

AN7320

前置増幅回路 / Pre-Amplifier Circuit

■ 概要

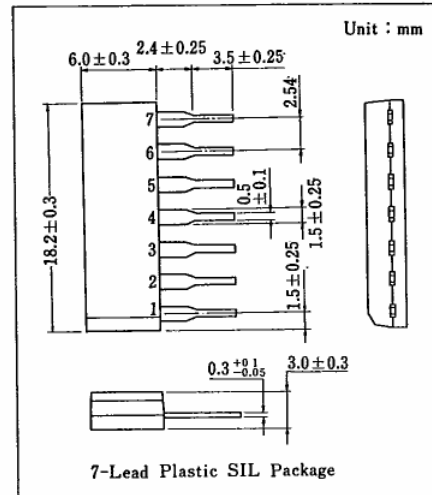
AN7320 は、低電圧動作のプリアンプ用半導体集積回路です。

■ 特徴

- 高利得・高出力で、低歪率・低雑音
- 動作電源電圧範囲が広い: $V_{CC} = 2.2\text{ V} \sim 14.4\text{ V}$
- ALC 範囲が広い (Input: $0.1\text{ mV} \sim 10\text{ mV}$)

■ Features

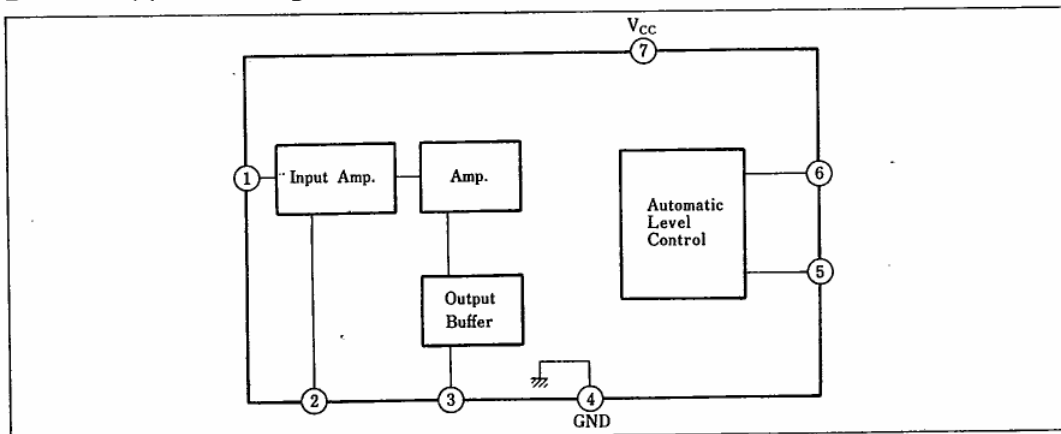
- High gain, high power, low distortion and low noise
- Wide supply voltage range ($V_{CC} = 2.2\text{ V} \sim 14.4\text{ V}$)
- Wide automatic level control (ALC)
(Input: $0.1\text{ mV} \sim 10\text{ mV}$)



■ 端子名 / Pin

Pin No.	端子名	Pin Name
1	入力	Input
2	負帰還	Neg. Feedback
3	出力	Output
4	アース	GND
5	ALC 出力	ALC Output
6	ALC 入力	ALC Input
7	電源電圧	V_{CC}

■ ブロック図 / Block Diagram



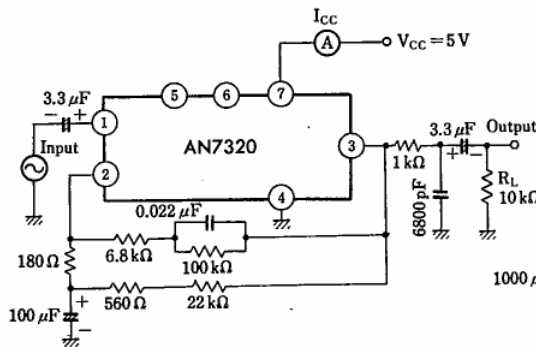
■ 絶対最大定格/Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Rating	Unit
電源電圧	V_{CC}	14.4	V
電源電流	I_{CC}	10	mA
回路電流	I_S	80	mA
許容損失 ($T_a = 75^\circ\text{C}$)	P_D	270	mW
動作周囲温度	T_{opr}	$-25 \sim +75$	$^\circ\text{C}$
保存温度	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

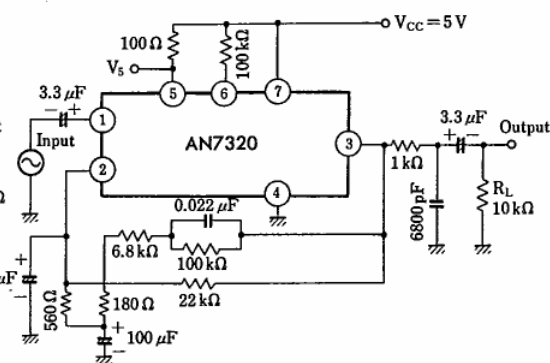
■ 電気的特性/Electrical Characteristics ($V_{CC} = 5\text{V}$, $R_L = 10\text{k}\Omega$, $f = 1\text{kHz}$, $T_a = 25^\circ\text{C}$)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
静止回路電流	I_{CO}	1	$V_i = 0\text{mV}$	0.9	1.5	2.2	mA
開回路電圧利得	G_{VO}	2	$V_i = -80\text{dB}$		-70		dB
閉回路電圧利得	G_{VC}	1	$V_i = -50\text{dB}$		33.5		dB
出力電圧	V_O	1	THD=1%	0.7	1		V
入力抵抗	R_i	1			100		k Ω
入力換算雑音電圧	V_{ni}	1	$R_s = 2.2\text{k}\Omega$		1.2	2	μV
ALC Tr コレクタ電圧	V_5	2	①-⑥ 100 k Ω , ⑦-⑤ 100 Ω		0.7		V

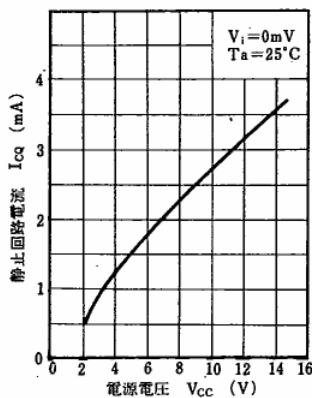
Test Circuit 1 (I_{CO} , G_{VC} , V_O , R_i , V_{ni})



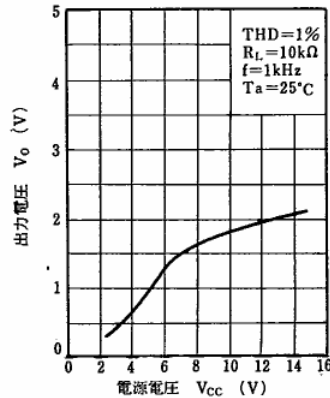
Test Circuit 2 (G_{VO} , V_5)



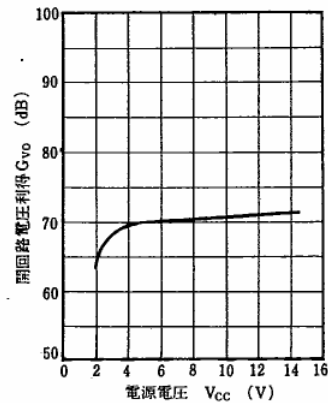
$I_{CO} - V_{CC}$

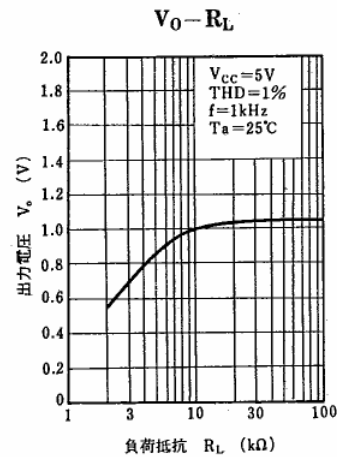
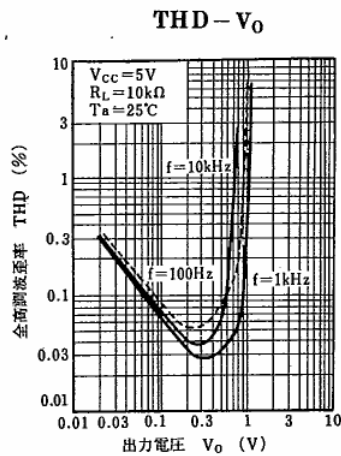
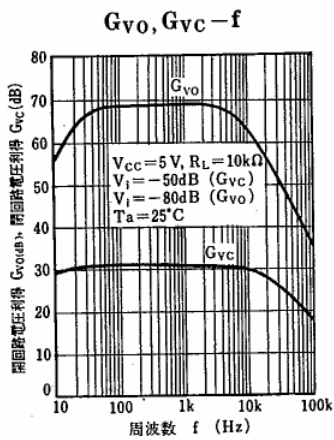


$V_O - V_{CC}$

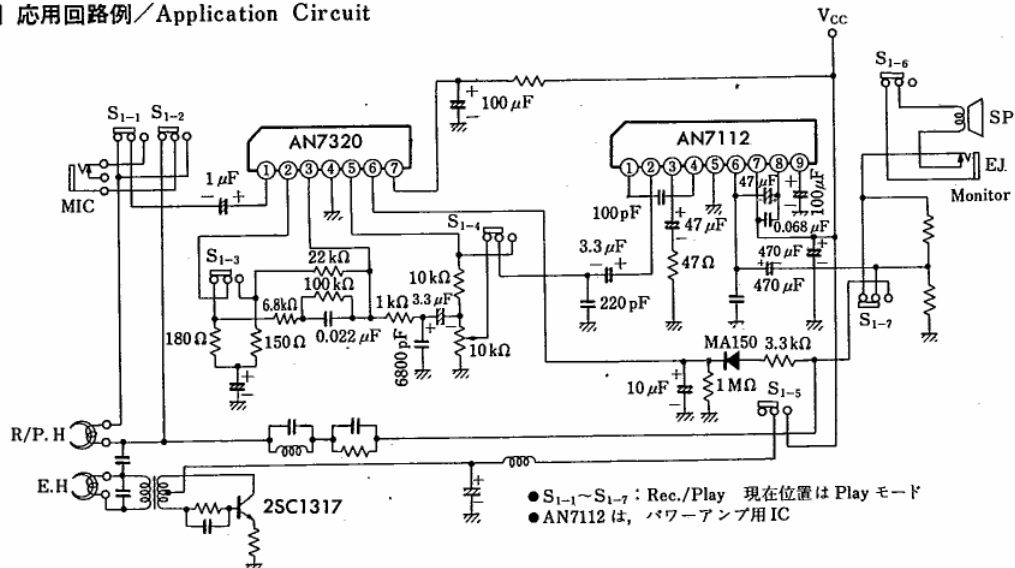


$G_{VO} - V_{CC}$





■ 応用回路例 / Application Circuit



■ プリント板パターン例 / Printed Circuit Board Layout

