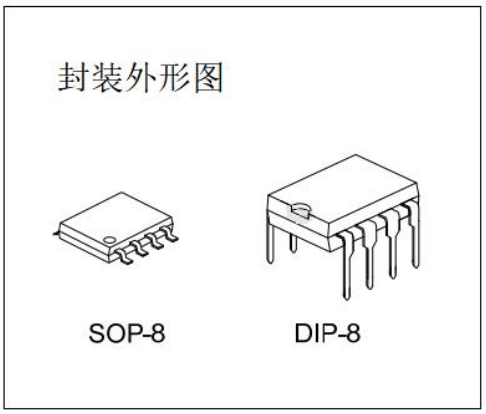
General Description

The LM258 series consists of two independent, high gain,internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage.

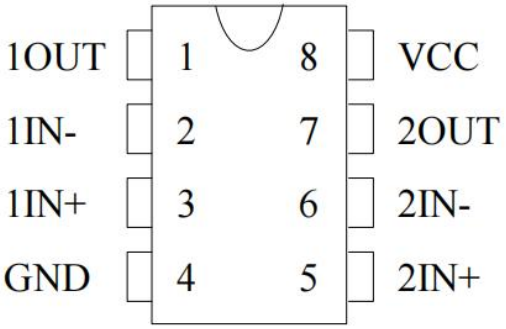
Application areas include transducer amplifiers, dc gain blocks and all the conventional op amp circuits which now can be more easily implemented in single power supply systems. For example, the LM258 series can be directly operated off of the standard +5V power supply voltage which is used in digital systems and will easily provide the required interface electronics without requiring the additional ±15V power supplies.



Features

- Wide power supply range:
  — Single supply: 4V to 32V
  — or dual supplies: ±2V to ±16V
- Very low supply current drain (500 μA)—essentially independent of supply voltage
- Wide bandwidth (unity gain): 1 MHz
- Low Input Bias Currents
- Common Mode Range Extends to Negative Supply

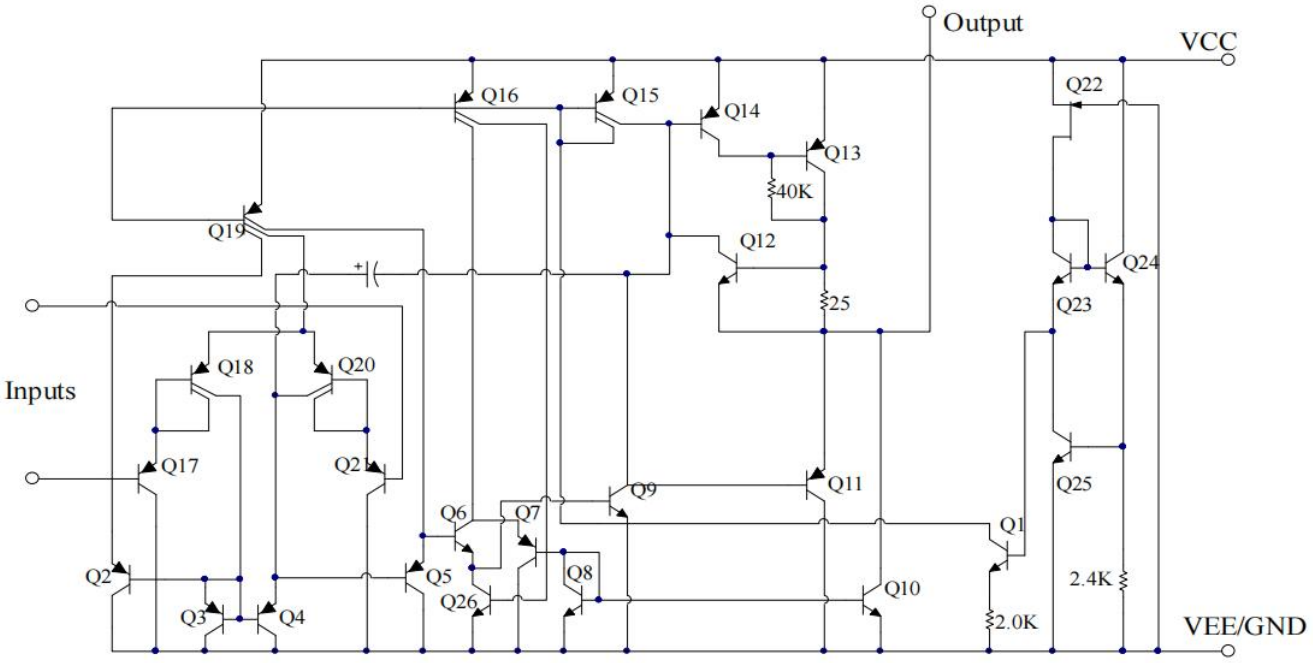
PIN CONNECTIONS



Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
XBLW LM258DTR	SOP-8	LM258	Tape	2500Pcs/Reel
XBLW LM258N	DIP-8	LM258N	Tube	2000Pcs/Box

Schematic Diagram（One-Half of Circuit Shown）



MAXIMUM RATINGS(TA = +25℃, unless otherwise noted.)

Rating		Value	Unit
Power Supply Voltages		32 or ±16	V
Input Differential Voltage Range		32	V
Input Common Mode Voltage Range		-0.3 ～ VCC	V
Power Dissipation (Note1)	DIP8	830	mW
	SOP8	530	
Output Short Circuit Duration （One Amplifier）（V≤15V,Ta=25℃）		Continuous	
Input Current（VIN<-0.3V）		50	mA
Junction Temperature		150	℃
Operating Temperature Range		-20 ～ 85	℃
Storage Temperature Range		-65 ～ 150	℃

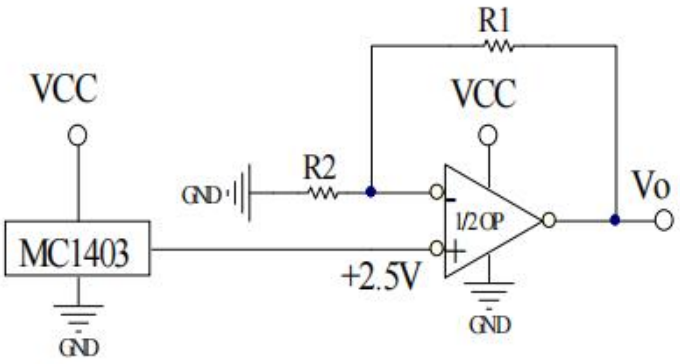
Note1：LM258 must be derated based on a +150°C maximum junction temperature.

ELECTRICAL CHARACTERISTICS

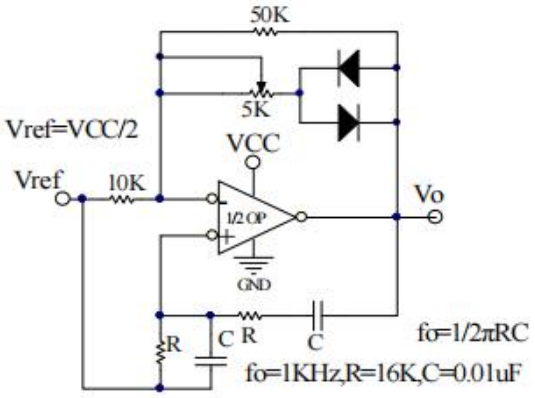
（Vcc=5.0V, TA = +25℃, unless otherwise noted.）

Parameter		Conditions		LM258 Min	LM258 Typ	LM258 Max	Units
Input Offset Voltage		Ta=25℃,VCC = 5.0 V to 30 V, VO =1.4 V,			2	5	mV
Input Bias Current		Ta=25℃ IIN(+)或 IIN（-），VCM=0V ，			45	250	nA
Input Offset Current		Ta=25℃ IIN(+) - IIN（-），VCM=0V ，			3	50	nA
Input Common Mode Voltage Range		Ta=25℃ V^+=30V ，		0		Vcc -1.5	V
Power Supply Current		RL=∞,Total Device	Vcc =30V		1	2	mA
			Vcc =5V		0.5	1.2	mA
Large Signal Open Loop Voltage Gain		Vcc =15V，Ta=25℃， RL≥2kΩ（for Vo=1~11V）		25	100		V/mV
Common Mode Rejection		DC，Ta=25℃， VCM=0~Vcc-1.5V		65	90		dB
Power Supply Rejection		DC，Ta=25℃， Vcc =5~30V		65	100		dB
Output Source Current		VIN(+)=1V,VIN(-)=0V,Vcc=15V,Vo=2V,Ta=25℃		20	40		mA
Output Sink Current		VIN(-)=1V,VIN(+)=0V,Vcc=15V,Vo=2V,Ta=25℃		10	15		mA
		VIN(-)=1V,VIN(+)=0V,Vcc=15V,Vo=200mV, Ta=25℃		12	50		μA
Output Short Circuit to Ground		Vcc=15V， Ta=25℃			40	60	mA
Output Voltage Swing	VOH	Vcc=30V	RL=2kΩ	26			V
		Vcc=30V	RL=10kΩ	27	28		V
	VOL	Vcc=5V，RL=10kΩ			5	20	mV

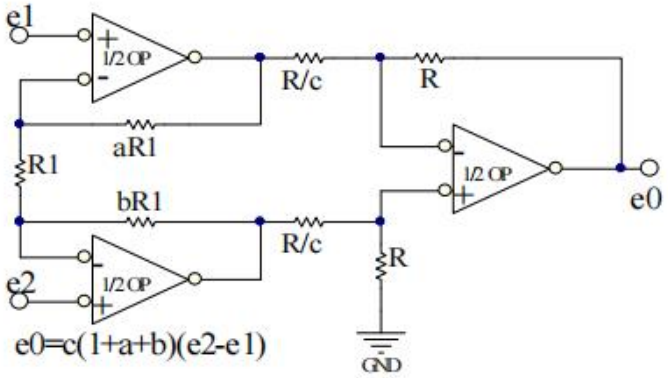
Typical Applications



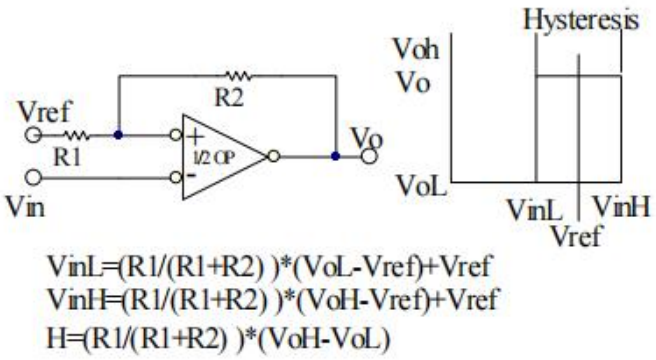
Voltage Reference, Vo=2.5V (1+R1/R2)



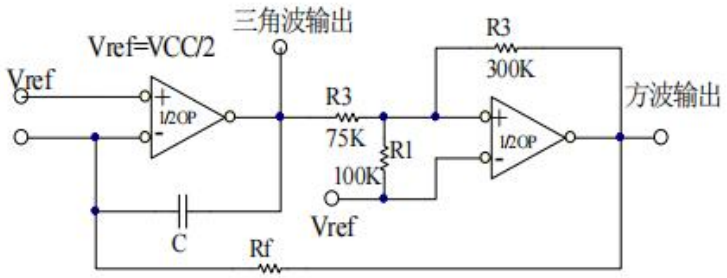
Wien Bridge Oscillator



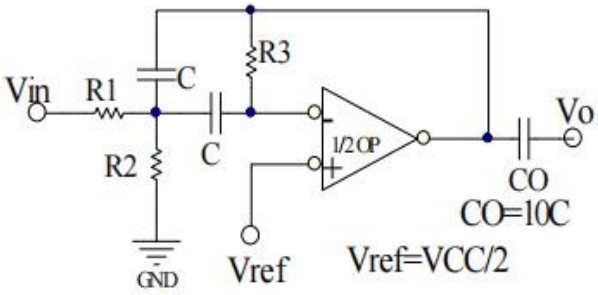
High Impedance Differential Amplifier



Comparator with Hysteresis



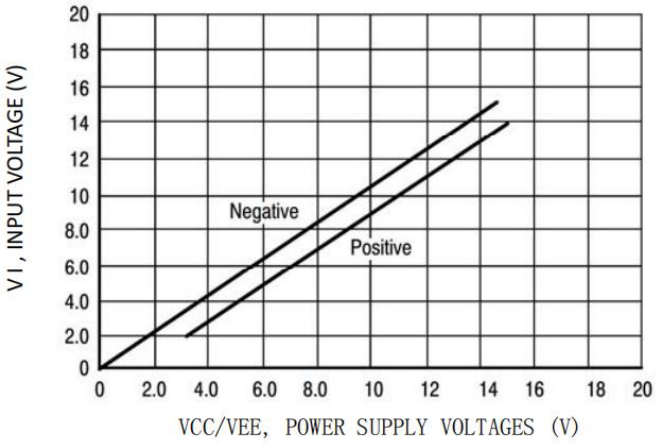
Function Generator



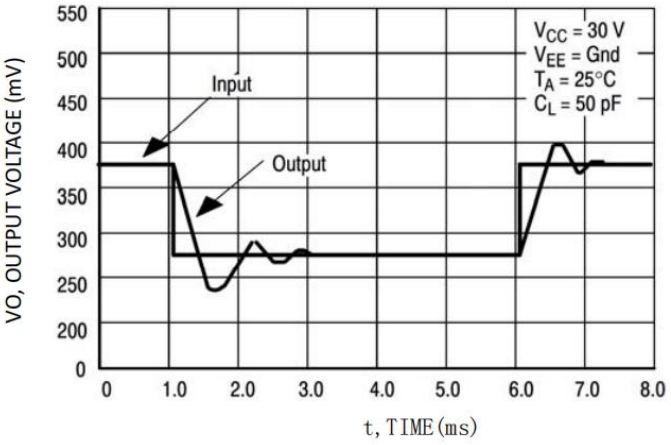
fo = center frequency

Multiple Feedback Bandpass Filter

Typical Performance Characteristics

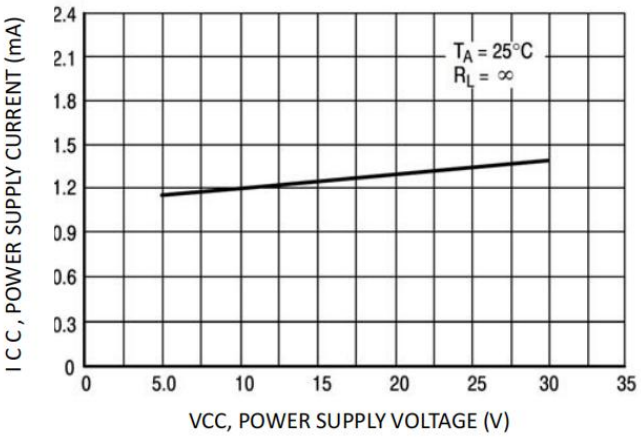


Input Voltage Range

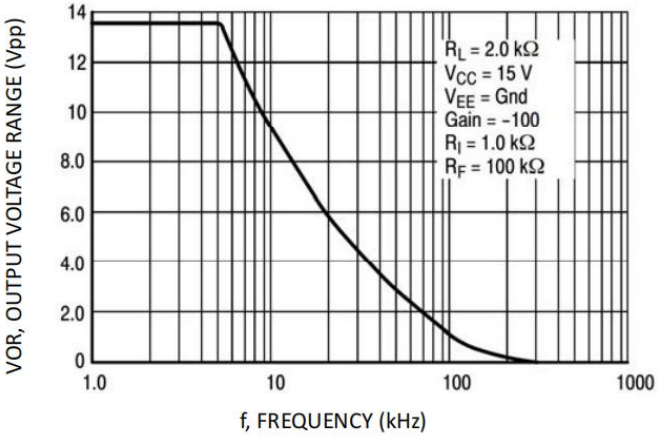


Small Signal Voltage Follower Pulse Response

(Noninverting)



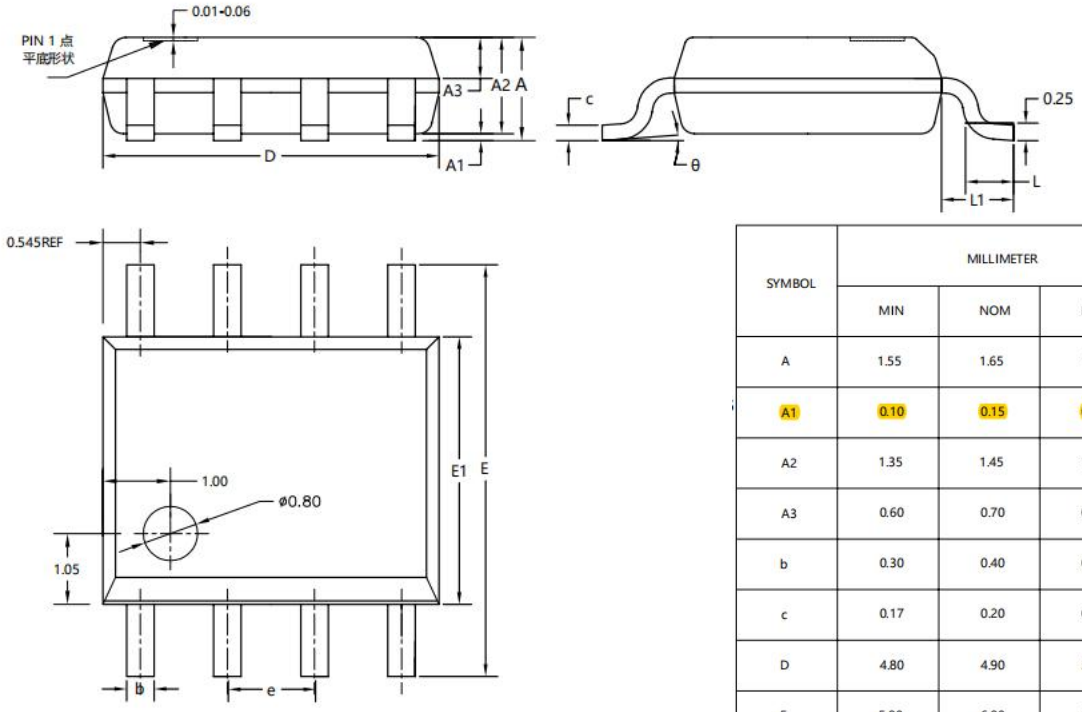
Power Supply Current versus Power Supply Voltage



Large-Signal Frequency Response

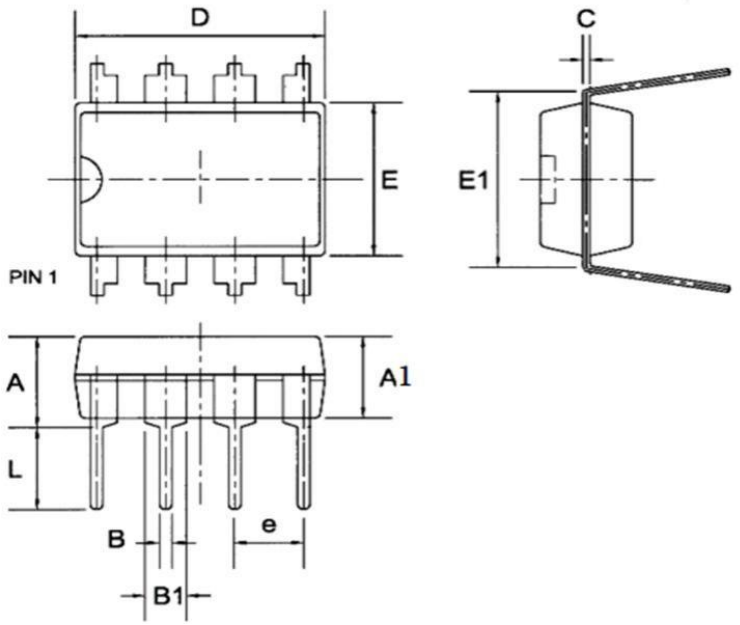
Package Information

SOP8



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	1.55	1.65	1.75
A1	0.10	0.15	0.20
A2	1.35	1.45	1.55
A3	0.60	0.70	0.80
b	0.30	0.40	0.50
c	0.17	0.20	0.25
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.50	0.60	0.70
L1	1.05REF		
θ	0°	4°	8°

DIP-8



Symbol	Dimensions in Millimeters		
	Min	Nom	Max
A	--	--	4.31
A1	3.15	3.30	3.65
B	0.38	0.46	0.51
B1	1.27	1.55	1.77
C	0.20	0.25	0.30
D	8.95	9.40	9.45
E	6.15	6.20	6.65
E1	--	7.60	--
e	--	2.54	--
L	3.00	3.30	3.60

Statement：

✧ Shenzhen xinbole electronics co., ltd. reserves the right to change the product specifications, without notice! Before placing an order, the customer needs to confirm whether the information obtained is the latest version, and verify the integrity of the relevant information.

✧ Any semiconductor product is liable to fail or malfunction under certain conditions, and the buyer shall be responsible for complying with safety standards in the system design and whole machine manufacturing using Shenzhen xinbole electronics co., ltd products, and take appropriate security measures to avoid the potential risk of failure may result in personal injury or property losses of the situation occurred!

✧ This document is for referenceonly,and the actual use should be based on the application test results.

✧ Product performance is never ending, Shenzhen xinbole electronics co., ltd will be dedicated to provide customers with better performance, better quality of integrated circuit products.