Single-supply Dual High Current Operational Amplifier D3414

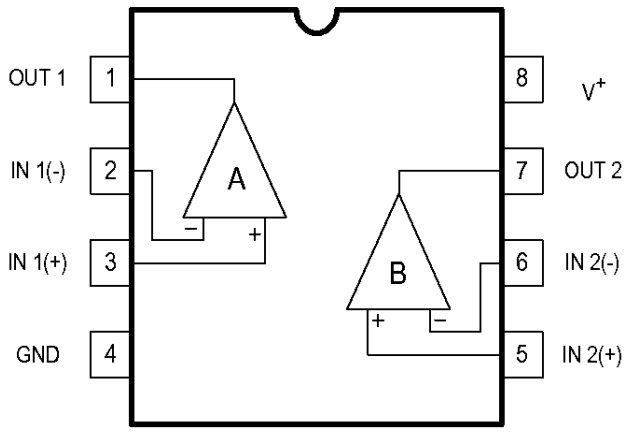
DESCRIPTION

The D3414 integrated circuit is a high gain, high output current, high output voltage swing dual operational amplifier capable of driving 70mA.

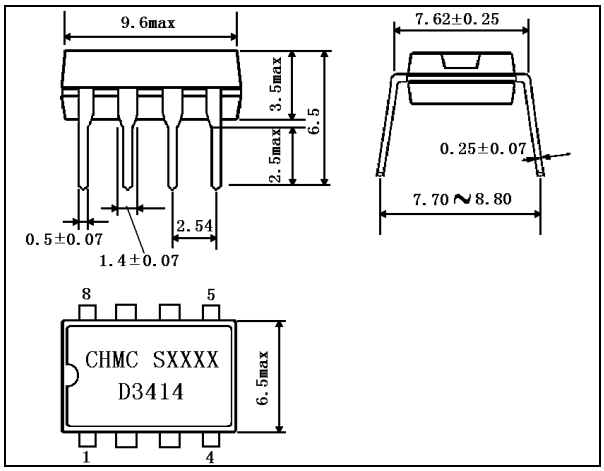
FEATURE

- Single Supply
- Operating Voltage (+3V~+15V)
- High Output Current (70mA)
- Slew Rate (1.0V/ms typ.)
- Bipolar Technology

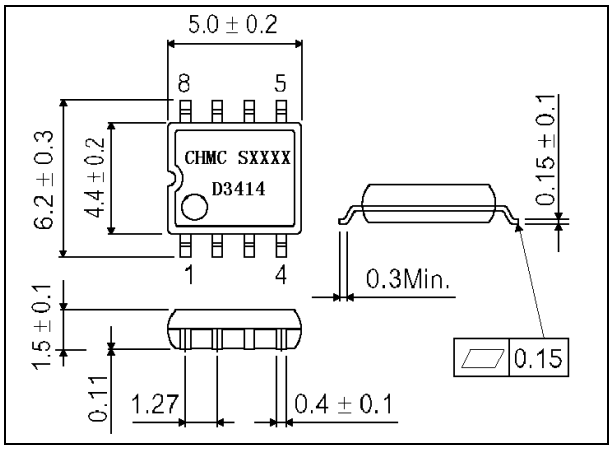
PIN CONFIGURATIONS



Outline Drawing



DIP8



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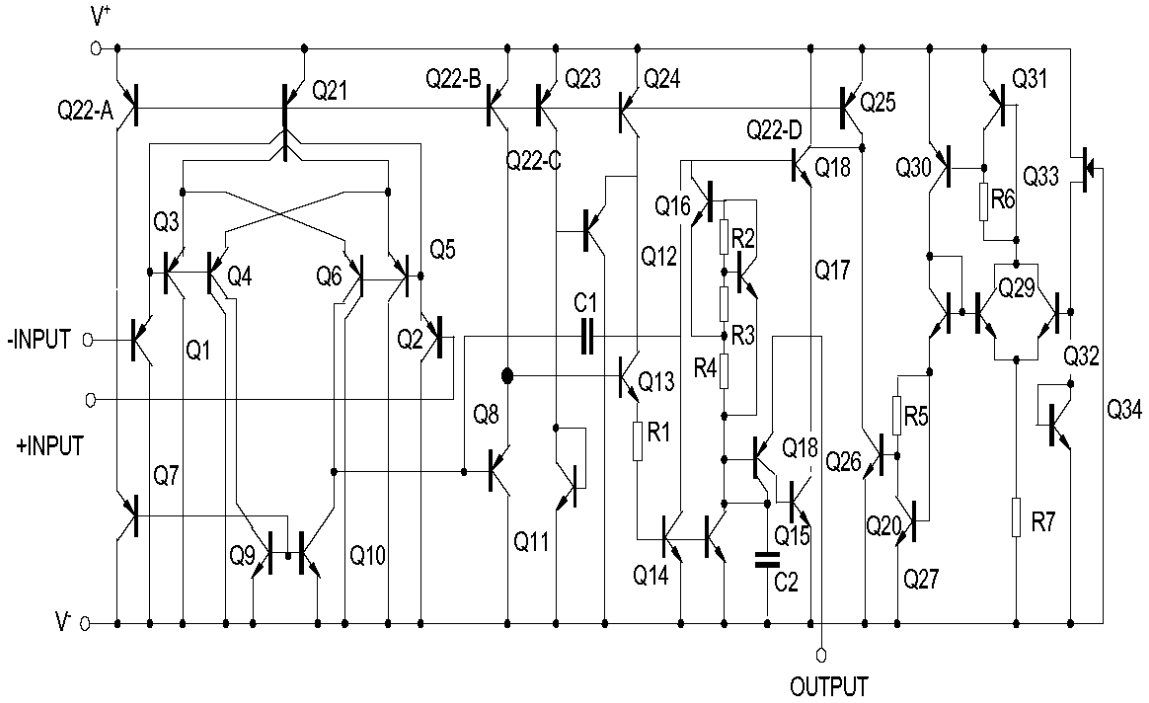
BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V+(V+/V-)	15(or +-7.5)	V
Differential Input Voltage	V_{ID}	15	V
Input Voltage	V_I	-0.3~+15	V
Power Dissipation	P_D	300	mW
Operating Temperature	Topr	-20~+75	°C
Storage Temperature	Tstg	-40~+125	°C

ELECTRICAL CHARACTERISTICS

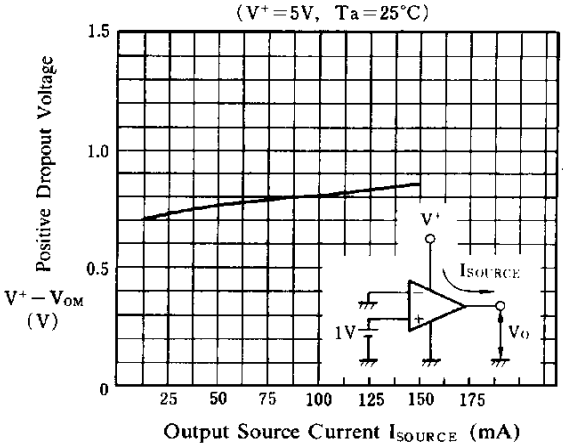
(Unless otherwise specified: Ta=25°C, VDD=3.7V,No load)

Characteristics	Symbol	Test conditions	Min	Typ	Max	Unit
Input Offset Voltage	V_{IO}	Rs=0Ω		2	5	mV
Input Offset Current	I_{IO}			5	100	nA
Input Bias Current	Ib			100	500	nA
Large Signal Voltage Gain	A_V	R_L=2kΩ	88	100		dB
Input Common Voltage range	V_{ICM}		V^+-2			V
Maximum Output Voltage Swing 1	V_{OM1}	$R_L \geqslant$ 2kΩ, V^+=5V	3.5			V
Maximum Output Voltage Swing 2	V_{OM2}	Io=70mA, V^+=5V	3.2			V
Common Mode Rejection Ratio	CMR		80	90		dB
Supply Voltage Rejection Ratio	SVR		80	90		dB
Operating Current	Icc	RL=∞	3	4	5	mA
Slew Rate	SR			1.0		V/μs
Unity Gain Bandwidth	GB			1.3		MHz
Operating Voltage Range	V^+				15	V

CHARACTERISTIC CURVES

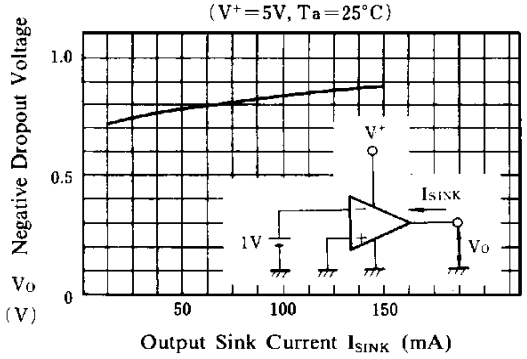
Output Source Current vs. V_{sat}^{+}

(V^+=5V, Ta=25°C)



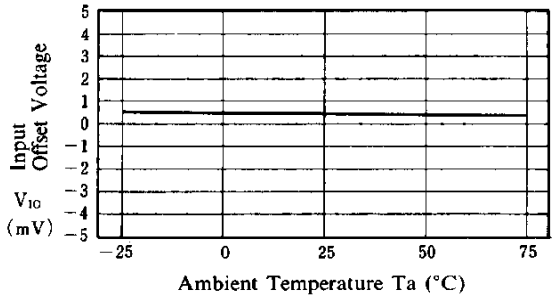
Output Sink Current vs. V_{sat}

(V^+=5V, Ta=25°C)



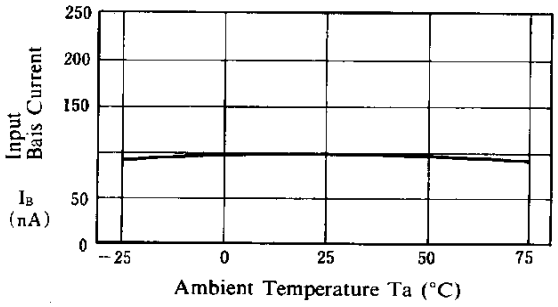
Input Offset Voltage vs. Temperature

(V^+/V^-=±4.3V)



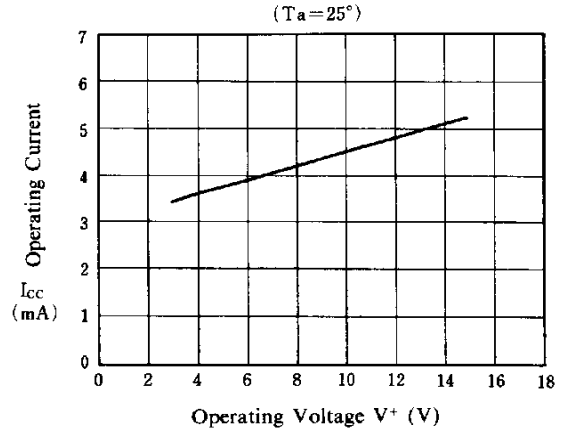
Input Bais Current vs. Temperature

(V^+/V^-=±4.3V)



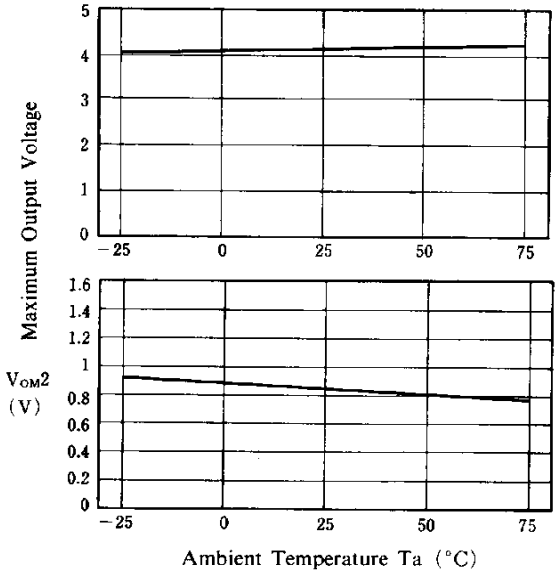
Operating Voltage vs. Operating Current

(Ta=25°)



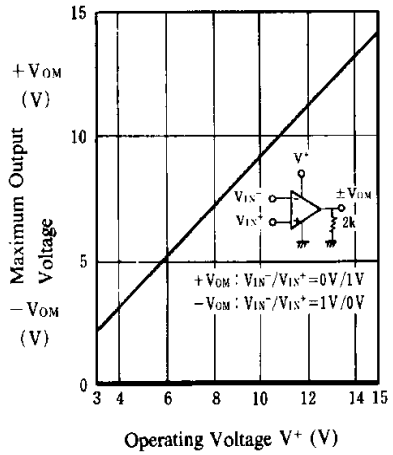
Maximum Output Voltage Swing 2 vs. Temperature

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



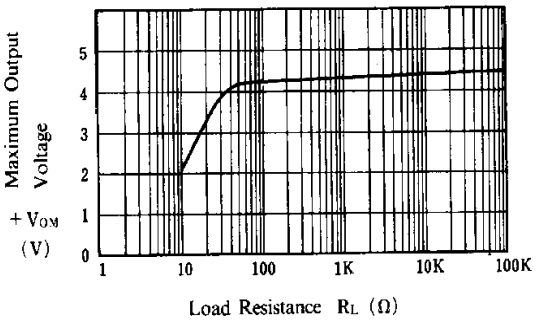
Maximum Output Voltage vs. Operating Voltage

(R_L=2 kΩ, Ta=25°C)



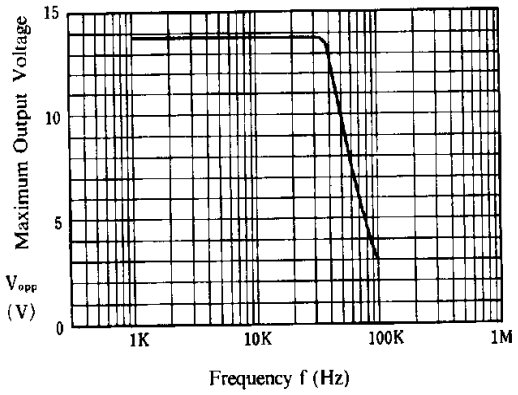
Maximum Output Voltage vs. Load Resistance

(V^+=5V, Ta=25°C)



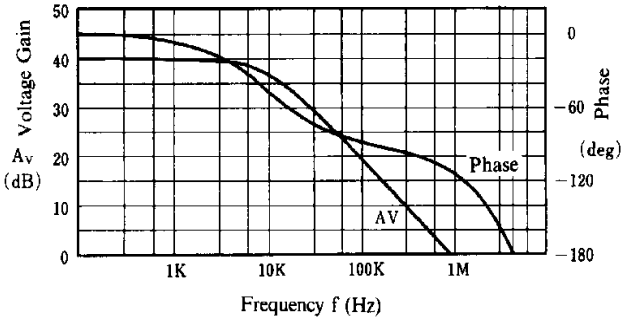
Maximum Output Voltage vs. Frequency

(V^+/V^-=±7.5V, R_L=2kΩ, Ta=25°C)



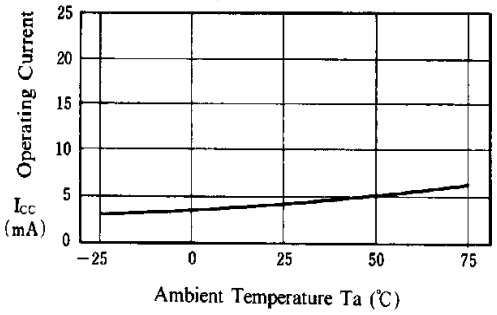
Voltage Gain, Phase vs. Frequency

(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)