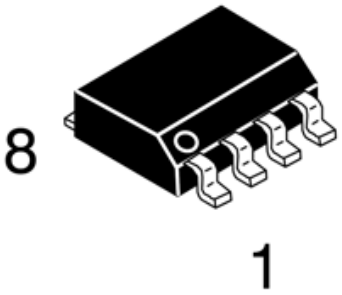
General Description

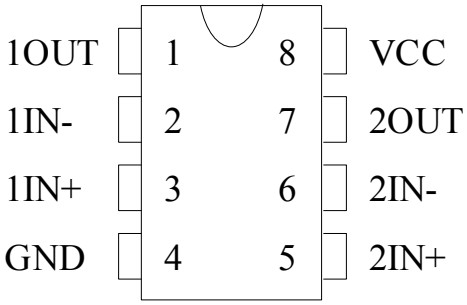
The LM258DR-CN series consists of two independent, high gain, internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current 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 LM258DR-CN series can be directly operated off of the standard +5V power supply voltage which is used in digital systemsand will easily provide the required interface electronics without requiring the additional ±15V power supplies.



SOP8

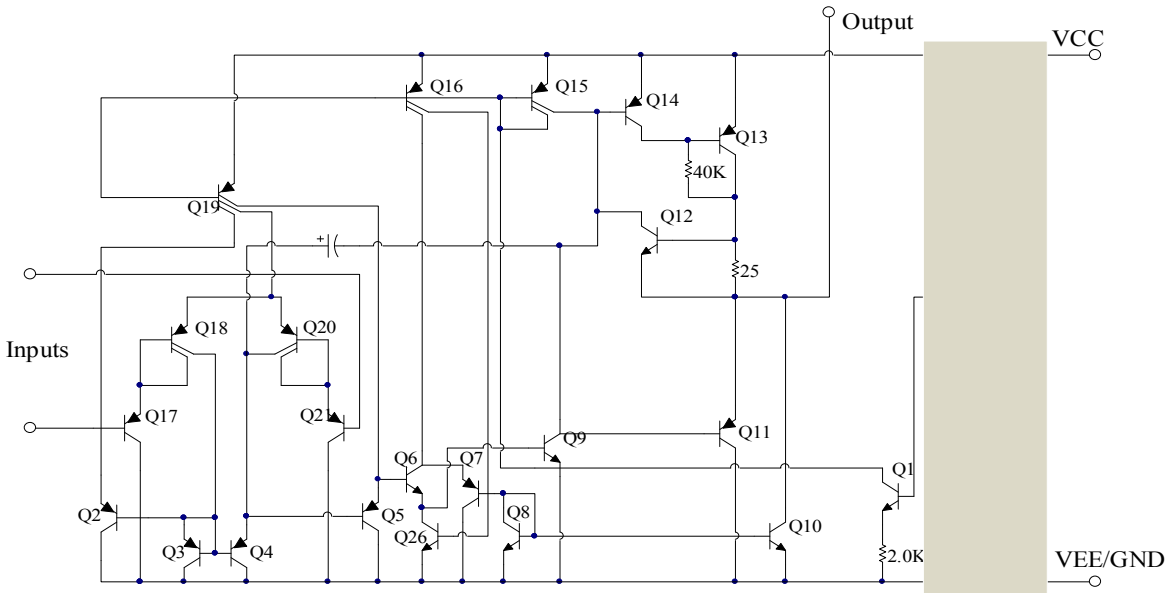
PIN CONNECTIONS



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

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)	SOP8	530	mW
Output Short Circuit Duration （One Amplifier）（V≤15V,Ta=25℃）		Continuous	
Input Current（VIN<-0.3V）		50	mA
Junction Temperature		150	℃
Operating Temperature Range		-25～ 85	℃
Storage Temperature Range		-65 ～ 150	℃

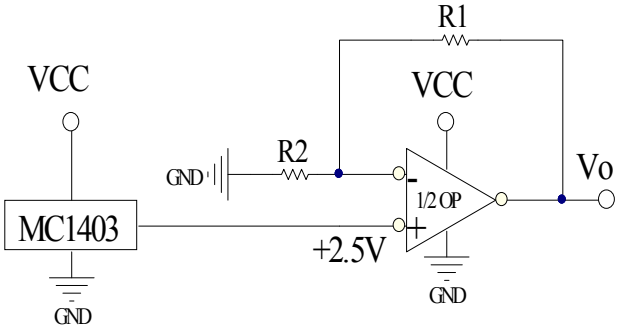
Note1：LM258DR-CN must be derated based on a +150°C maximum junction temperature.

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

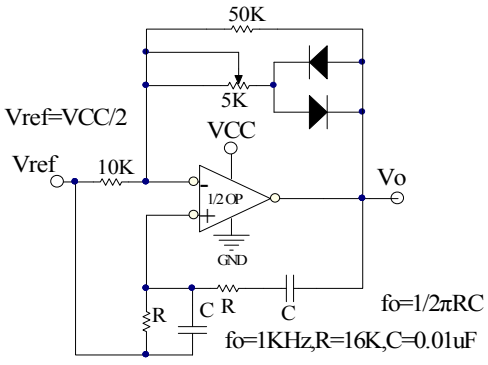
Parameter	Conditions	LM258			Units
		Min	Typ	Max	
Input Offset Voltage	Ta=25℃, VCC = 5.0 V to 30 V, VO =1.4 V,		2	5	mV
Input Bias Current	Ta=25℃，IIN(+)或 IIN（-），VCM=0V		45	250	nA
Input Offset Current	Ta=25℃，IIN(+) - IIN（-），VCM=0V		3	50	nA
Input Common Mode Voltage Range	Ta=25℃，V^+=30V	0		Vcc -1.5	V

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

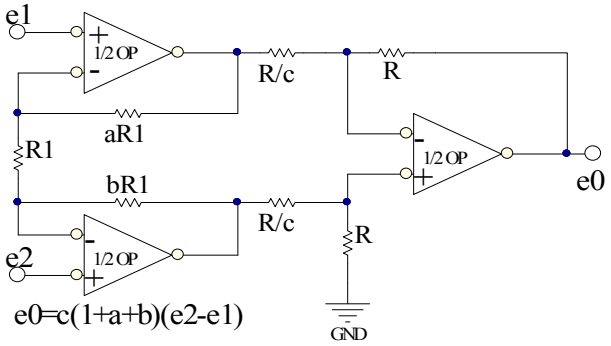
Typical Applications



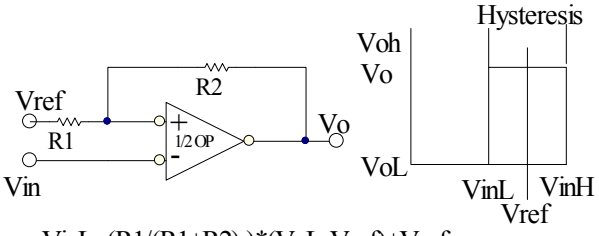
Voltage Reference，Vo=2.5V（1+R1/R2）



Wien Bridge Oscillator

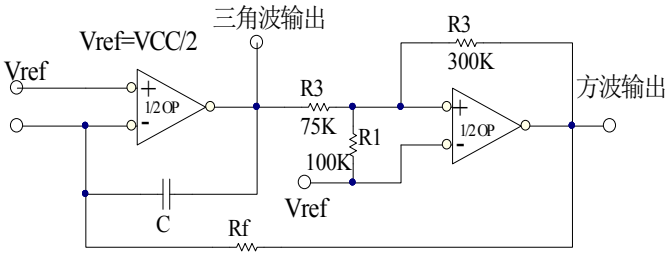


High Impedance Differential Amplifier

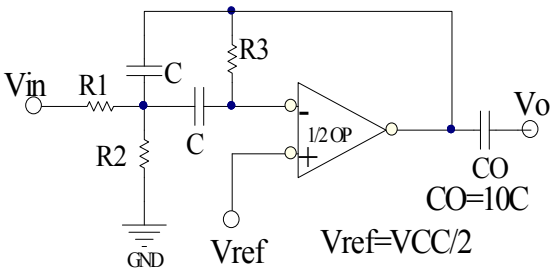


VinL=(R1/(R1+R2))*(VoL-Vref)+Vref
VinH=(R1/(R1+R2))*(VoH-Vref)+Vref
H=(R1/(R1+R2))*(VoH-VoL)

Comparator with Hysteresis



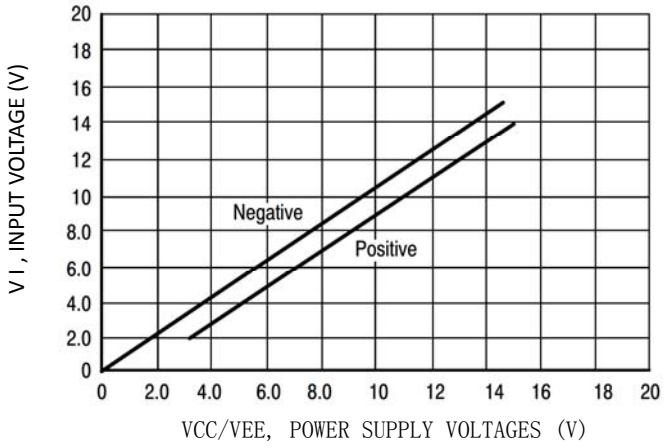
Function Generator



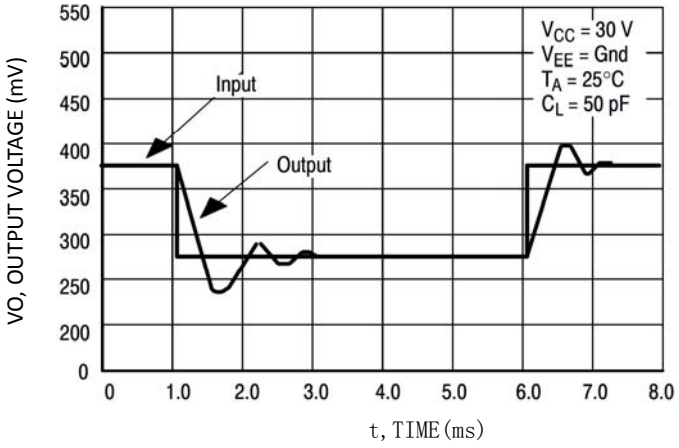
fo = center frequency

Multiple Feedback Bandpass Filter

Typical Performance Characteristics

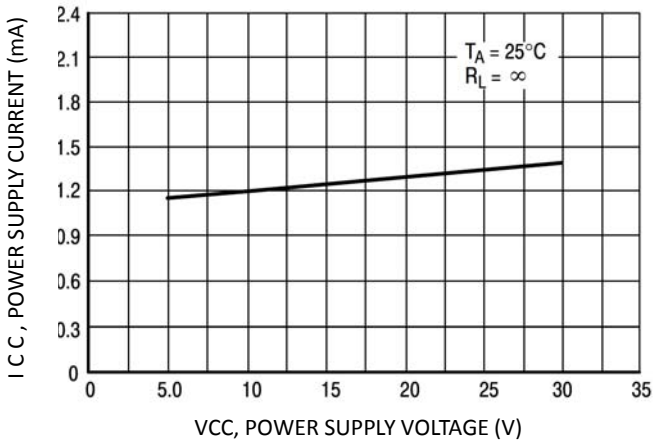


Input Voltage Range

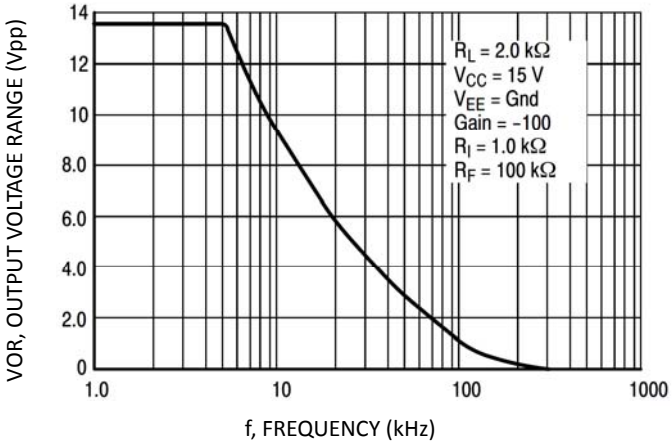


Small Signal Voltage Follower Pulse Response

(Noninverting)

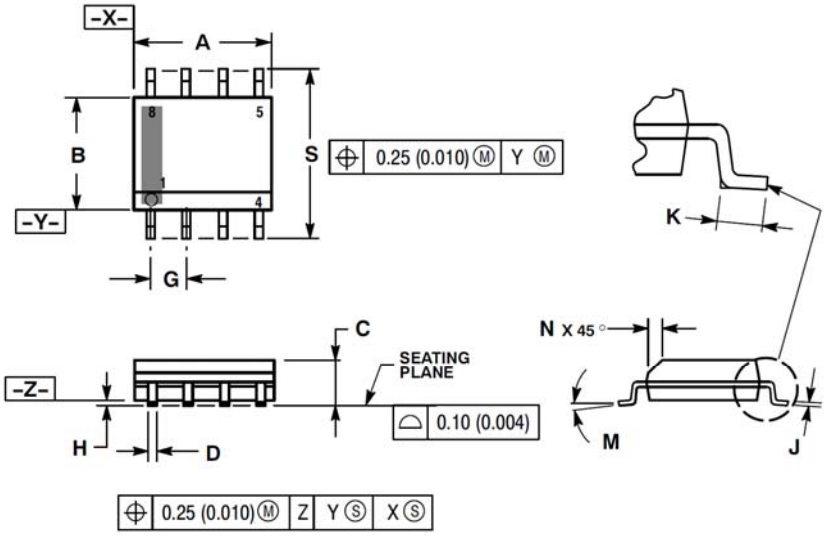


Power Supply Current versus Power Supply Voltage



Large-Signal Frequency Response

Physical Dimensions



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. 751-01 THRU 751-06 ARE OBSOLETE. NEW STANDARD IS 751-07.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.197
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.020
G	1.27 BSC		0.050 BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.016	0.050
M	0°	8°	0°	8°
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244

SOP8

NOTICE

The information presented in this document is for reference only. Involving product optimization and productivity improvement, ChipNobo reserves the right to adjust product indicators and upgrade some technical parameters. ChipNobo is entitled to be exempted from liability for any delay or non-delivery of the information disclosure process that occurs.
本文件中提供的信息仅供参考。涉及产品优化和生产效率改善，ChipNobo 有权调整产品指标和部分技术参数的升级，所出现信息披露过程存在延后或者不能送达的情形，ChipNobo 有获免责权。

The product listed herein is designed to be used with residential and commercial equipment, and do not support sensitive items and specialized equipment in areas where sanctions do exist. ChipNobo Co., Ltd or anyone on its behalf, assumes no responsibility or liability for any damages resulting from improper use.
此处列出的产品旨在民用和商业设备上使用，不支持确有制裁地区的敏感项目和特殊设备，ChipNobo 有限公司或其代表，对因不当使用而造成的任何损害不承担任何责任。

For additional information, please visit our website http://www.chipnobo.com, or consult your nearest Chipnobo sales office for further assistance.
欲了解更多信息，请访问我们的网站 http://www.chipnobo.com，或咨询离您最近的 Chipnobo 销售办事处以获得进一步帮助。