BM3414

Single-Supply Dual High

Current Operational/Audio Amplifier

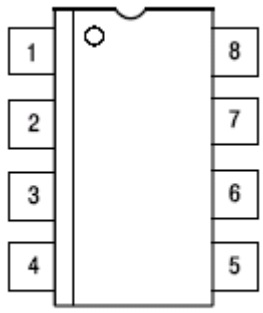
GENERAL DESCRIPTION

The BM3414 is integrated circuit is a high gain, high output current, high output voltage swing dual operational amplifier capable of driving 100mA, good for earphone output driver.

FEATURES

- Single Supply
- Operating Voltage (+3~+15V), much improved from CM8608 on input voltage.
- High Output Current (100mA)
- Slew Rate (1.0V/μs)
- Package Outline SOP8
- Bipolar Technology

PIN CONFIGURATION



(Top View)

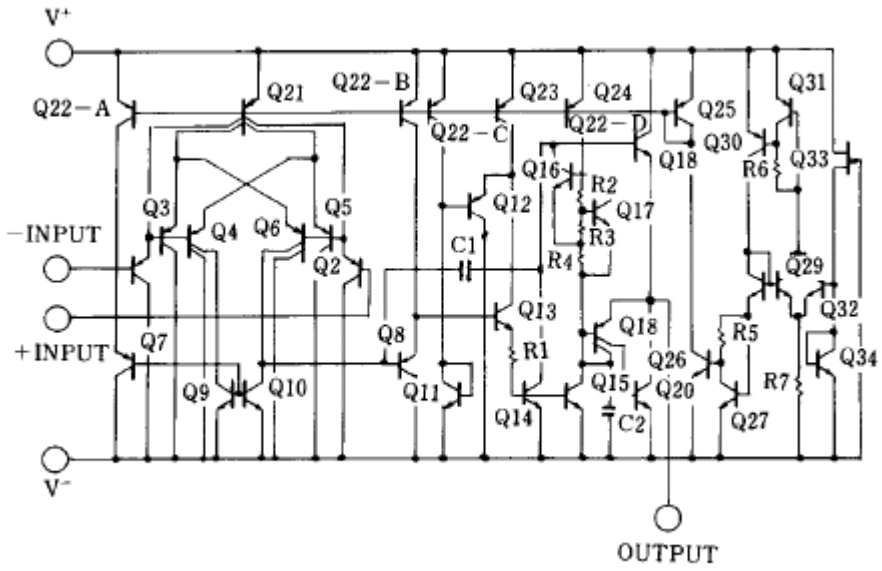
PIN FUNCTION

1 A OUTPUT
2 A-INPUT
3 A+INTPUT
4 GND
5 B+INPUT
6 B-INPUT
7 B OUTPUT
8 V^+

ABSOLUTE MAXIMUN RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+(V^+/V^-)$	15V(or ±7.5V)	V
Differential Input Voltage	V_{ID}	15	V
Input Voltage	V_{IC}	-0.3~+15	V
Power Dissipation	P_D	(DIP) 500 (SOP) 300	mW
Operating Temperature Range	T_{opr}	-20~+75	℃
Storage Temperature Range	T_{stg}	-40~+125	℃

EQUIVALENT CIRCUIT (1/2 Shown)



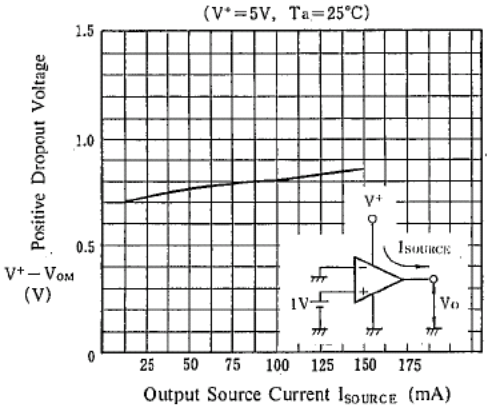
ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Offset Voltage	V_{IO}	R_s=0 Ω		2	5	mV
Input Offset Current	I_{IO}			5	100	nA
Input Bias Current	I_B			100	500	nA
Large Signal Voltage Gain	A_V	R_L=2K Ω	88	100		dB
Input Common Voltage Range	V_{ICM}		V^+-2			V
Maximum Output Voltage Swing 1	V_{OM1}	$R_L \geqslant$2K Ω , V^+=5V	3.5			V
Maximum Output Voltage Swing 2	V_{OM2}	I_O=70mA,V^+=5V	3.2			V
Common Mode Rejection Ratio	CMR		80	90		dB
Supply Voltage Rejection Ratio	SVR		80	90		dB
Operating Current	I_{CC}	R_L=∞	3	4	5	mA
Slew Rate	SR			1.0		V/μs
Gain Bandwidth Product	GB			1.3		MHZ
Operating Voltage Range	V^+				15	V

TYPICAL APPLICATIONS

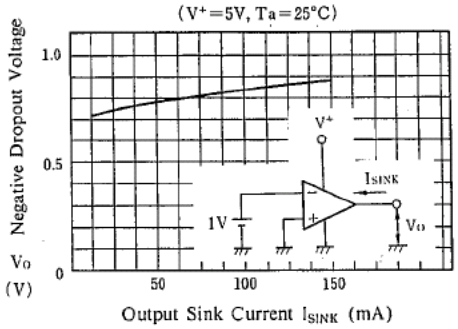
Output Source Current vs. V_{sat}^{+}

(V^+=5V, Ta=25°C)



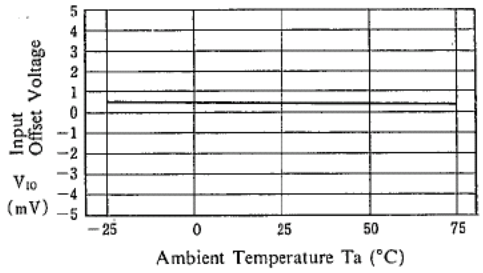
Output Sink Current vs. V_{sat}^{-}

(V^+=5V, Ta=25°C)



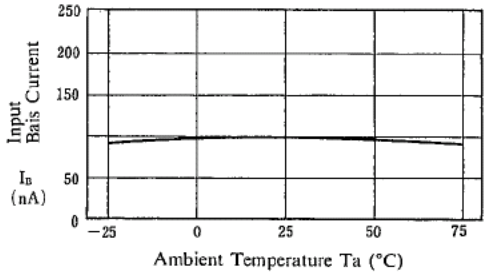
Input Offset Voltage vs. Temperature

(V^+/V^-=±4.3V)



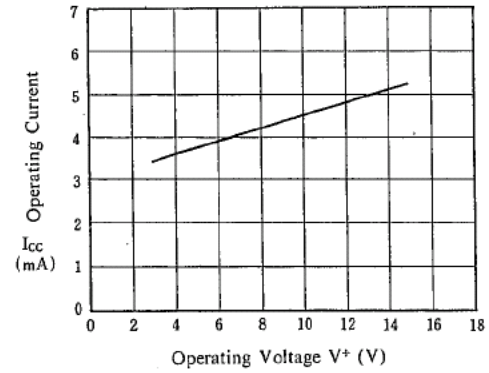
Input Bais Current vs. Temperature

(V^+/V^-=±4.3V)



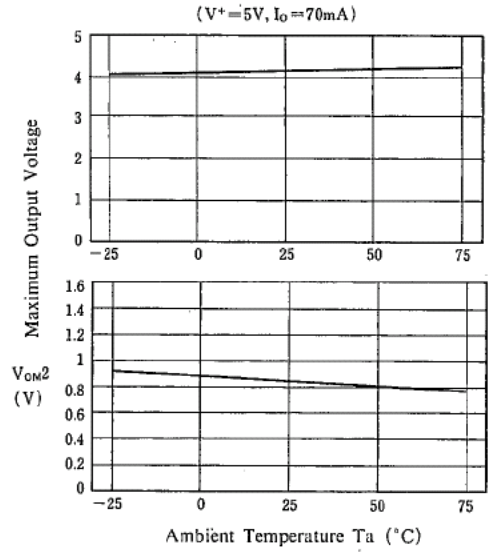
Operating Voltage vs. Operating Current

(Ta=25°)



Maximum Output Voltage Swing 2 vs. Temperature

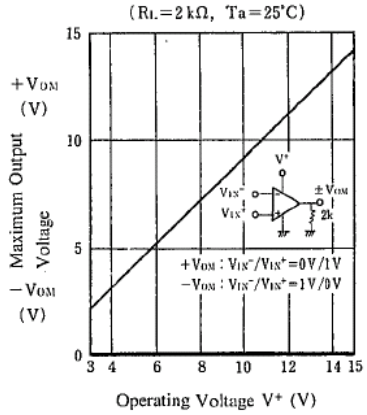
(V^+=5V, I_O=70mA)



TYPICAL APPLICATIONS

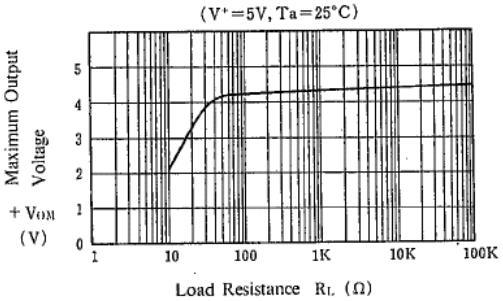
Maximum Output Voltage vs. Operating Voltage

(R_L=2 kΩ, Ta=25°C)



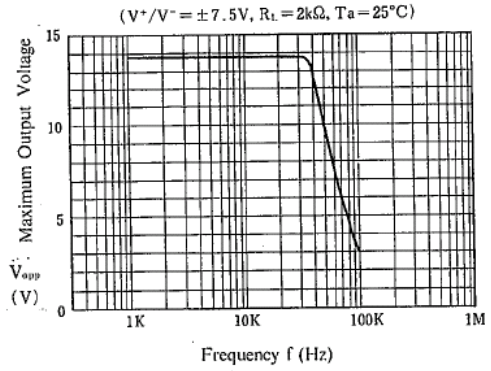
Maximum Output Voltage vs. Load Resistance

(V^+=5V, Ta=25°C)



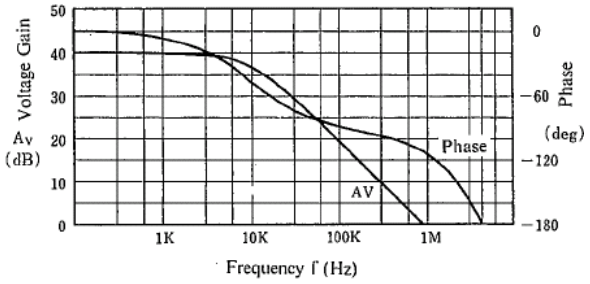
Maximum Output Voltage vs. Frequency

(V^+/V^-=±7.5V, R_L=2kΩ, Ta=25°C)



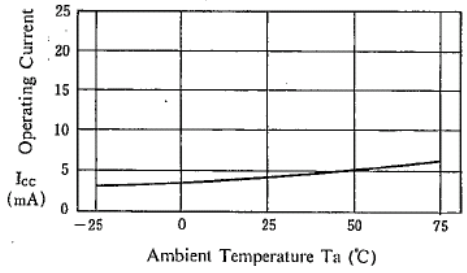
Voltage Gain, Phase vs. Frequency

(V^+/V^-=±4.3V, R_L=2kΩ, A_V=40dB, Ta=25°C)



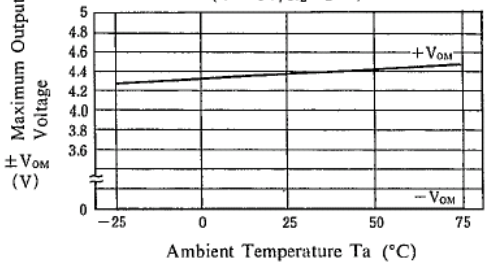
Operating Current vs. Temperature

(V^+/V^-=±4.3V)



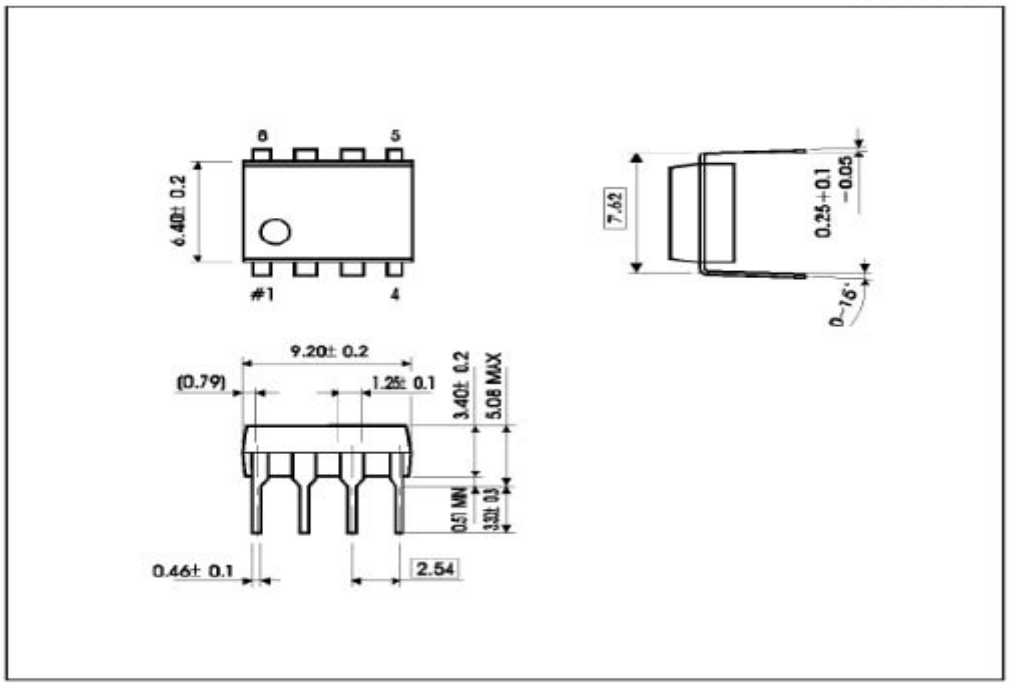
Maximum Output Voltage vs. Temperature

(V^+=5V, R_L=2kΩ)



PACKAGE OUTLINE

DIP8 **UNIT: MM**



SOP8 **UNIT: MM**

