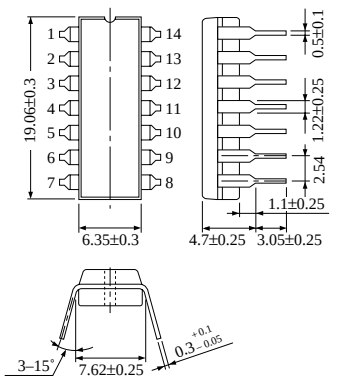
AN1324 (AN6564), AN1324NS (AN6564NS)

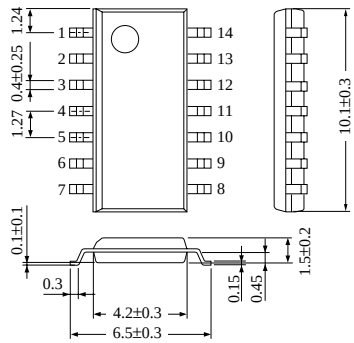
Quadruple Operational Amplifiers

AN1324 (AN6564) Unit :mm



14-pin DIL Plastic Package (DIP014-P-0300D)

AN1324NS (AN6564NS) Unit:mm



14-pin PANAFLAT Plastic Package (SOP014-P-0225A)

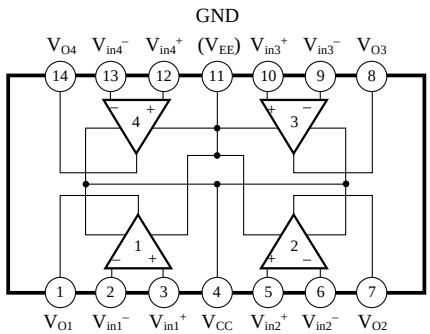
■ Overview

The AN1324 (AN6564)and the AN1324NS (AN6564NS)are quadruple operational amplifiers with phase compensation circuits built-in, and with wide range of operating voltages, allowing single power supply operation. They have electrical characteristics equal to the conventional operational amplifiers, and are low powered and suitable for application to various circuits.

■ Features

- Built-in phase compensation circuit
- Wide range of common-mode input voltage
  0V to V_{CC}–1.5V
- Wide range of operating voltages
  Single supply:3 to 30V
  Dual supply:±1.5 to 15V

■ Block Diagram



■ Pin Descriptions

Pin No.	Pin name	Pin No.	Pin name
1	Ch.1 output	8	Ch.3 output
2	Ch.1 inverting input	9	Ch.3 inverting input
3	Ch.1 non inverting input	10	Ch.3 non inverting input
4	V_{CC}	11	GND (V_{EE})
5	Ch.2 non inverting input	12	Ch.4 non inverting input
6	Ch.2 inverting input	13	Ch.4 inverting input
7	Ch.2 output	14	Ch.4 output

■ Absolute Maximum Ratings (Ta=25˚C)

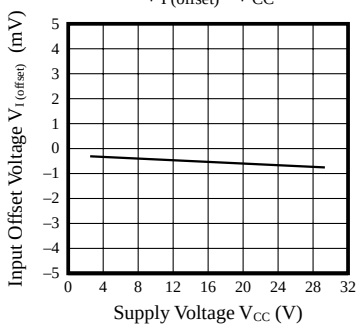
Parameter		Symbol	Rating	Unit
Voltage	Supply voltage	V_{CC}	32	V
	Differential input voltage	V_{ID}	32	V
	Common-mode input voltage	V_{ICM}	–0.3 to 32	V
	Output voltage	V_O	24	V
Power dissipation	AN1324 (AN6564)	P_D	570	mW
	AN1324NS (AN6564NS)		380	
Operating ambient temperature		T_{opr}	–20 to +75	˚C
Storage temperature	AN1324 (AN6564)	T_{stg}	–55 to +150	˚C
	AN1324NS (AN6564NS)		–55 to +125	

■ Electrical Characteristics (V_{CC}=5V, Ta=25˚C)

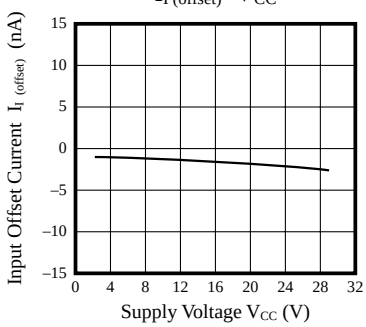
Parameter	Symbol	Condition	min	typ	max	Unit
Input offset voltage	$V_{I\ (offset)}$	R_S=50Ω	—	2	7	mV
Input bias current	I_{Bias}		—	—	500	nA
Input offset current	I_{IO}		—	—	50	nA
Common-mode input voltage range	V_{CM}		0	—	V_{CC}–1.5	V
Supply current	I_{CC}	R_L=∞	—	—	2	mA
Voltage gain	G_V	R_L≥2kΩ	—	100	—	dB
Maximum output voltage	$V_{O(max.)}$	R_L=2kΩ	V_{CC}–1.5	—	—	V
Common-mode rejection ratio	CMR		65	85	—	dB
Supply voltage rejection ratio	SVR		65	100	—	dB
Channel separation	CS	f=1kHz to 20kHz	—	120	—	dB
Output source current	$I_{O(source)}$	V_{in}^+=1V, V_{in}^-=0V	20	40	—	mA
Output sink current	I_{SINK}	V_{in}^+=0V, V_{in}^-=1V	10	20	—	mA

■ Characteristics Curve

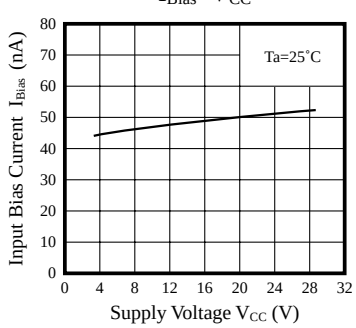
$V_{I\,(offset)}$–V_{CC}



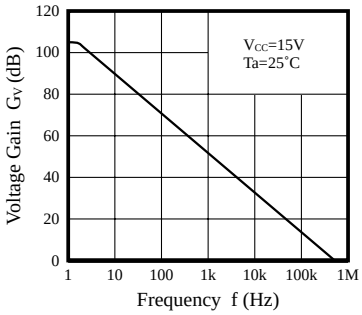
$I_{I\,(offset)}$–V_{CC}



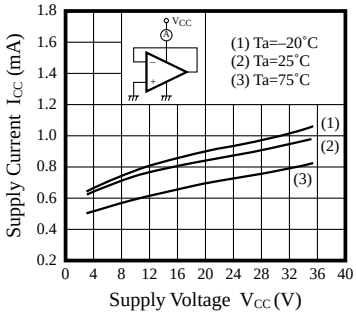
I_{Bias}–V_{CC}



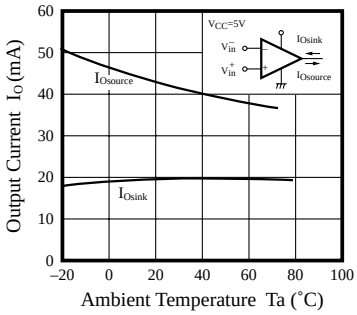
G_V–f



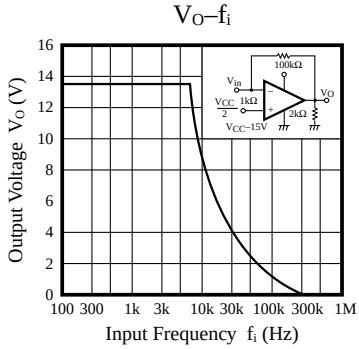
I_{CC}–V_{CC}



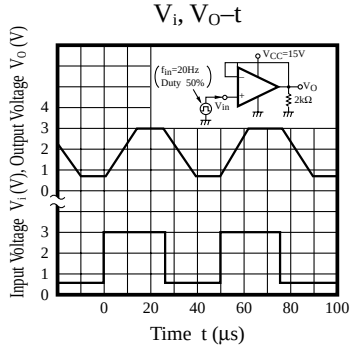
I_O–Ta



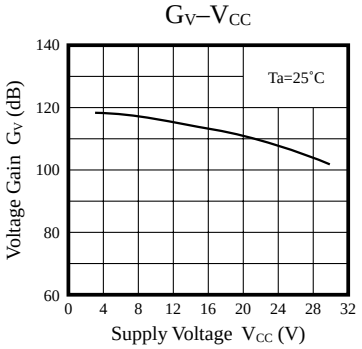
V_O–f_i



V_i, V_O–t

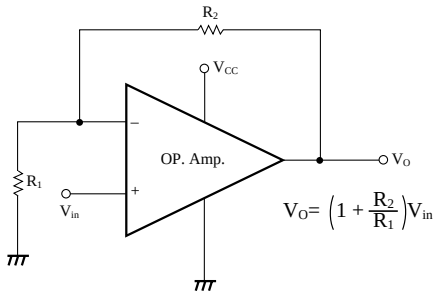


G_V–V_{CC}



■ Application Circuit

Positive Phase Amplifier



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