

**LA4260**

2.5 W 2-Channel AF Power Amplifier for Home Stereos and Music Centers

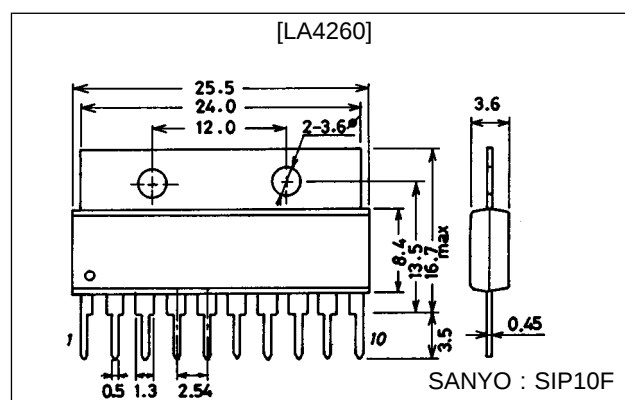
Features

- Minimum number of external parts required (No input capacitor, bootstrap capacitor required).
- High output: 2.5 W typ. $\times 2$.
- Soft clip, causing little harmonic disturbance to radios (See page 8).
- Small pop noise at the time of power switch ON/OFF (See page 8).
- Built-in protector against abnormal modes (Thermal shutdown, overvoltage).

Package Dimensions

3018A-SIP10F

unit : mm



Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

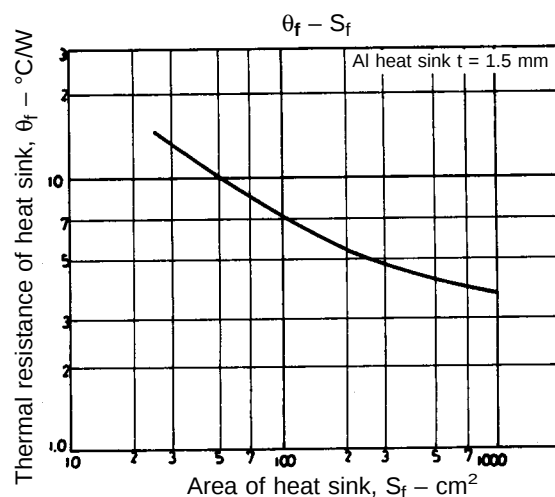
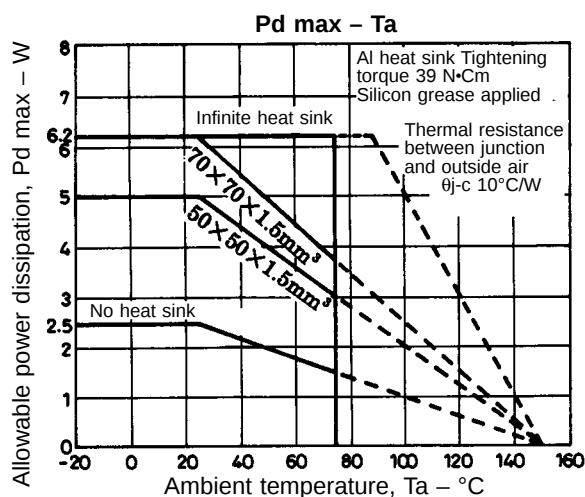
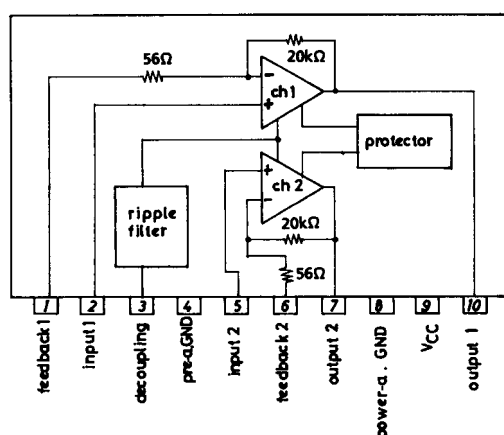
Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\max}$		22	V
Maximum output current	I_{OP}	1 channel	2.0	A
Allowable power dissipation	$P_d \max$	With heat sink (see $P_d - T_a$ characteristics)	6.2	W
Operating temperature	T_{opr}		-20 to $+75$	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to $+150$	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		14	V
Recommended load resistance	R_L		8	Ω
Operating supply voltage range	$V_{CC \text{ op}}$		9 to 21	V

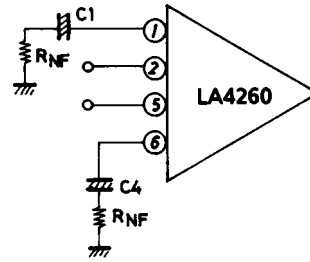
Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 14\text{ V}$, $R_L = 8\ \Omega$, $f = 1\text{ kHz}$, $R_g = 600\ \Omega$, (circuit 1)

Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	I_{CCO}			45	60	mA
Voltage gain	VG		48	50	52	dB
Output power	P_O	THD = 10%	2.0	2.5		W
Total harmonic distortion	THD	$P_O = 0.5\text{ W}$		0.3	1.0	%
Output noise voltage	V_{NO}	$R_g = 10\text{ k}\Omega$, BW = 20 Hz to 20 kHz		0.65	1.5	mV
Ripple rejection ratio	Rr	$R_g = 0$, $V_r = 500\text{ mV}$	40	50		dB
Crosstalk	CT	$R_g = 10\text{ k}\Omega$	40	55		dB
Voltage gain difference	ΔVG				1.5	dB

Equivalent Circuit Block Diagram


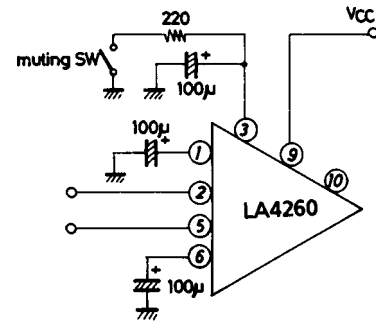
Note for Changing Voltage Gain

Basically, the voltage gain can be reduced by adding external resistors (R_{NF}) in series with feedback capacitors $C1$, $C4$. However, it should be noted that since there is no phase compensation pin the frequency response is extended and oscillation is liable to occur when the voltage gain is reduced. The voltage gain must not be reduced to be less than 30 dB.



External Muting

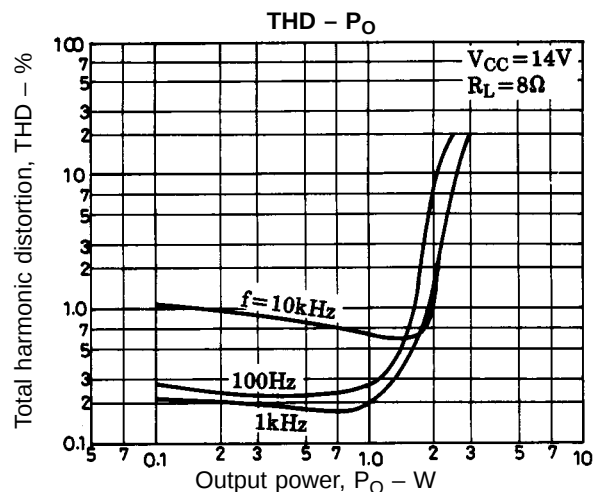
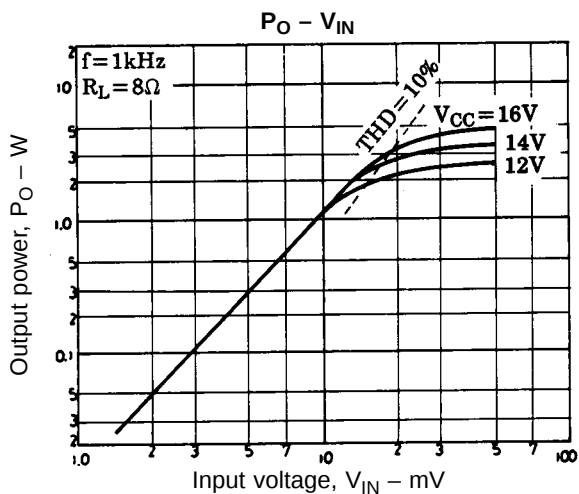
If external muting is required, make the circuit as shown right. In this case, the attack time, recovery time, and pop noise are similar to those which occur at the time of power switch ON/OFF.

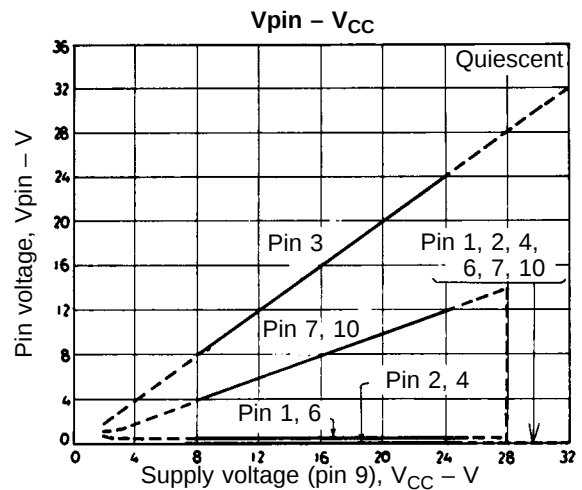
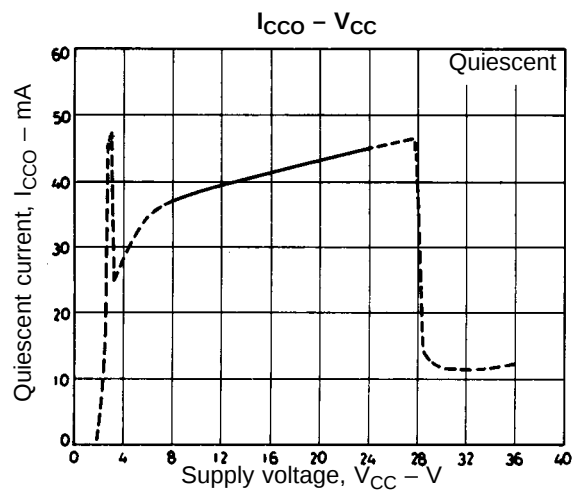
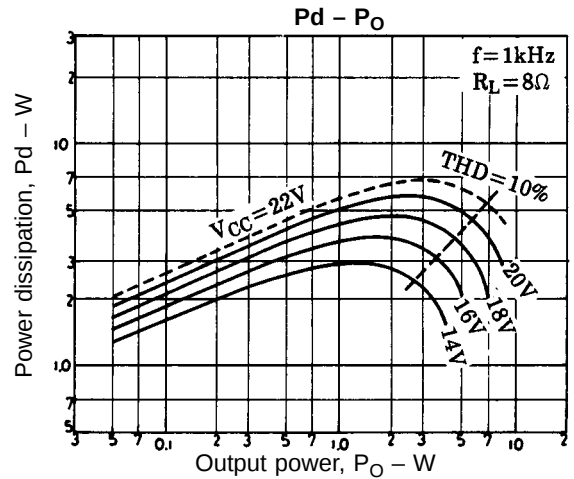
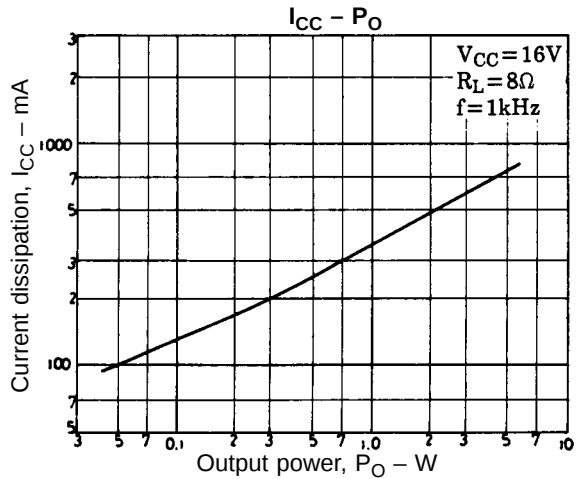
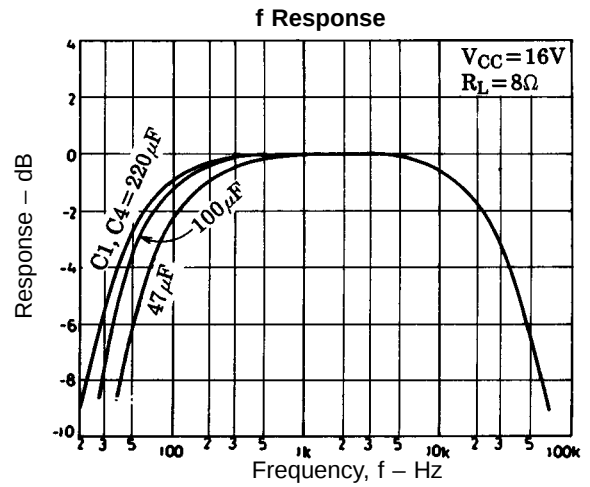
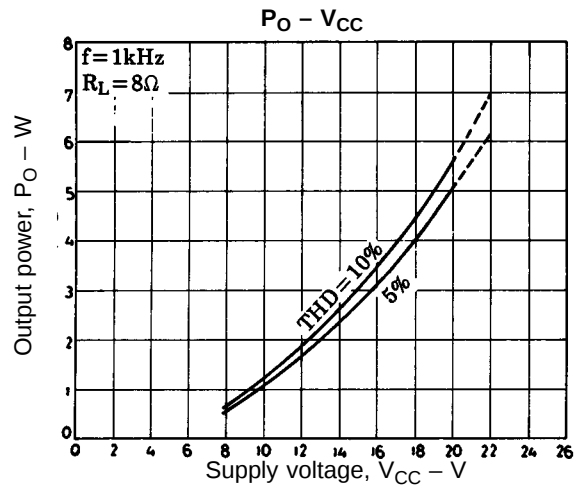
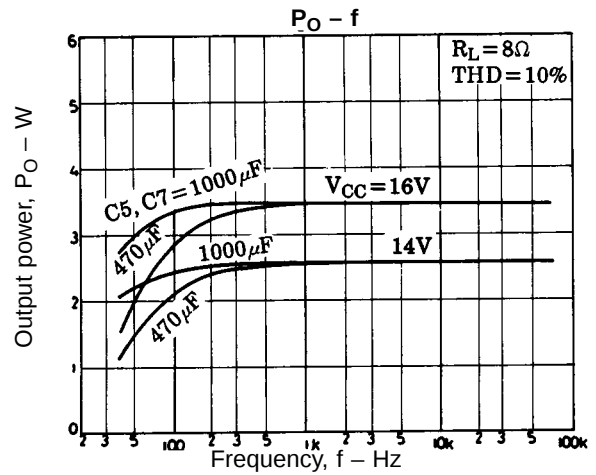
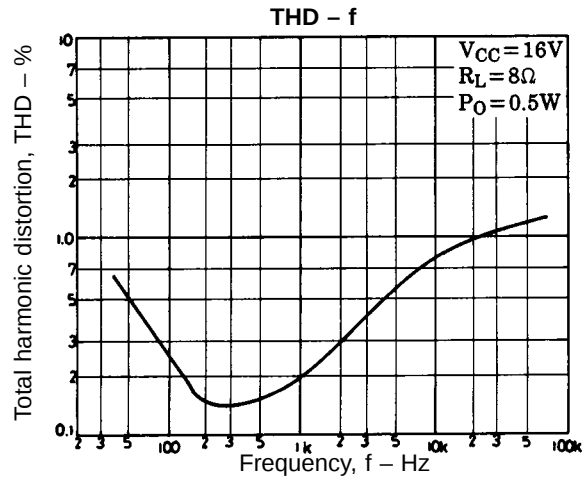


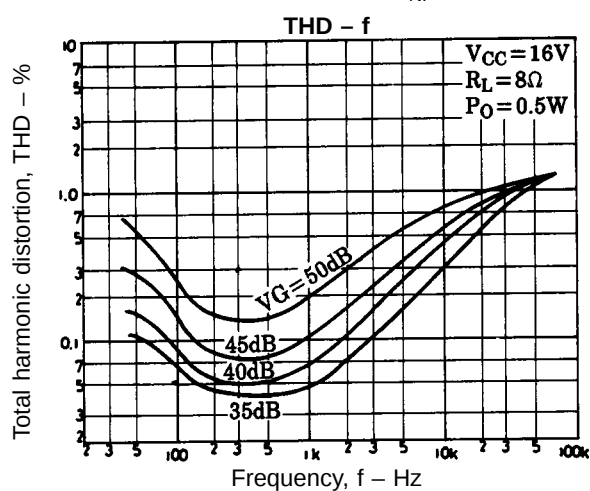
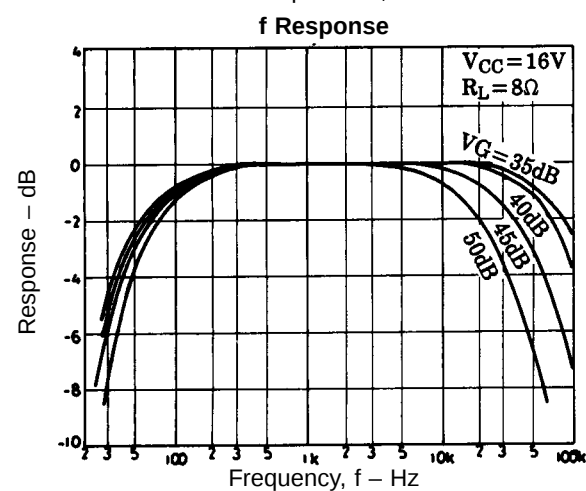
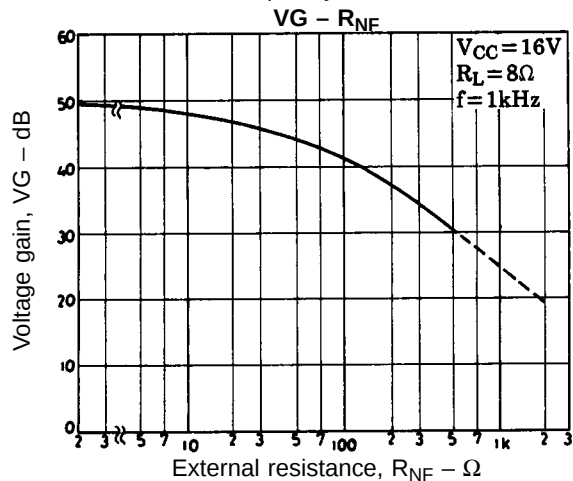
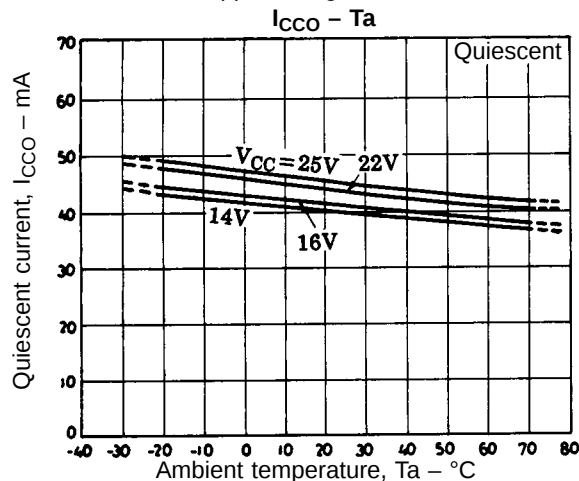
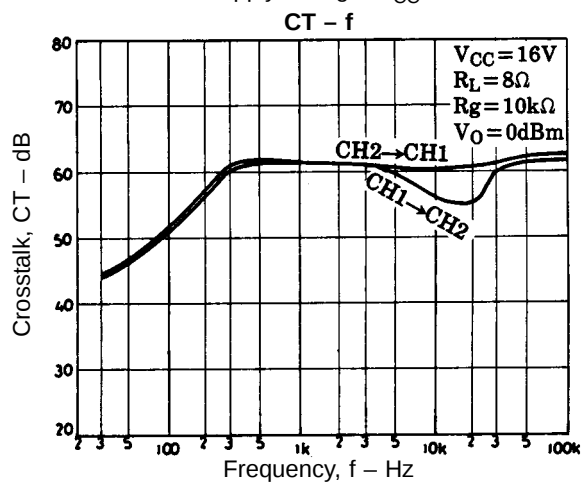
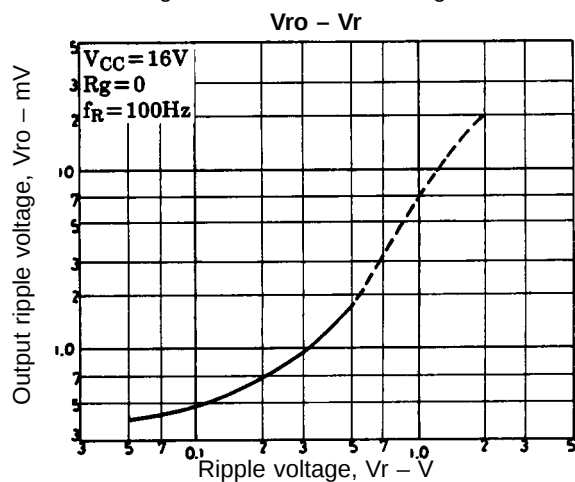
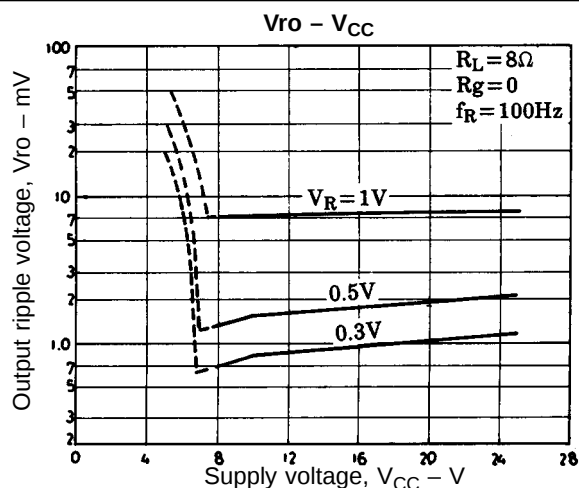
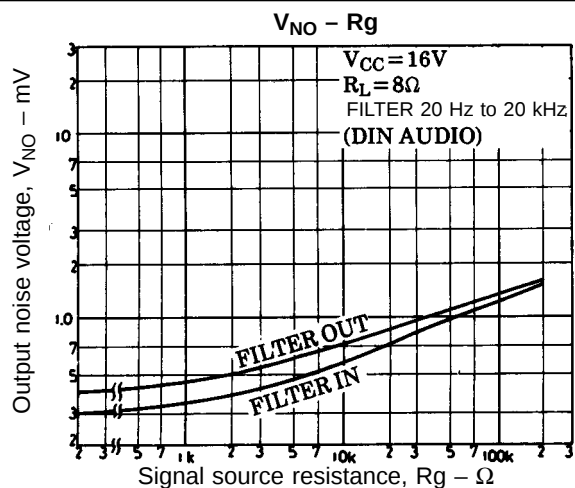
Unit (resistance: Ω , capacitance: F)

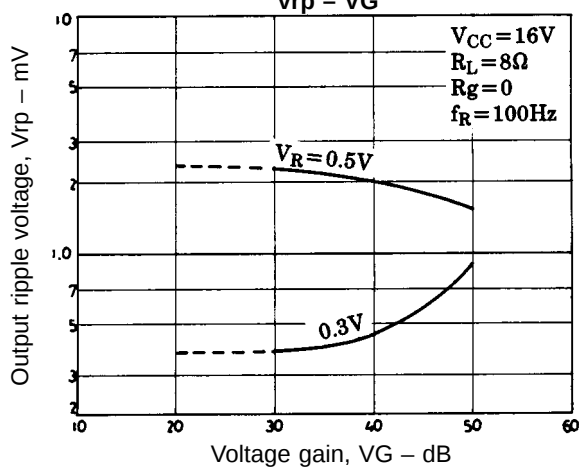
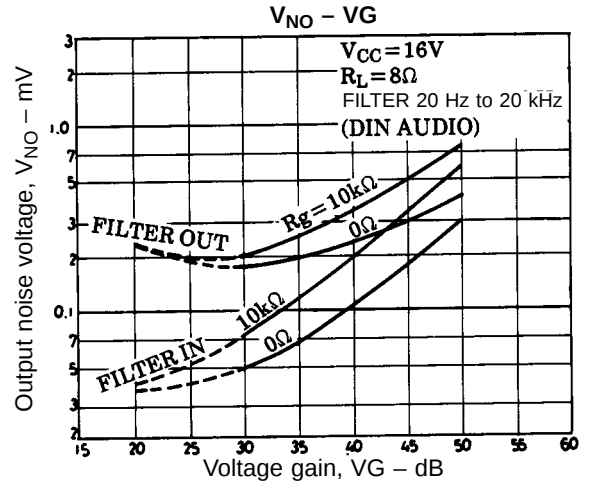
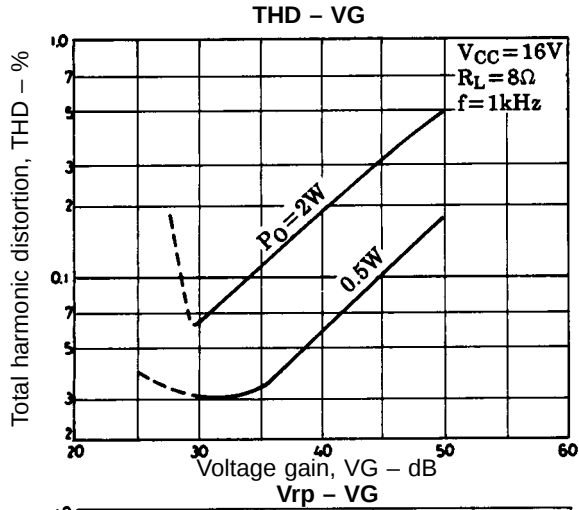
Proper Cares in Using IC

- Maximum ratings
If the IC is used in the vicinity of the maximum ratings, even a slight variation in conditions may cause the maximum ratings to be exceeded, thereby leading to breakdown. Allow an ample margin of variation for supply voltage, etc. and use the IC in the range where the maximum ratings are not exceeded.
- Pin-to-pin short
If power is applied when the space between pins is shorted, breakdown or deterioration may occur. When mounting the IC on the board or applying power, make sure that the space between pins is not shorted with solder, etc.
- When using in radios, allow a sufficient space between IC and bar antenna.
- Printed circuit pattern
When designing the printed circuit pattern, make the power supply, output, and ground lines thick and short and arrange the pattern and parts so that no feedback loop is formed between input and output. Place power capacitor $C9$, oscillation blocking capacitors $C6$, $C8$ as close to IC pins as possible to prevent oscillation from occurring. Refer to the sample printed circuit pattern.

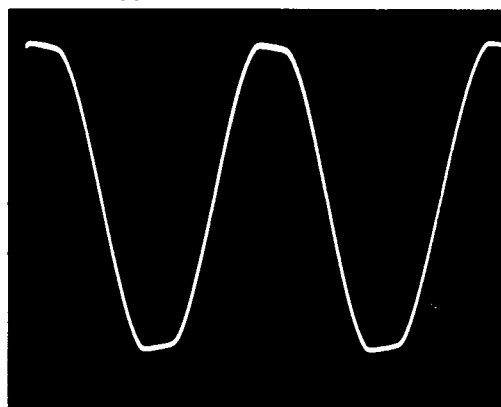
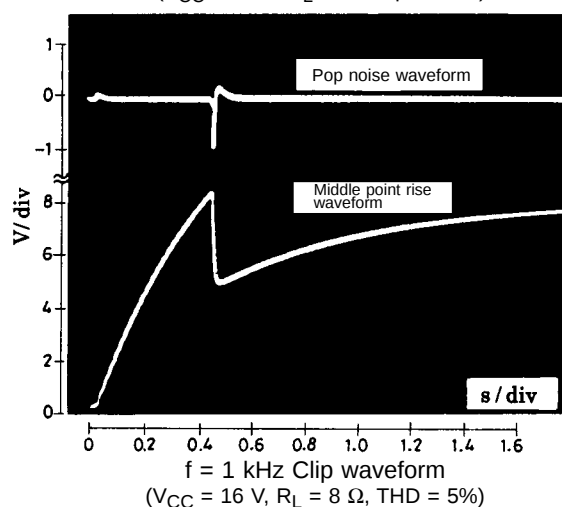




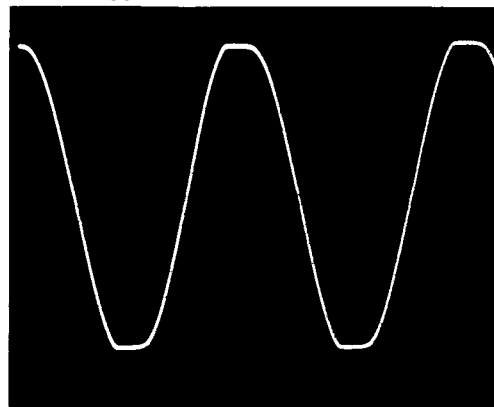
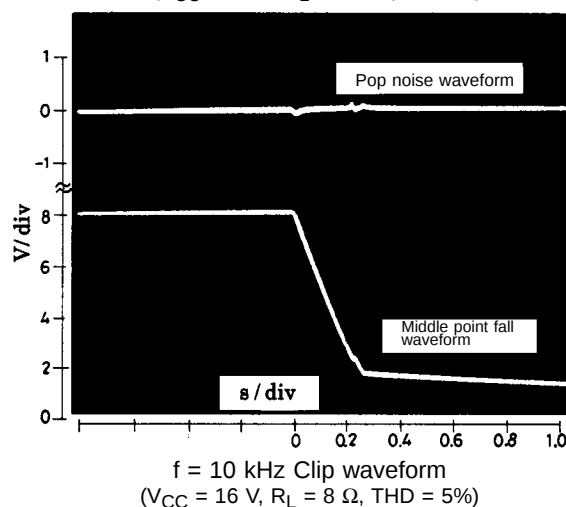




Pop Noise Waveform at The Time of Power Switch ON
($V_{CC} = 16\text{ V}$, $R_L = 8\ \Omega$, quiescent)



Pop Noise Waveform at The Time of Power Switch OFF
($V_{CC} = 16\text{ V}$, $R_L = 8\ \Omega$, quiescent)



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