SA534-A,F

FEATURES

- INTERNALLY FREQUENCY COMPENSATED FOR UNITY GAIN
- LARGE DC VOLTAGE GAIN — 100 dB
- WIDE BANDWIDTH (UNITY GAIN) — 1 MHz (TEMPERATURE COMPENSATED)
- WIDE POWER SUPPLY RANGE: SINGLE SUPPLY — $3V_{DC}$ to $30V_{DC}$ OR DUAL SUPPLIES — $\pm 1.5V_{DC}$ to $\pm 15V_{DC}$
- VERY LOW SUPPLY CURRENT DRAIN (800μA) — ESSENTIALLY INDEPENDENT OF SUPPLY VOLTAGE (1 mW/op amp at $+5V_{DC}$)
- LOW INPUT BIASING CURRENT — $45nA_{DC}$ (TEMPERATURE COMPENSATED)
- LOW INPUT OFFSET VOLTAGE — $2mV_{DC}$ AND OFFSET CURRENT — $5nA_{DC}$
- DIFFERENTIAL INPUT VOLTAGE RANGE EQUAL TO THE POWER SUPPLY VOLTAGE
- LARGE OUTPUT VOLTAGE — $0V_{DC}$ to $V+ -1.5V_{DC}$ SWING

UNIQUE FEATURES

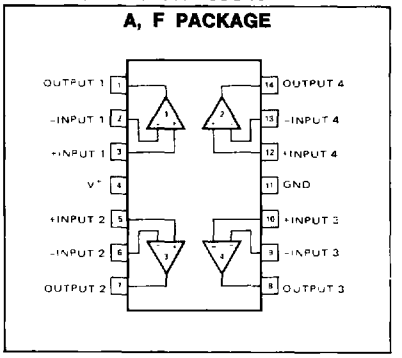
IN THE LINEAR MODE THE INPUT COMMON-MODE VOLTAGE RANGE INCLUDES GROUND AND THE OUTPUT VOLTAGE CAN ALSO SWING TO GROUND, EVEN THOUGH OPERATED FROM ONLY A SINGLE POWER SUPPLY VOLTAGE. THE UNITY GAIN CROSS FREQUENCY IS TEMPERATURE COMPENSATED. THE INPUT BIAS CURRENT IS ALSO TEMPERATURE COMPENSATED.

ABSOLUTE MAXIMUM RATINGS

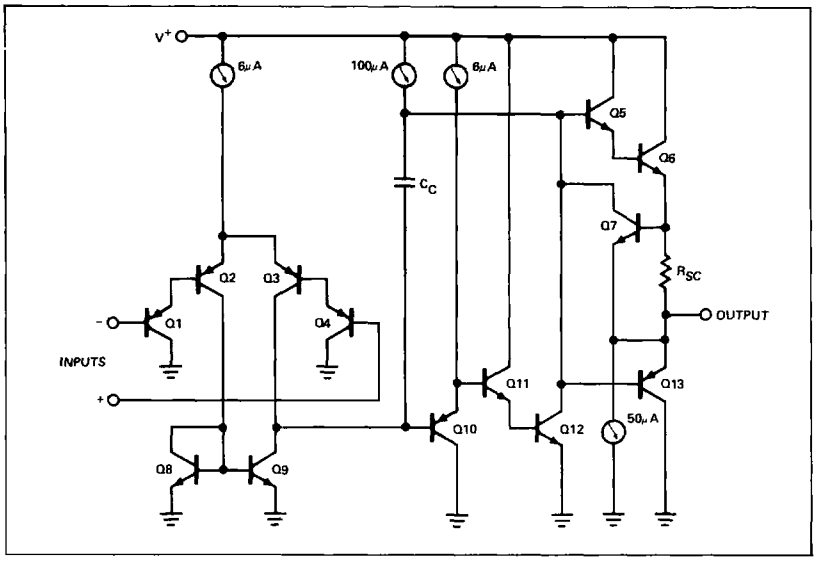
Supply Voltage, V+	$32V_{DC}$ or $\pm 16V_{DC}$
Differential Input Voltage	$32V_{DC}$
Input Voltage	$-0.3V_{DC}$ to $+32V_{DC}$
Power Dissipation	
Molded DIP	570mW
Cavity DIP	900mW
Output Short Circuit to GND	
1 Amplifier	Continuous
V+ $<15V_{DC}$ and $T_A=25°C$	
Operating Temperature Range	−40°C to +85°C
Storage Temperature Range	−65°C to +150°C
Lead Temperature (Soldering, 10 sec.)	300°C

PIN CONFIGURATION

A, F PACKAGE



EQUIVALENT CIRCUIT

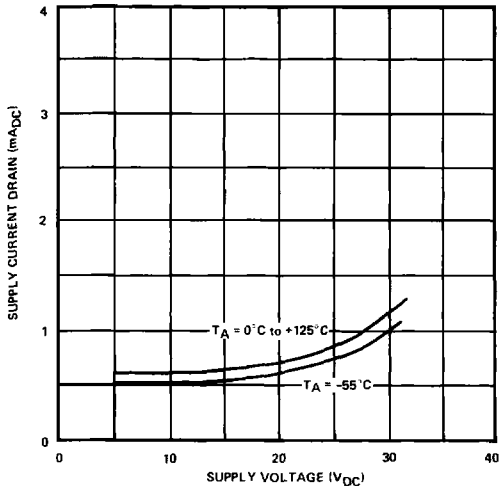


ELECTRICAL CHARACTERISTICS

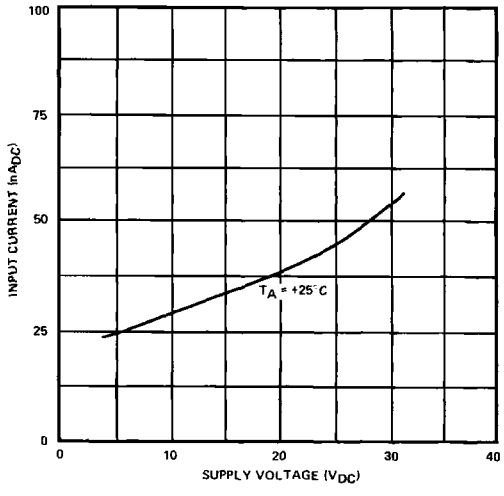
Parameter	Test Conditions	LIMITS SA534 Min	Typ	Max	Units
Amplifier-to-Amplifier Coupling	f=1kHz to 20 kHz, $T_A=25°C$ (input Referred)		−120		dB
Output Current Source	$V_{IN}+=+1V_{DC}$, $V_{IN}-=0V_{DC}$, $V+=15V_{DC}$, $T_A=25°C$	20	40		mA_{DC}
	$V_{IN}+=+1V_{DC}$, $V_{IN}-=0V_{DC}$, $V+=15V_{DC}$	10	20		mA
Output Current Sink	$V_{IN}-=+1V_{DC}$, $V_{IN}+=0V_{DC}$, $V+=15V_{DC}$, $T_A=25°C$	10	20		mA_{DC}
	$V_{IN}-=+1V_{DC}$, $V_{IN}+=0V_{DC}$, $T_A=+25°C$, $V_D=200mV_{DC}$	12	50		μA_{DC}
	$V_{IN}-=+1V_{DC}$, $V_{IN}+=0V_{DC}$, $V+=15V_{DC}$	5	8		mA
Differential Input Voltage				V+	V_{DC}

TYPICAL PERFORMANCE CURVES

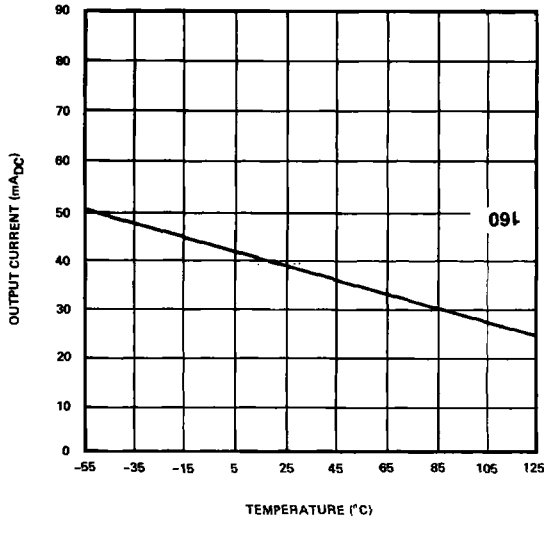
SUPPLY CURRENT



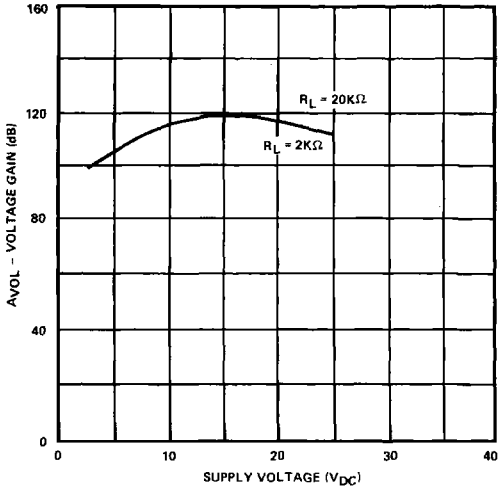
INPUT CURRENT



CURRENT LIMITING

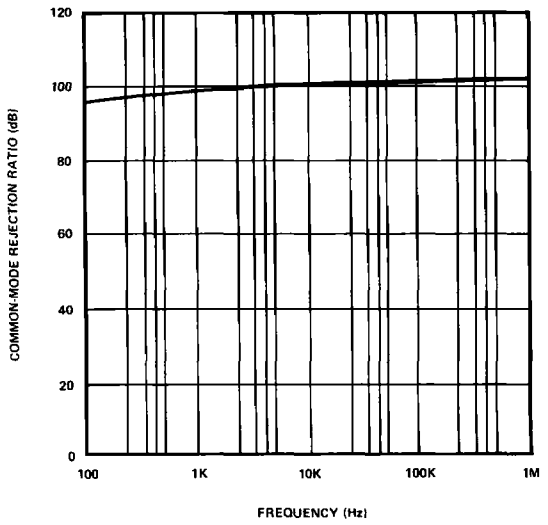


VOLTAGE GAIN

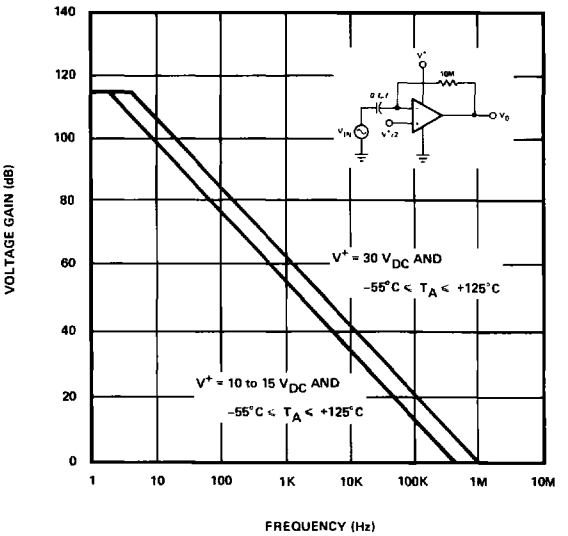


TYPICAL PERFORMANCE CURVES (Cont'd)

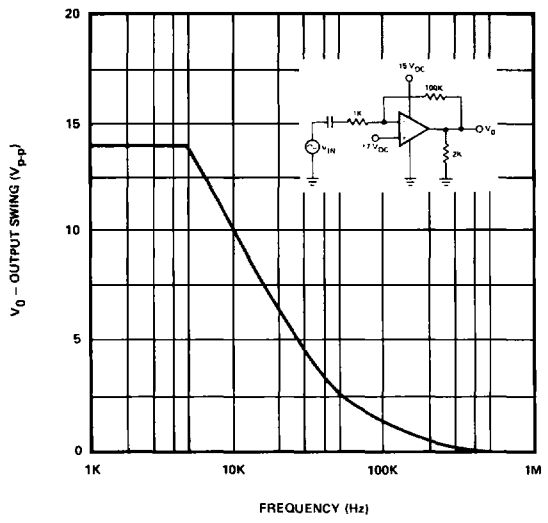
COMMON-MODE REJECTION RATIO



OPEN LOOP FREQUENCY RESPONSE



LARGE SIGNAL FREQUENCY RESPONSE



VOLTAGE FOLLOWER PULSE RESPONSE