ACE358

Dual Operational Amplifier

Description

The ACE358 consists of two independent high gain, internally frequency compensated operational amplifier. It can be operated from a Single power supply and also split power supplies.

Features

- Internally frequency compensated for unity gain
- Wide power supply range 3V~32V
- Input common-mode voltage range include ground
- Large DC Voltage gain

Applications

- General purpose amplifier
- Transducer amplifier

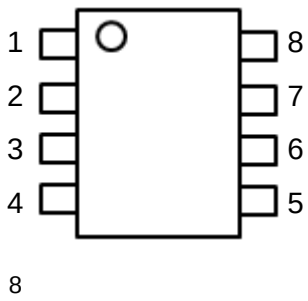
Absolute Maximum Ratings

(T_A=25 ^oC)

Parameter	Symbol	Max	Unit
Supply Voltage	V_{CC}	±16 or 32	V
Differential Input Voltage	$V_{I(DIFF)}$	±32	V
Input Voltage	V_I	-0.3~32	V
Output Short to Ground		Continuous	
Operating Temperature Range	T_{OPR}	0~70	^oC
Storage Temperature Range	T_{STG}	-65~150	^oC

Packaging Type

SOP-8



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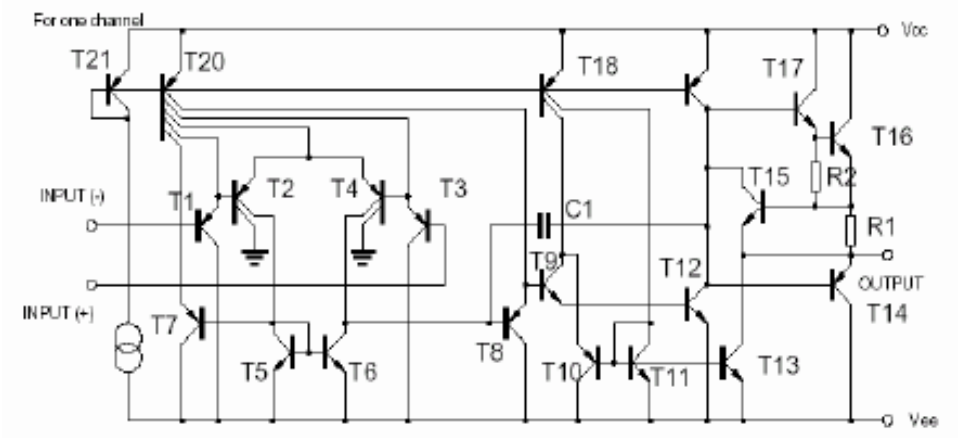
SOP-8	Description
1	Output 1
2	Input1(-)
3	Input1(+)
4	VEE/GND
5	Input2(+)
6	Input2(-)
7	Output2
8	Vcc

Ordering information

ACE358 XX + H

- Halogen-free
- Pb-free
- FM : SOP-8

Block Diagram



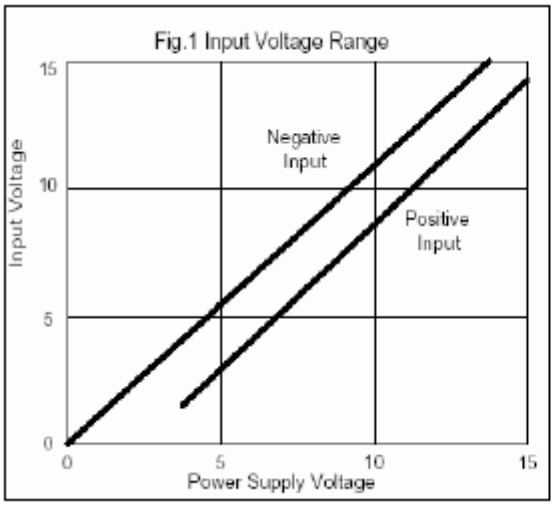
Electrical Characteristics

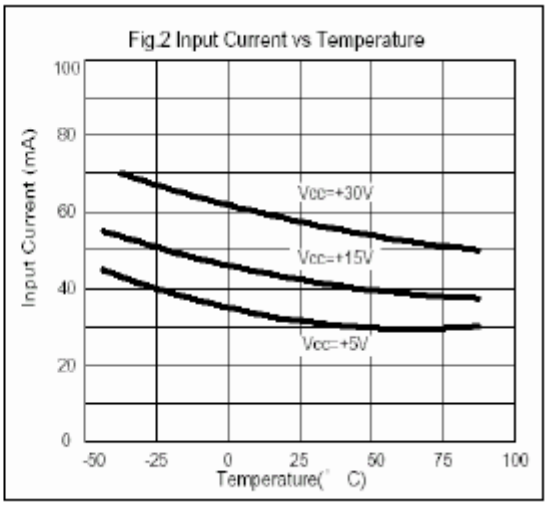
(V_{CC}=5.0V V_{EE}=GND,T_A=25,unless otherwise specified)

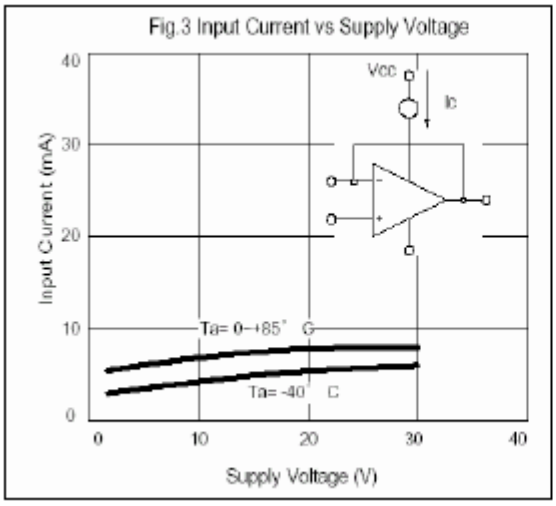
Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_{IO}	Input Offset Voltage	V_{CM}=0V to V_{CC}-1.5V $V_{O(P)}$=1.4V,RS=0Ω		2.9	7.0	mV
I_{IO}	Input Offset Current			5	50	nA
I_{BIAS}	Input Bias Current			45	250	nA
$V_{I(R)}$	Input Common Mode Voltage	V_{CC}=30V	0		V_{CC}-1.5	V
I_{CC}	Power Supply Current	R_L=∞,V_{CC}=30V		0.8	2.0	mA
		R_L=∞,Full Temperature Range		0.5	1.2	mA
GV	Large Signal Voltage Gain	V_{CC}=15V,R_L>=2KΩ $V_{O(P)}$=1V to 11V	25	100		V/mV
$V_{O(H)}$	Output Voltage Swing	V_{CC}=30V,R_L=2KΩ	26			V
		V_{CC}=30V,R_L=10KΩ	27	28		V
$V_{O(L)}$		V_{CC}=5V,R_L>=10KΩ		5	20	mV
CMRR	Common Mode Rejection Ratio		65	80		dB
PSRR	Power Supply Rejection		65	100		dB

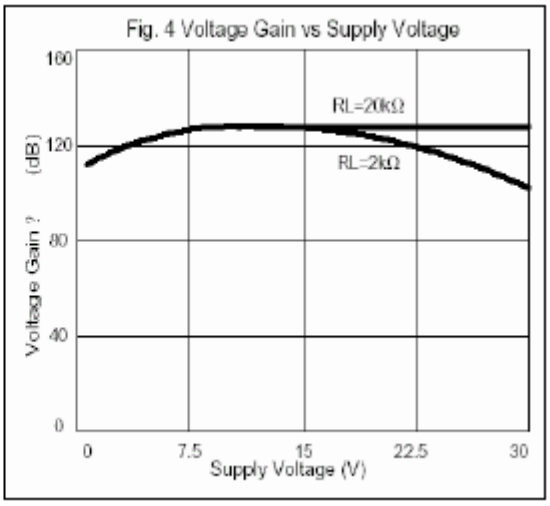
	Ration					
CS	Channel Separation	F=1KHZ to 20KHZ		120		dB
I_{SC}	Short Circuit Current to Ground			40	60	mA
I_{SOURCE}	Output Current	VI(+)= 1V,VI(-)=0V V_{CC}=15V,$V_{O(P)}$=2V	10	30		mA
I_{SINK}		VI(+)=0V,,VI(-)=1V V_{CC}=15V,$V_{O(P)}$=2V	10	15		mA
		VI(+)=0V,,VI(-)=1V V_{CC}=15V,$V_{O(P)}$=200mV	12	100		µA
$V_{I(DIFF)}$	Differential Input Voltage				VCC	V

Typical Performance Characteristics









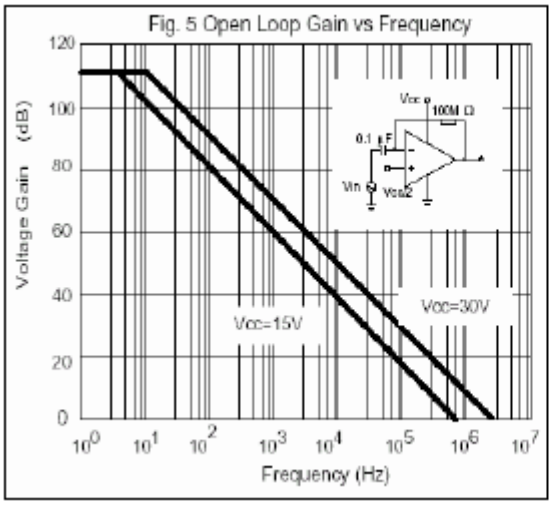


Fig. 5 Open Loop Gain vs Frequency
Voltage Gain (dB)
Frequency (Hz)
Vcc=15V
Vcc=30V

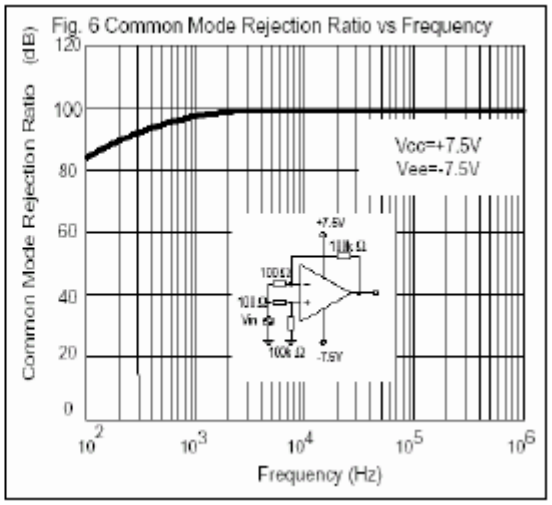


Fig. 6 Common Mode Rejection Ratio vs Frequency
Common Mode Rejection Ratio (dB)
Frequency (Hz)
Vcc=+7.5V
Vee=-7.5V

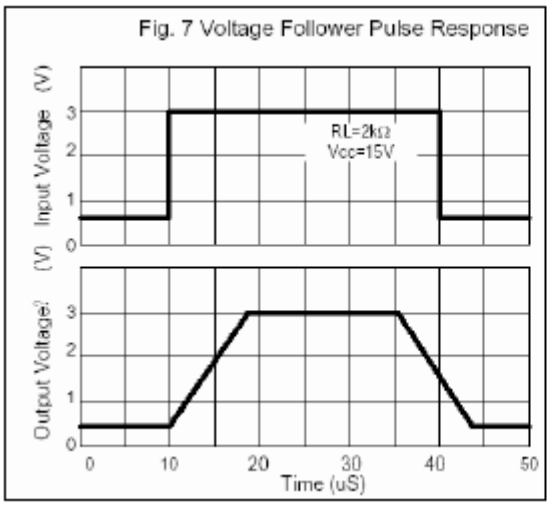


Fig. 7 Voltage Follower Pulse Response
Input Voltage (V)
Output Voltage (V)
RL=2kΩ
Vcc=15V
Time (uS)

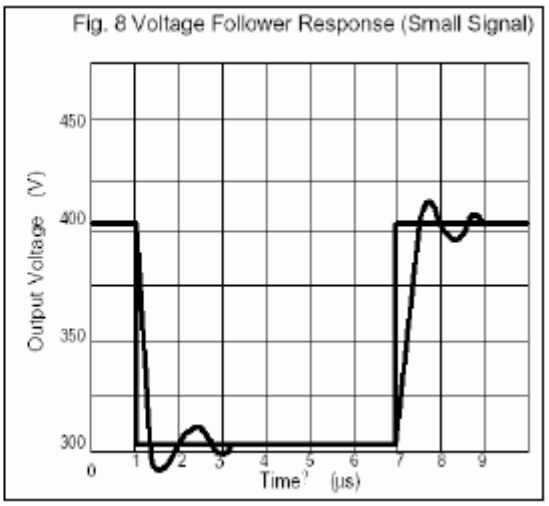


Fig. 8 Voltage Follower Response (Small Signal)
Output Voltage (V)
Time (μs)

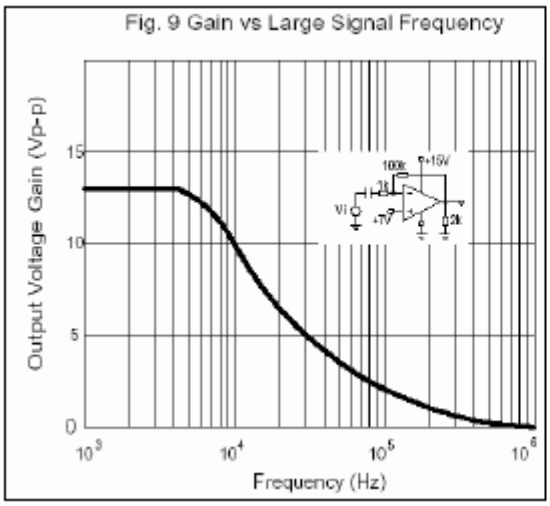


Fig. 9 Gain vs Large Signal Frequency
Output Voltage Gain (Vp-p)
Frequency (Hz)

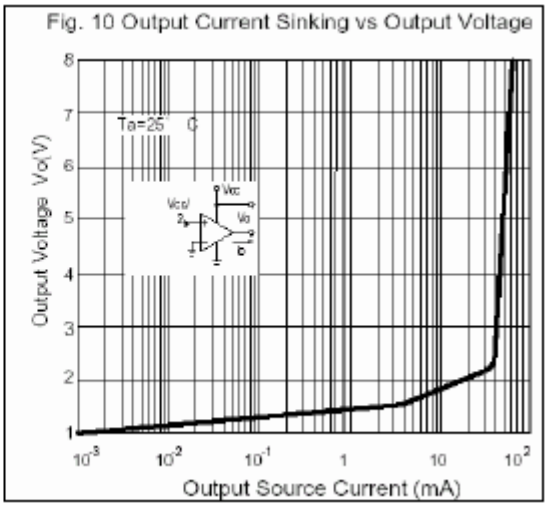


Fig. 10 Output Current Sinking vs Output Voltage
Output Voltage Vo(V)
Ta=25° C
Output Source Current (mA)

Fig. 11 Output Sink Current vs Output Voltage

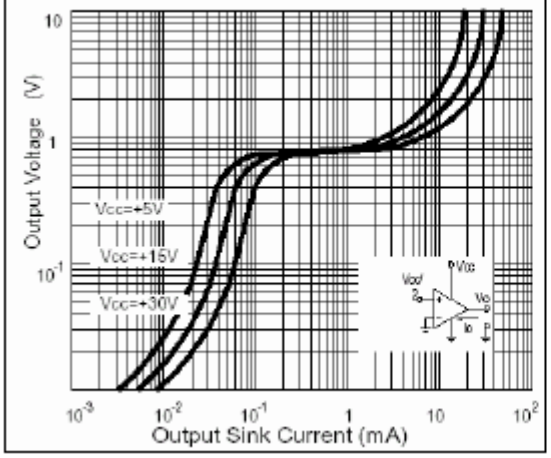
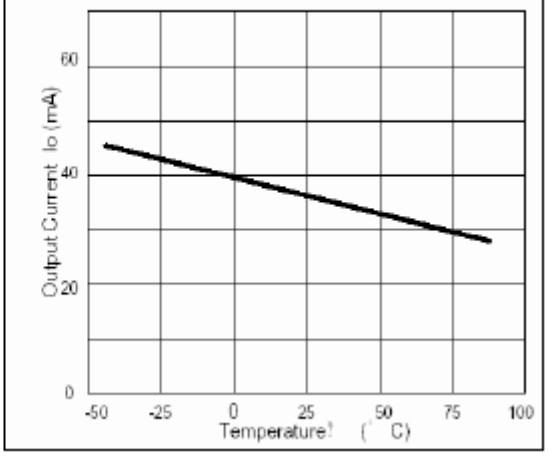
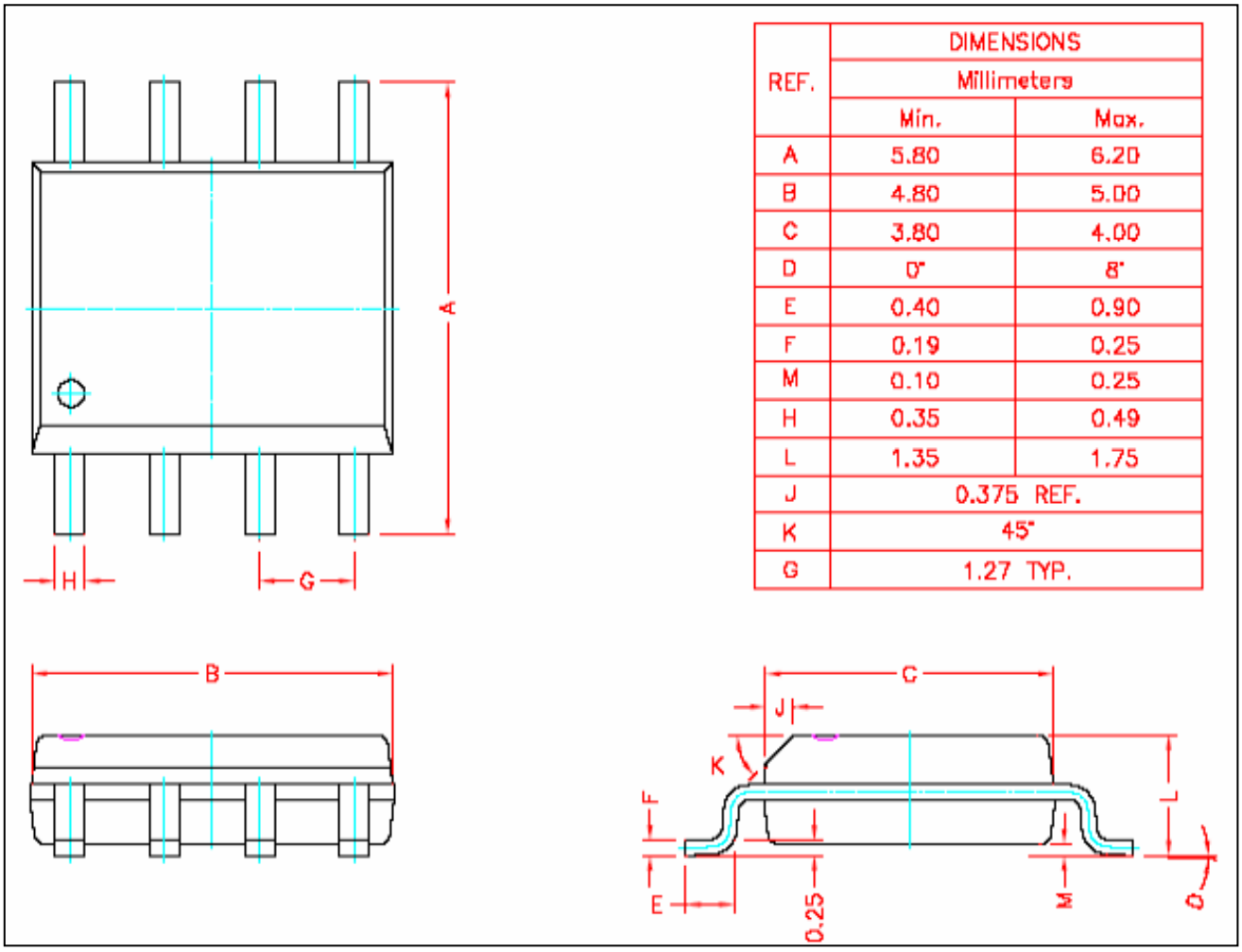


Fig.12 Current Limiting vs Temperature



Packing Information

SOP-8



REF.	DIMENSIONS Millimeters	
	Min.	Max.
A	5.80	6.20
B	4.80	5.00
C	3.80	4.00
D	0°	8°
E	0.40	0.90
F	0.19	0.25
M	0.10	0.25
H	0.35	0.49
L	1.35	1.75
J	0.375 REF.	
K	45°	
G	1.27 TYP.	

Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Electronics Co., LTD. As sued herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and shoes failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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