

General Description

The LR358/358C consists of two independent, high gain and internally frequency compensated operational amplifiers, it is specifically designed to operate from a single power supply. Operation from split power supply is also possible and the low power supply current drain is independent of the magnitude of the power supply voltages.

The LR358/358C series are Compatible with Industry standard 358.

The LR358/358C series are available in standard packages of DIP-8 and SOIC-8.

Features

- Internally Frequency Compensation
- Large Voltage Gain
- Low Input Bias Current
- Low Input Offset Voltage
- Large Output Voltage Swing

Applications

- Battery Charger
- Cordless Telephone
- Switching Power Supply

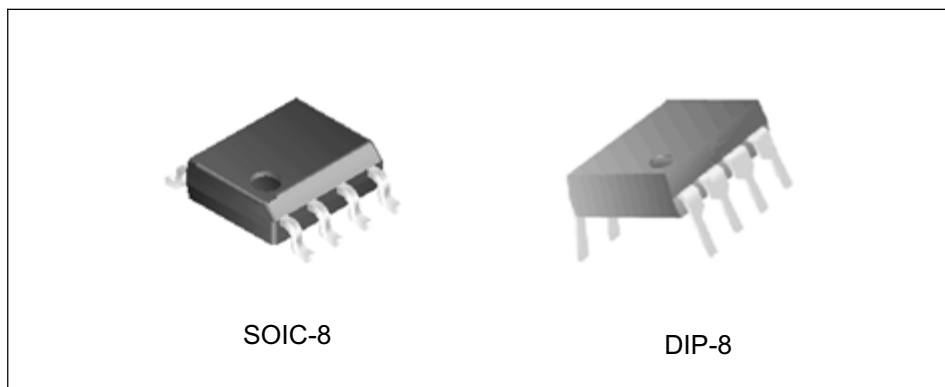


Figure 1. Package Types of LR358/358C

Pin Configuration

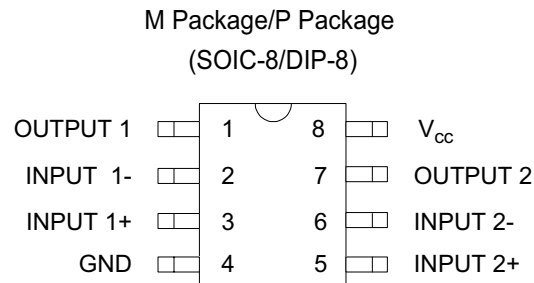


Figure 2. Pin Configuration of LR358/358C (Top View)

Functional Block Diagram

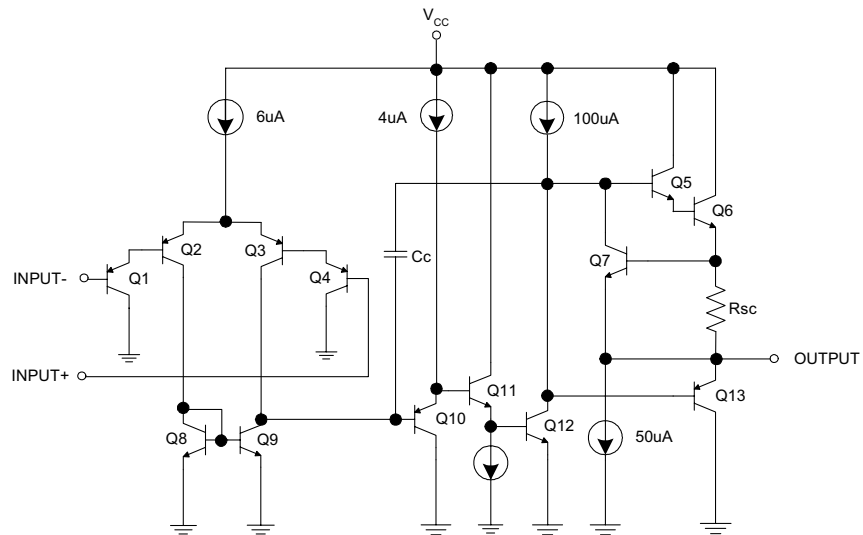


Figure 3. Functional Block Diagram of LR358/358C Each Amplifier)

Absolute Maximum Ratings

Parameter		Value	Unit
Power Supply Voltage		32 \pm 16	V
Differential Input Voltage		32	V
Input Voltage		-0.3~32	V
Power Dissipation	DIP -8	550	mW
	SIOC -8	530	
Output Short-Circuit to Ground ($V^+ \leq 15V$, $T_a = 25^\circ C$)		Continuous	
Input Current ($V_{IN} < -0.3V$)		50	mA
Operating Temperature Range		-25~85	$^\circ C$
Storage Temperature Range		-65~150	$^\circ C$

Electrical Characteristics

Parameter		Test Conditions	Value			Unit
			Min	Typ	Max	
Input Offset Voltage		Ta=25℃		2	5	mV
Input Bias Current		Ta=25℃, IIN(+) IIN (-), VCM=0V		45	150	nA
Input Offset Current		Ta=25℃, IIN(+) - IIN (-), VCM=0V		3	30	nA
Supply Current		V ⁺ =30V		1	2	mA
		V ⁺ =5V		0.5	1.2	
Large Signal Voltage Gain		V ⁺ =15V, Ta=25℃, RL≥2kΩ	50	100		V/mV
Common Mode Rejection Ratio		DC, Ta=25℃, VCM=0~V ⁺ -1.5V	70	85		dB
Power Supply Rejection Ration		DC, Ta=25℃, V ⁺ =5~30V	65	100		dB
Output Current (Source)		VIN(+)=1V,VIN(-)=0V,V ⁺ =15V,Vo=2V,Ta=25℃	20	40		mA
Output Current(Sink)		VIN(-)=1V,VIN(+)=0V,V ⁺ =15V,Vo=2V,Ta=25℃	10	20		mA
		VIN(-)=1V, VIN(+)=0V, V ⁺ =15V, Vo=2V	5	8		mA
Short Circuit to Ground		V ⁺ =15V, Ta=25℃		40	60	mA
Output Voltage Swing	VOH	V ⁺ =30V	RL=2kΩ	26		V
			RL=10kΩ	27	28	V
	VOL	V ⁺ =5V, RL=10kΩ			5	20

Typical Performance Characteristics

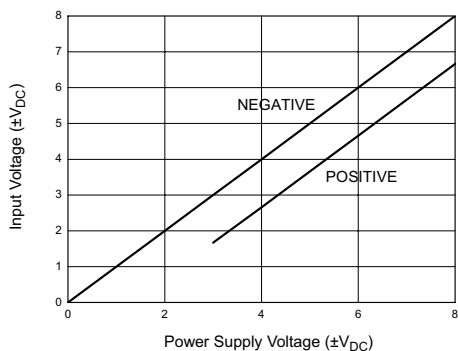


Figure 4. Input Voltage Range

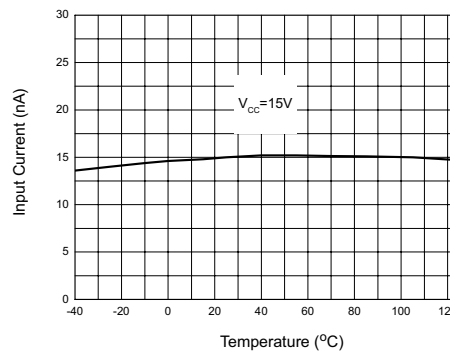


Figure 5. Input Current

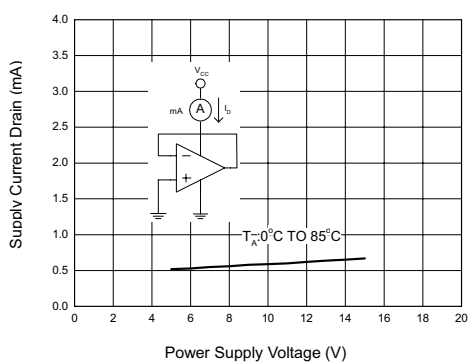


Figure 6. Supply Current

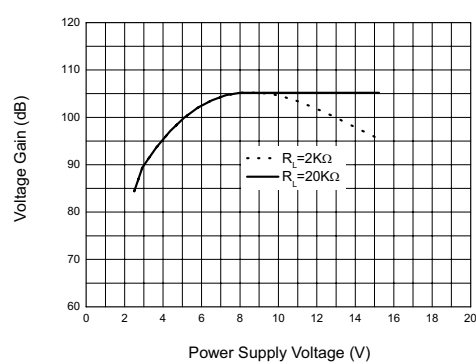


Figure 7. Voltage Gain

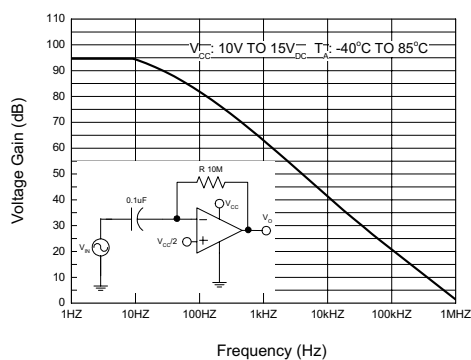


Figure 8. Open Loop Frequency Response

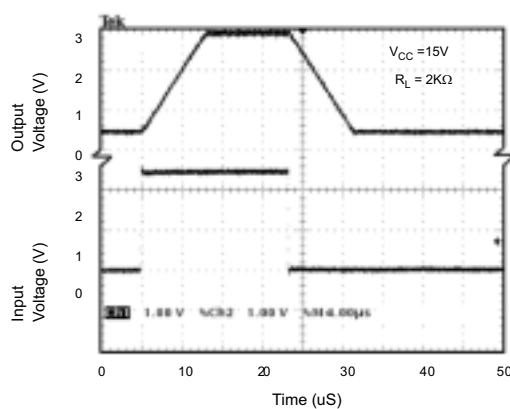


Figure 9. Voltage Follower Pulse Response

Typical Performance Characteristics (Continued)

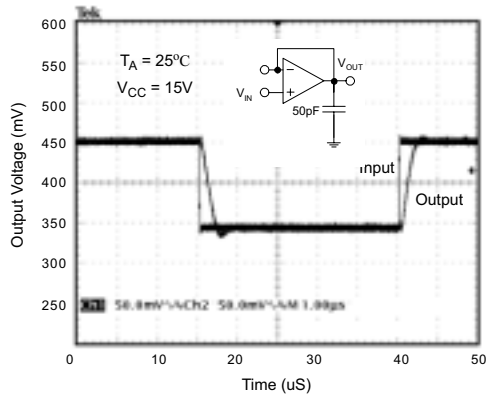


Figure 10. Voltage Follower Pulse Response (Small Signal)

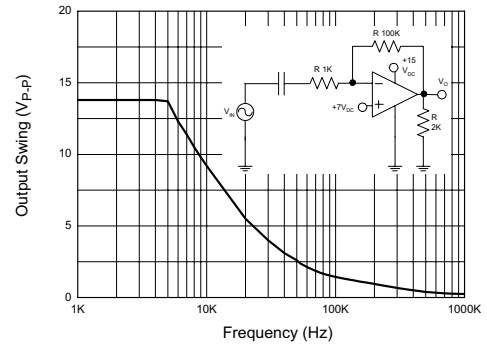


Figure 11. Large Signal Frequency Response

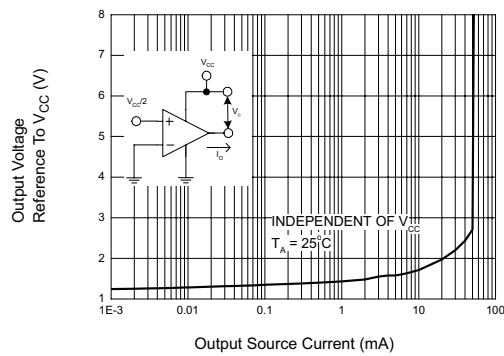


Figure 12. Output Characteristics Current Sourcing

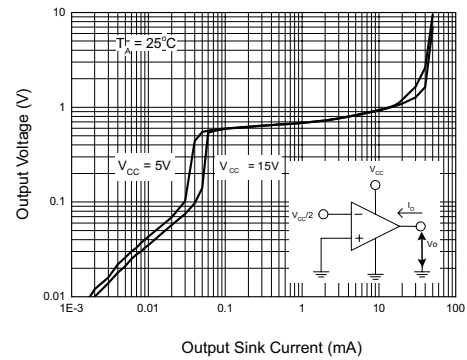


Figure 13. Output Characteristics Current Sinking

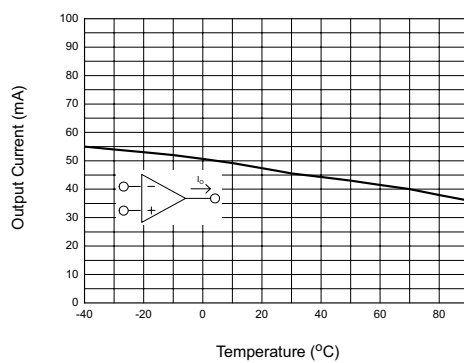


Figure 14. Current Limiting

Typical Application

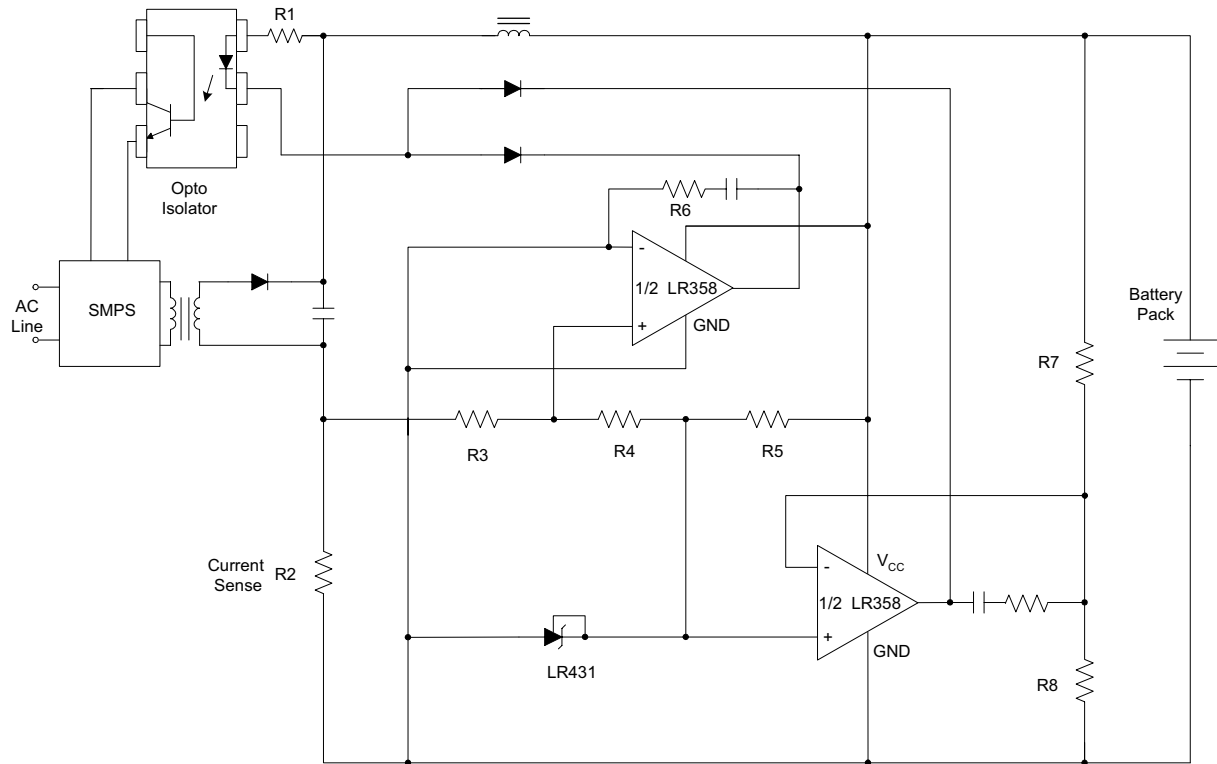


Figure 15. Battery Charger

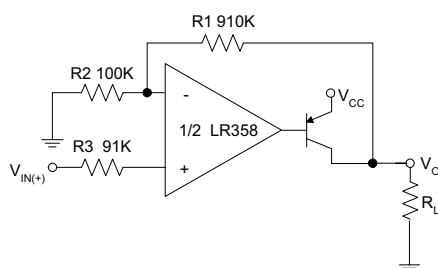


Figure 16. Power Amplifier

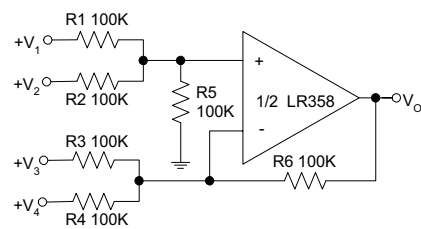


Figure 17. DC Summing Amplifier

Typical Application (Continued)

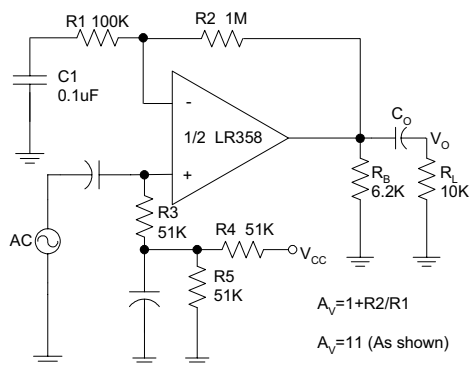


Figure 18. AC Coupled Non-Inverting Amplifier

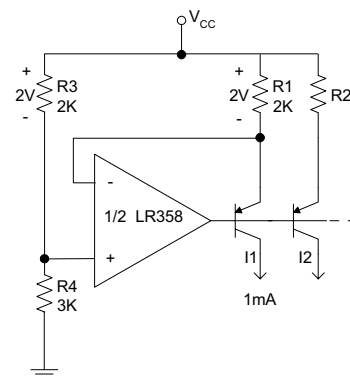


Figure 19. Fixed Current Sources

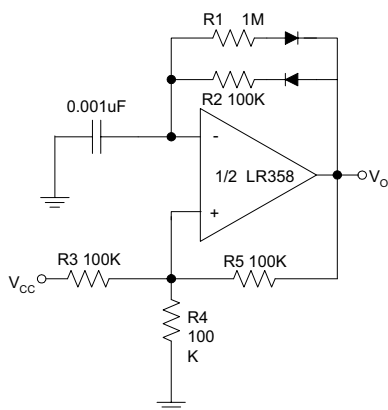


Figure 20. Pulse Generator

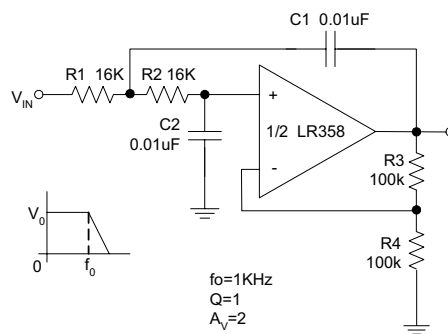
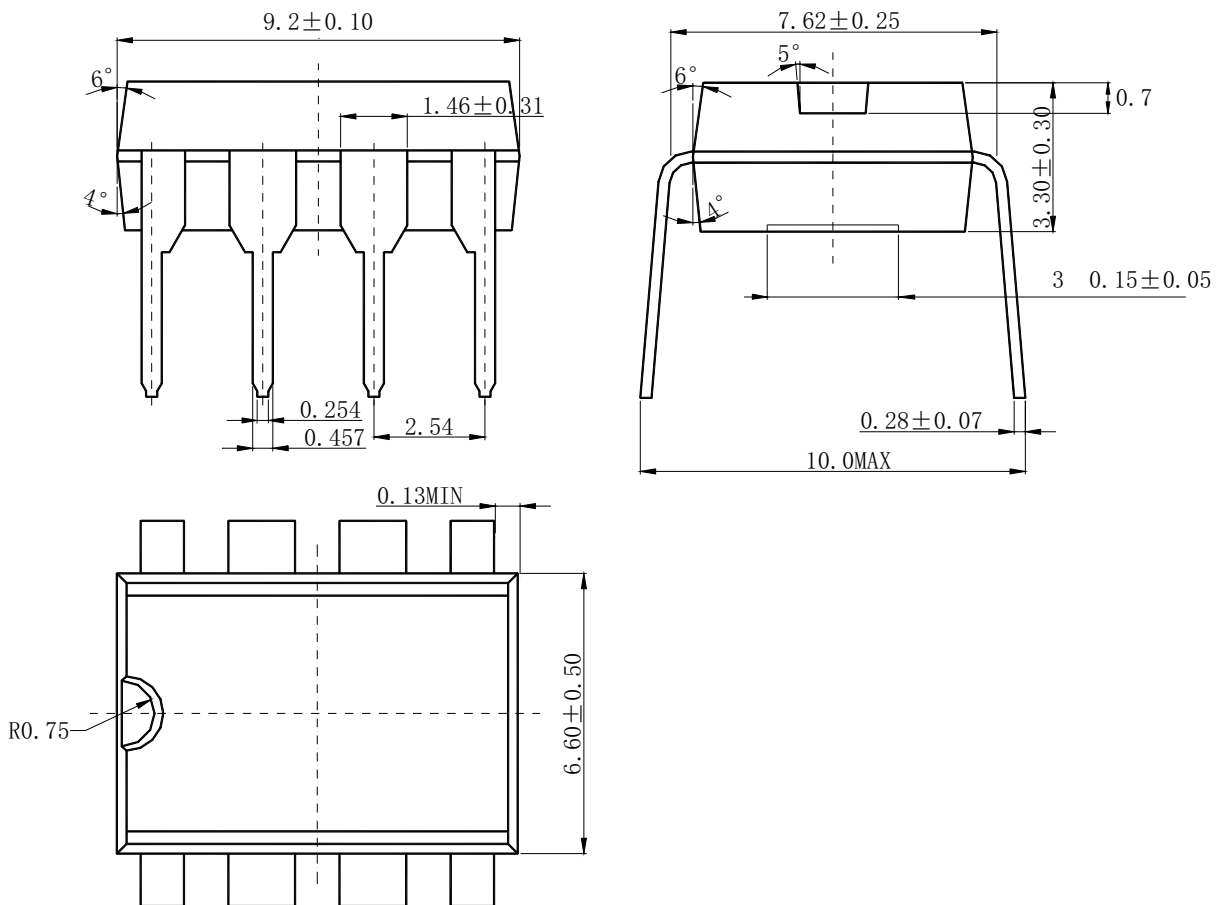


Figure 21. DC Coupled Low-Pass Active Filter

Mechanical Dimensions
DIP-8
Unit: mm


Mechanical Dimensions (Continued)

SOIC-8

Unit: mm

