

General Description

The LR358/LR358D 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.

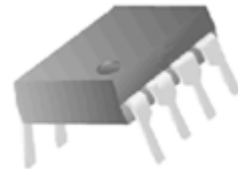
Package

- Package of LR358 is DIP-8
- Package of LR358D is SOP-8

Features

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

LR358



DIP-8



SOP-8

Pin Configuration

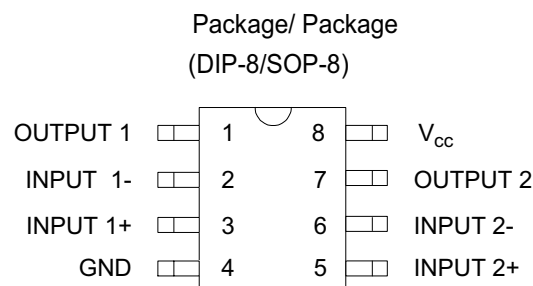


Figure 1. Pin Configuration of LR358/LR358D (Top View)

LR358

Functional Block Diagram

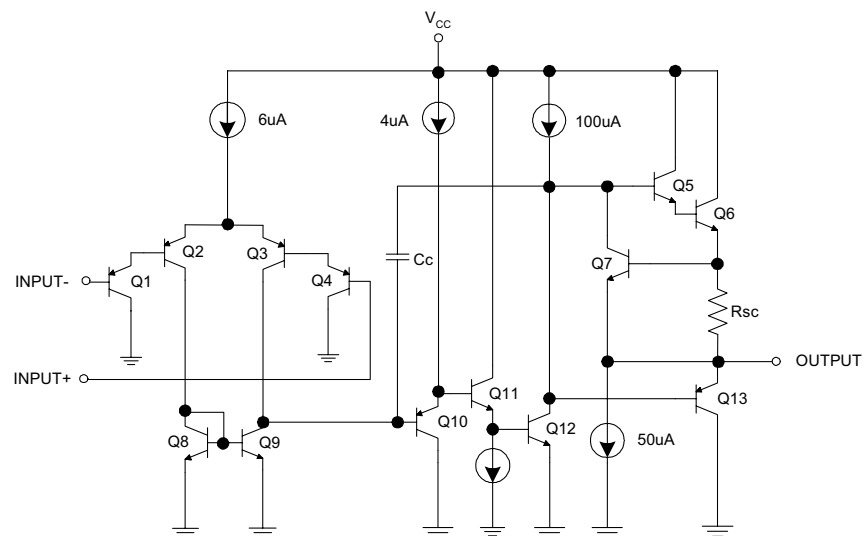


Figure 2. Functional Block Diagram of LR358/LR358D(Each Amplifier)

LR358

Absolute Maximum Ratings

Parameter		Value	Unit
Power Supply Voltage		32 ±16	V
Differential Input Voltage		32	V
Input Voltage		-0.3~32	V
Power Dissipation	DIP -8	550	mW
	SOP -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	°C
Storage Temperature Range		-65~150	°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

LR358

Typical Performance Characteristics

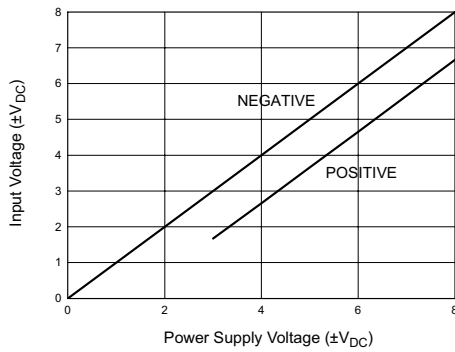


Figure 3 Input Voltage Range

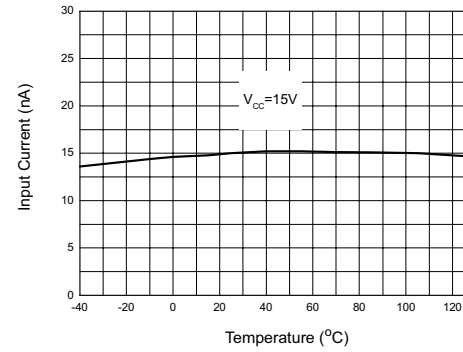


Figure 4. Input Current

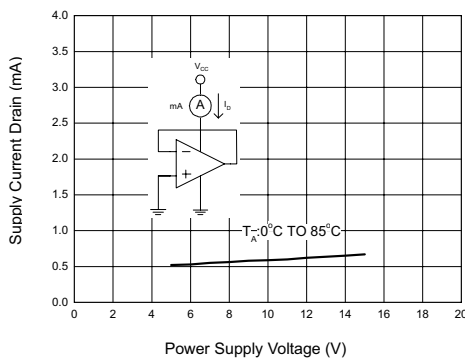


Figure 5. Supply Current

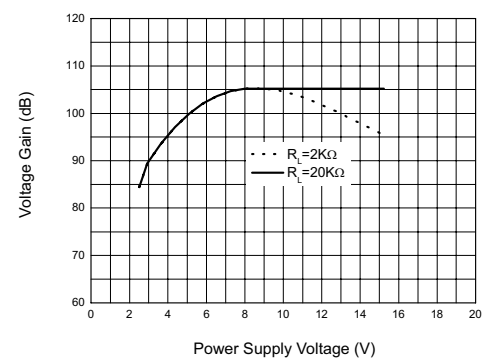


Figure 6. Voltage Gain

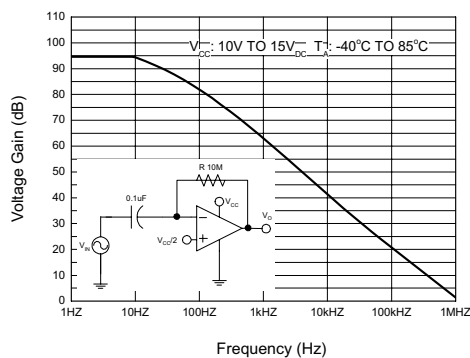


Figure 7. Open Loop Frequency Response

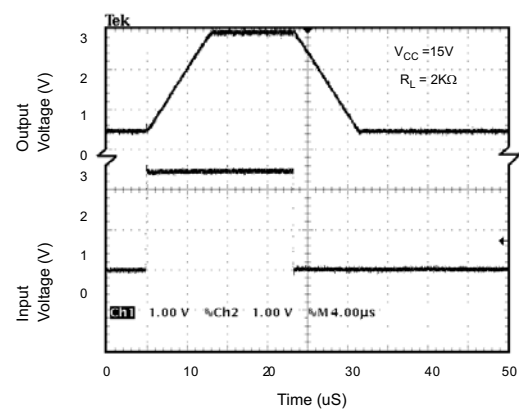


Figure 8. Voltage Follower Pulse Response

LR358

Typical Performance Characteristics (Continued)

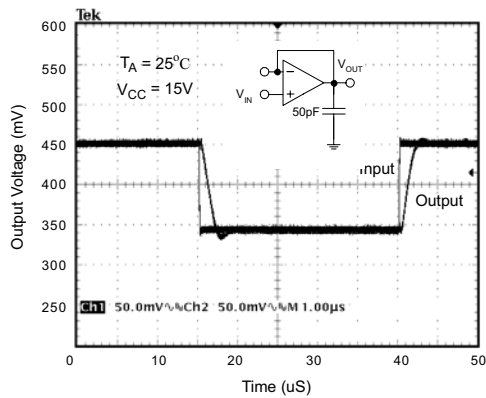


Figure 9. Voltage Follower Pulse Response (Small Signal)

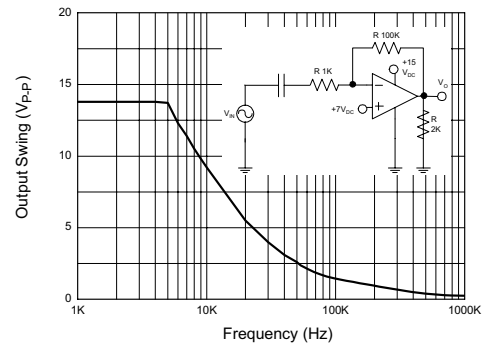


Figure 10. Large Signal Frequency Response

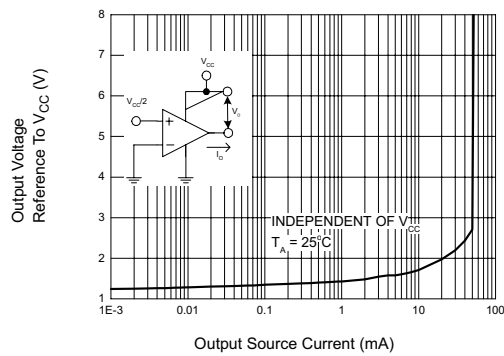


Figure 11. Output Characteristics Current Sourcing

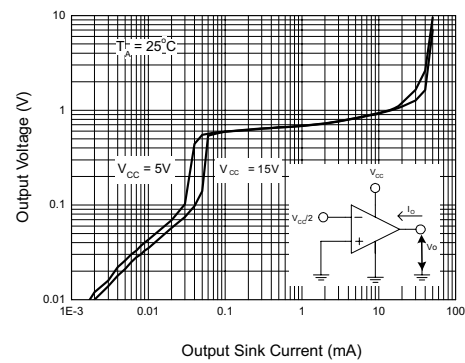


Figure 12. Output Characteristics Current Sinking

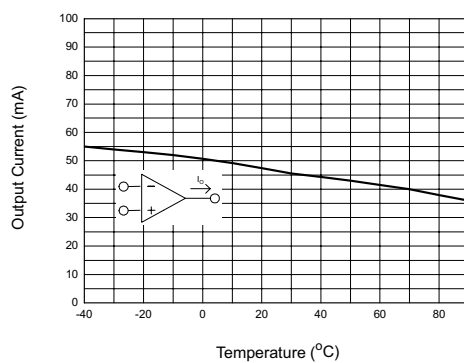


Figure 13. Current Limiting

Typical Application



LR358

Typical Application (Continued)

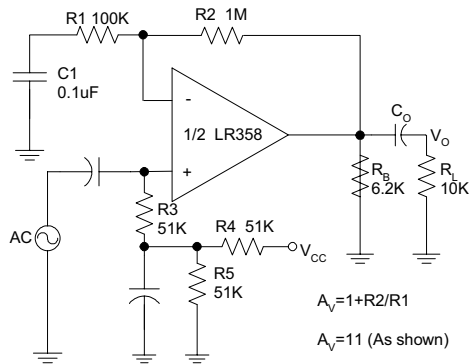


Figure 17. AC Coupled Non-Inverting Amplifier

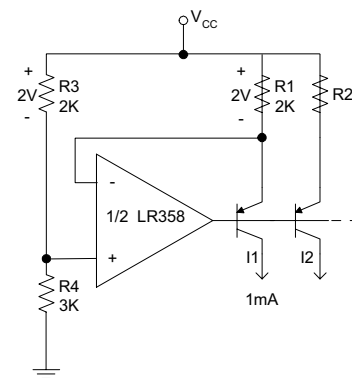


Figure 18. Fixed Current Sources

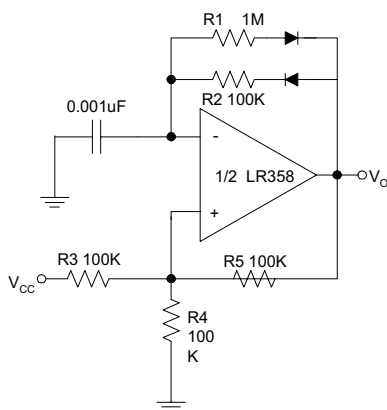


Figure 19. Pulse Generator

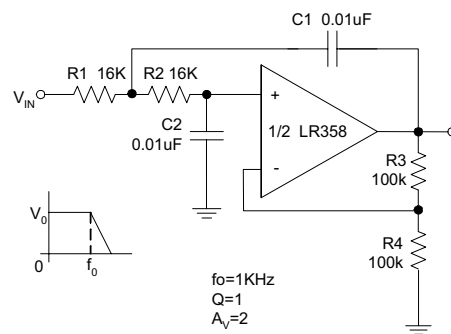


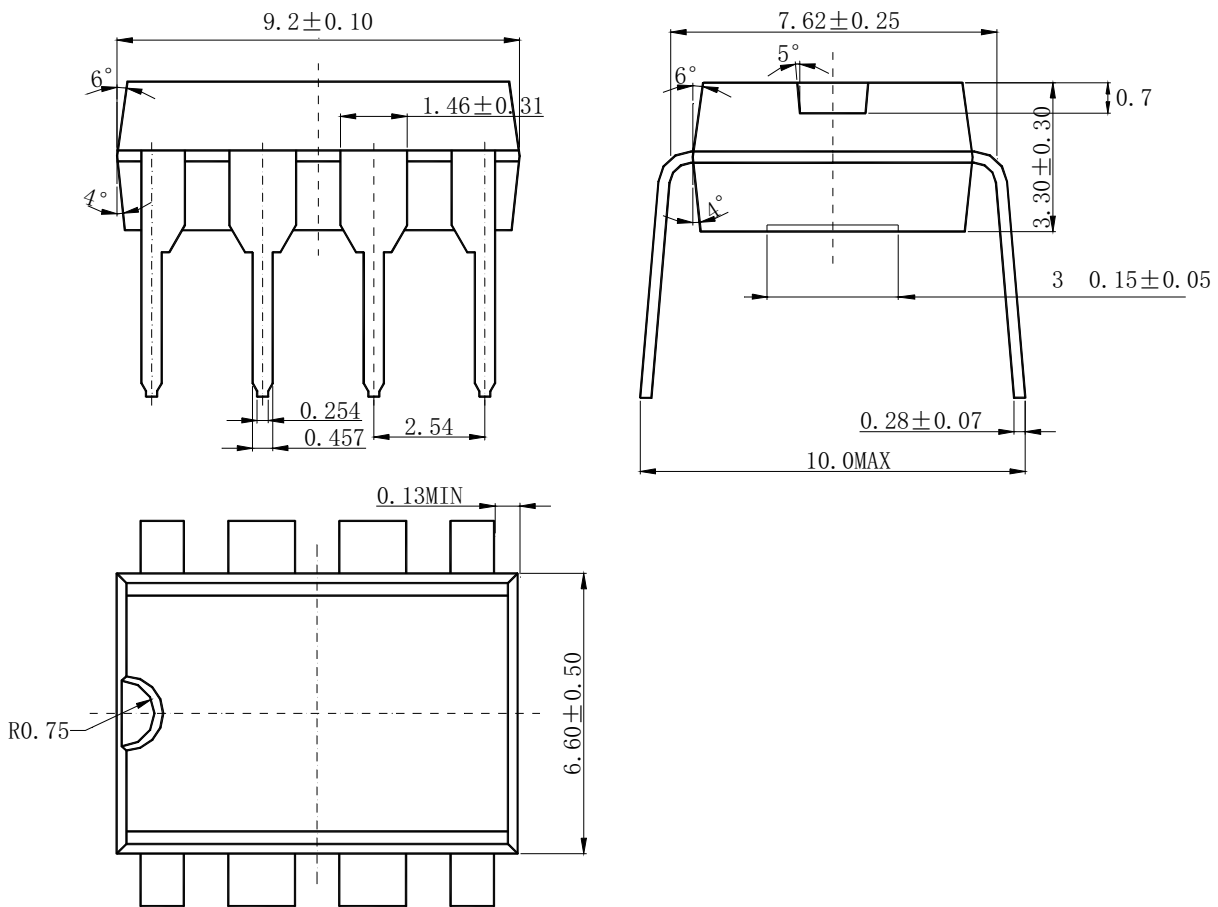
Figure 20. DC Coupled Low-Pass Active Filter

LR358

Mechanical Dimensions

DIP-8

Unit: mm



LR358

Mechanical Dimensions (Continued)

SOP-8

Unit: mm

