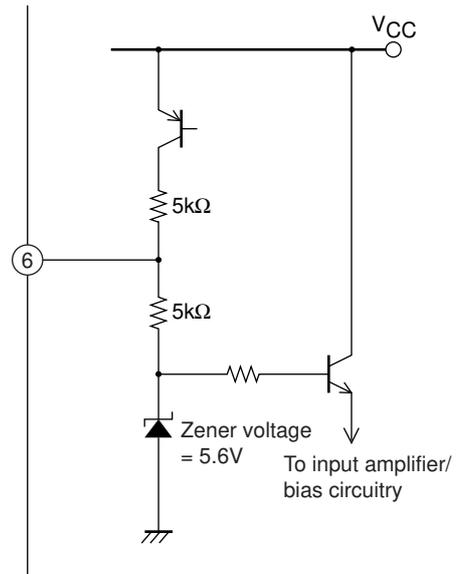


4. P.P (pop noise) pin (6)

$$\text{Voltage at pin 6} \doteq \frac{V_{CC} - V_{CE} (\text{approx. } 0.3\text{V}) - 5.6\text{V}}{2} + 5.6\text{V}$$

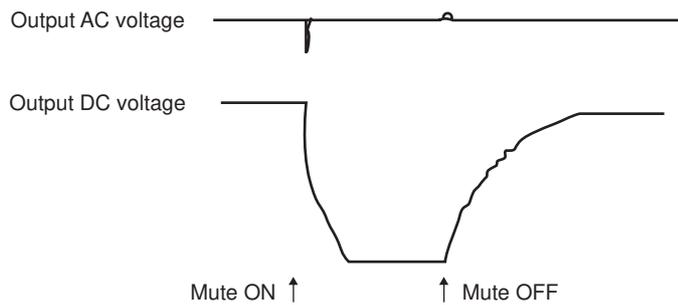
- The recommended value for the P.P capacitor is 4.7 μF .
When capacitance is lower than 2.2 μF , pop noise when setting the standby pin to Low (power OFF) will increase.

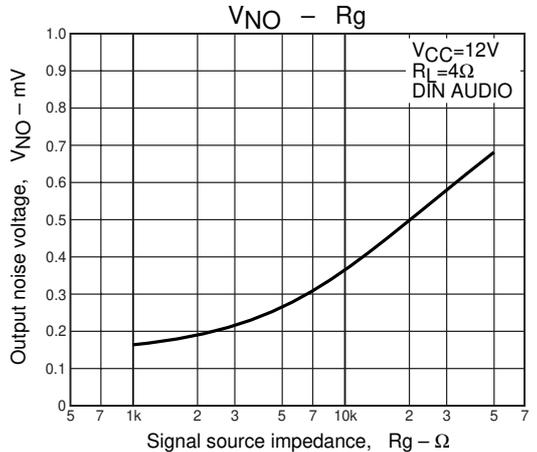
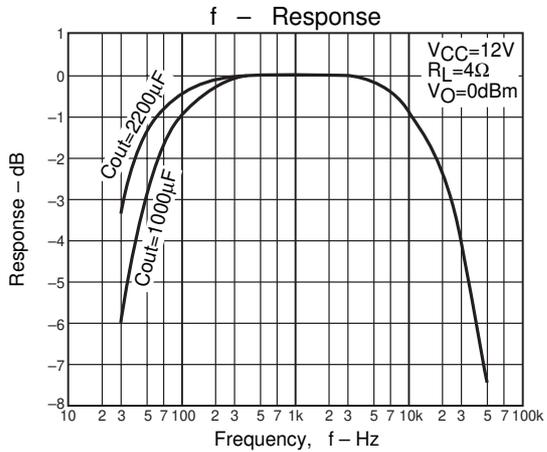
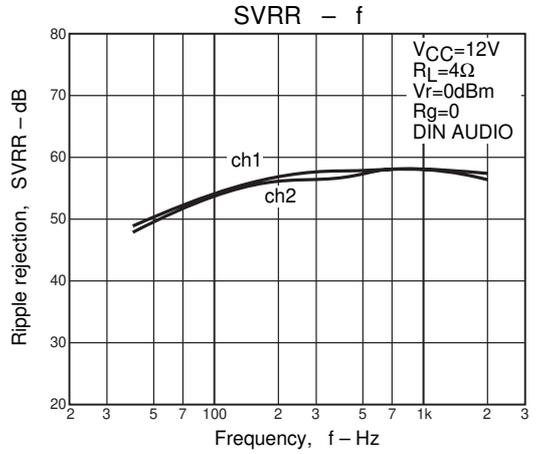
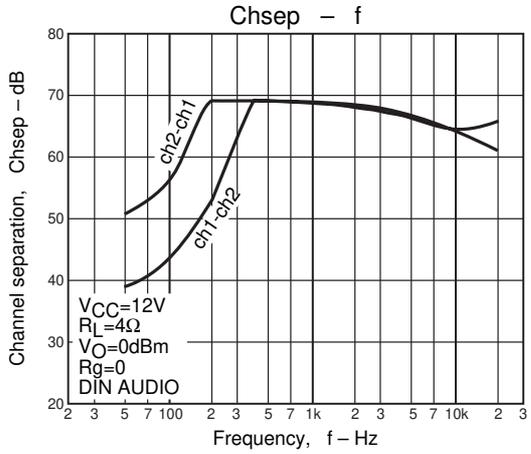
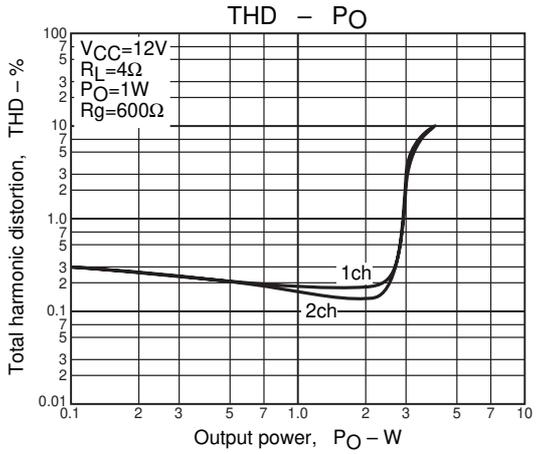
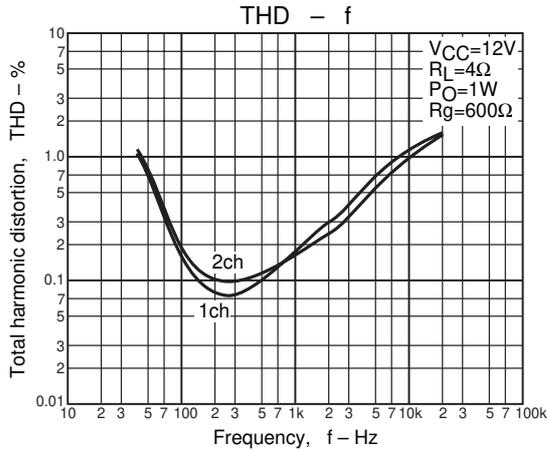
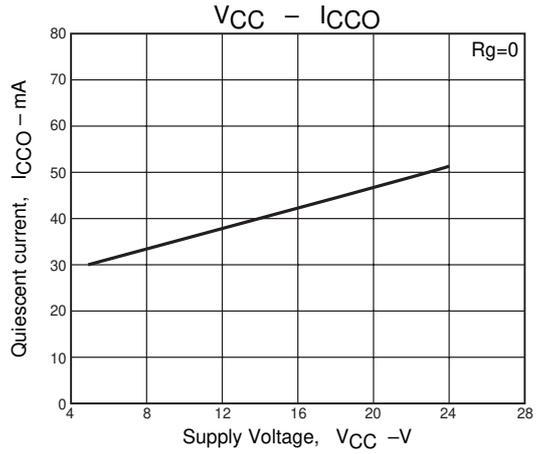
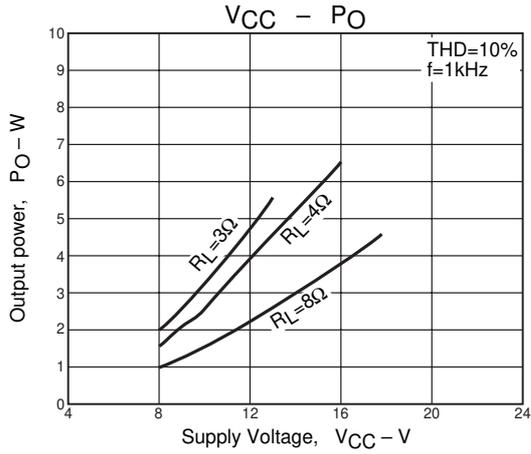
When capacitance is higher than 10 μF , the sound will not be cut off when setting the standby pin to Low (power OFF).

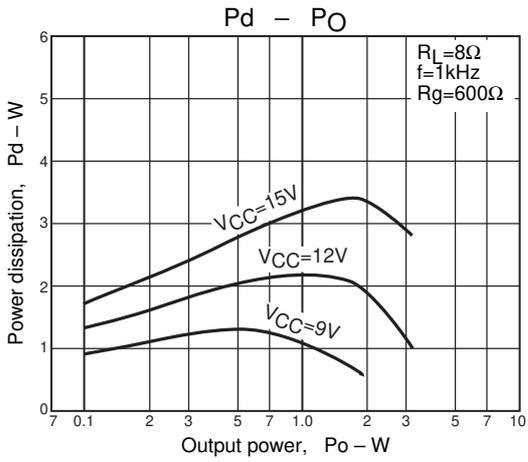
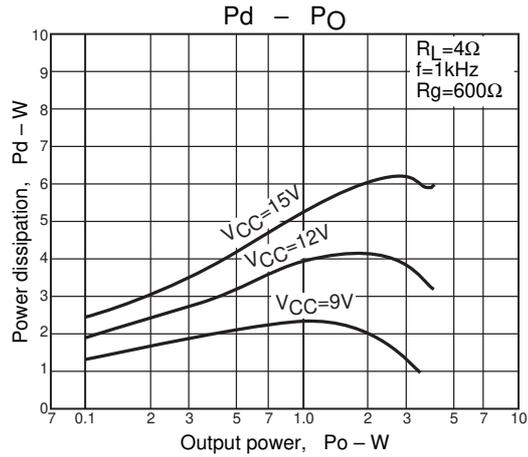
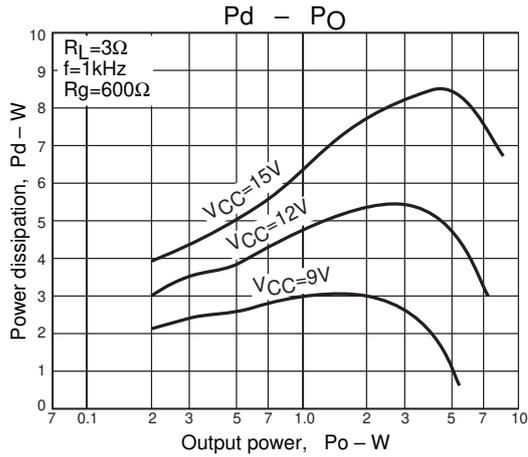


5. Muting

The output signal can be controlled by connecting pin 5 (Filter) to ground via a resistance of 300 to 500 Ω . If resistance is higher than 750 Ω , the suppression ratio will decrease.







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