

LM358-P8

DUAL OPERATIONAL AMPLIFIERS

DESCRIPTION

The LM358 consists of dual independent, high gain, internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide voltage range.

Operation from split power supplies is also possible so long as the difference between the two supplies 3 V to 26 V.

Application areas include transducer amplifiers, DC gain blocks and all the conventional OP amp circuits which now can be easily implemented in single power supply systems.

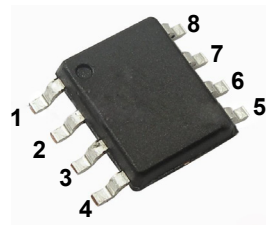
FEATURES

- * Internally frequency compensated for unity gain
- * Large DC voltage gain :100dB
- * Wide operating supply range($V_{cc}=3V\sim 26V$ or $\pm 1.5V\sim \pm 13V$)
- * Input common-mode voltage includes ground
- * Large output voltage swing: From 0V to $V_{cc}-1.5V$
- * Power drain suitable for battery operation



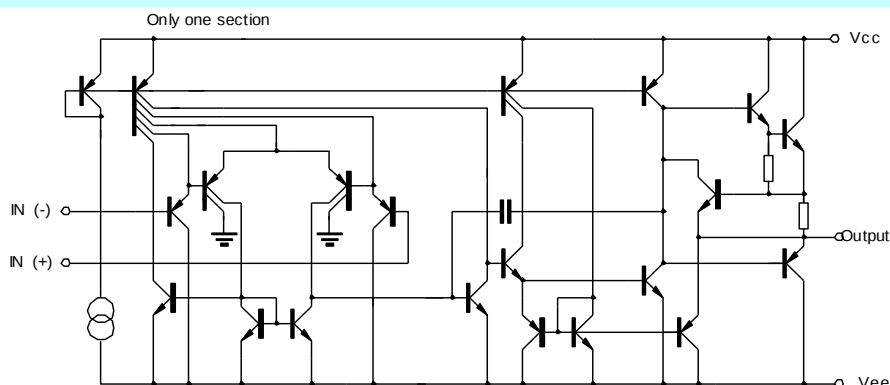
SOP-8

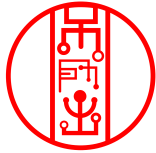
Pinning



PIN1:OUT1	PIN5:IN2+
PIN2:IN1-	PIN6:IN2-
PIN3:IN1+	PIN7:OUT2
PIN4:Vee	PIN8:Vcc

BLOCK DIAGRAM





LM358-P8

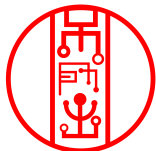
ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	Vcc	±15or30	V
Differential input voltage	Vi(diff)	26	V
Input Voltage	Vi	-0.3~26	V
Operating Temperature	Topr	-20 to +85	°C
Storage Temperature	Tstg	-65 to 150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

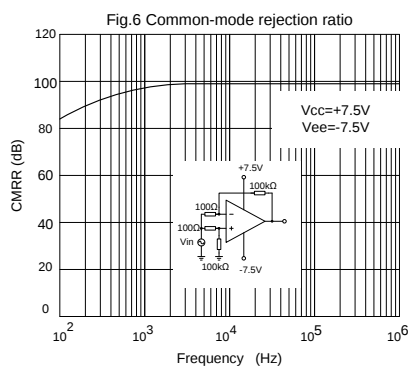
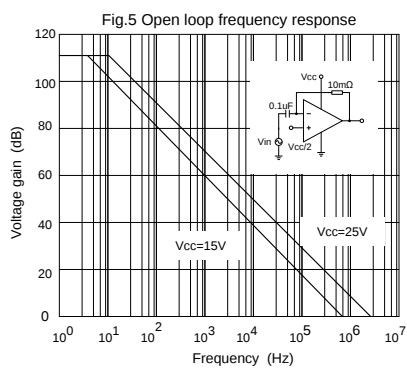
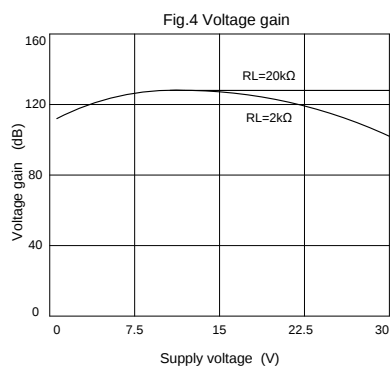
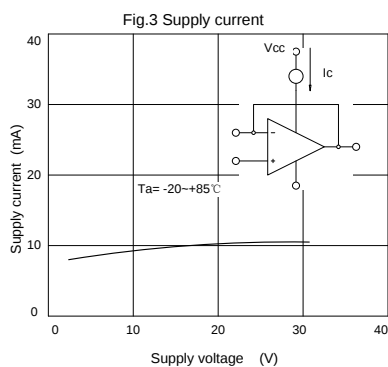
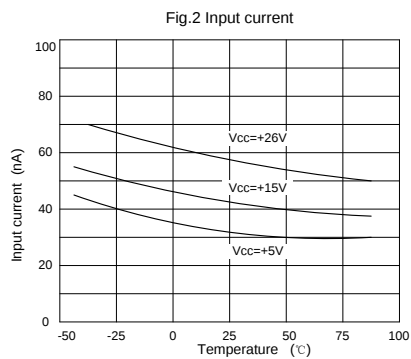
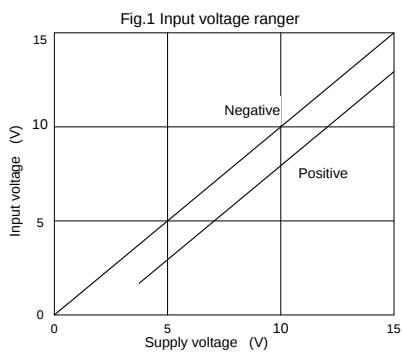
(Vcc=5.0V, All voltage referenced to GND unless otherwise specified)

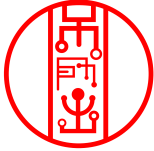
Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Input offset voltage	Vio	VCM=0 to Vcc-1.5 Vo(p)=1.4V, Rs=0		2	7.0	mV
Input offset current	Iio			5	50	nA
Input bias current	Ib			45	250	nA
Input common-mode voltage range	Vicm	Vcc=25V	0		Vcc-1.5	V
Supply current	Icc	RL=∞, Vcc=25V		0.8	2.0	mA
		Vcc=5V		0.5	1.2	mA
Large signal voltage gain	Gv	Vcc=15V, RL=2kΩ Vo(p)=1V to 11V	25	100		V/mV
Output voltage swing	V(OH)	Vcc=25V, RL=2kΩ	21			V
		Vcc=25V, RL=10kΩ	22	23		V
	V(OL)	Vcc=5V, RL=10kΩ		5	20	mV
Common-mode rejection ratio	CMRR		65	75		dB
Power supply rejection ratio	PSRR		65	100		dB
Channel separation	CS	f=1kHz to 20kHz		120		dB
Output short circuit to GND	Isc			40	60	mA
Output current	Isource	Vi(+)=1V, Vi(-)=0 Vcc=15V, Vo(p)=2V	20	40		mA
	Isink	Vi(+)=0V, Vi(-)=1V Vcc=15V, Vo(p)=2V	10	13		mA
		Vi(+)=0V, Vi(-)=1V Vcc=15V, Vo(p)=200mV	12	45		μA
Differential input voltage	Vi(diff)				Vcc	V
Slew rate	SR	Vi(+)=10V, Vi(-)=0V Vcc=±15V, RL=2KΩ, CI=100pF		1.0		V/μs



LM358-P8

TYPICAL CHARACTERISTICS PERFORMANCE





LM358-P8

Fig.7 Voltage follower pulse response

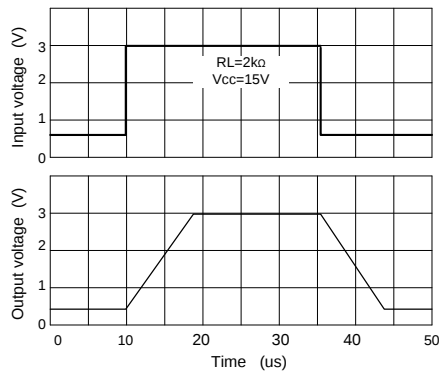


Fig.8 Voltage follower pulse response (small signal)

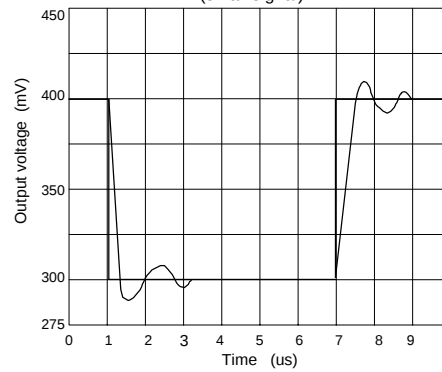


Fig.9 Large signal frequency response

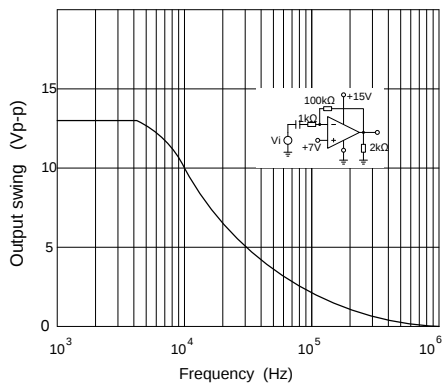


Fig.10 Output characteristics current sourcing

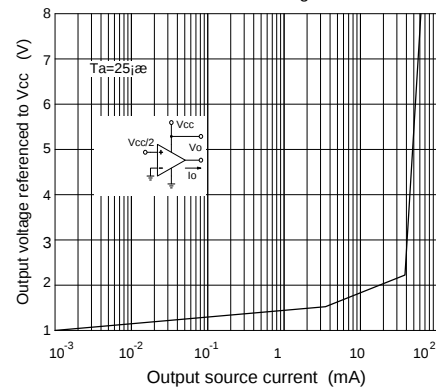


Fig.11 Output characteristics current sinking

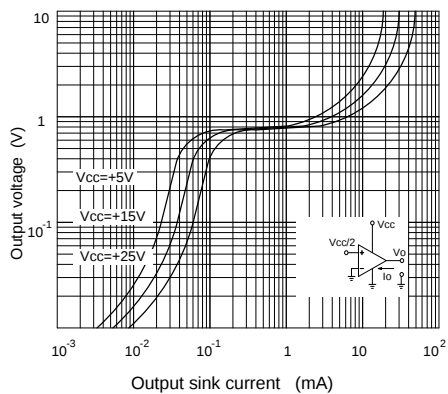
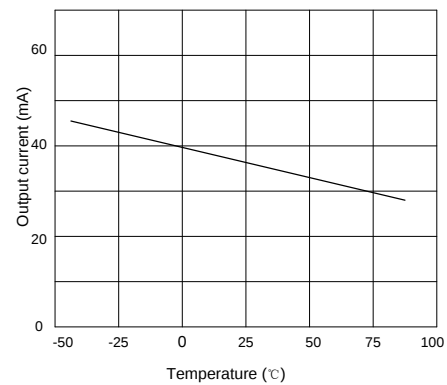
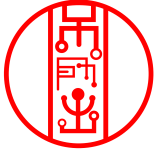


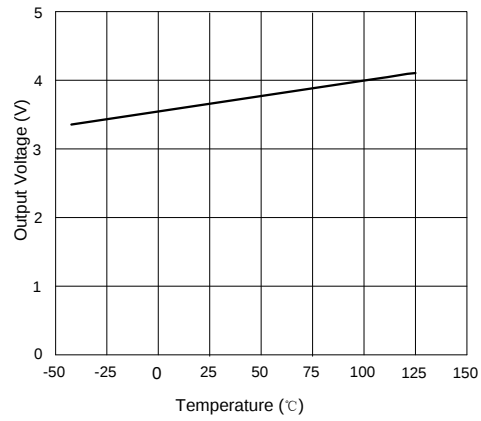
Fig.12 Current limiting

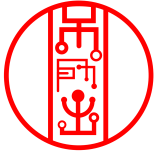




LM358-P8

Fig.13 Output Voltage&temperature





LM358-P8

标注	尺寸	最小 (mm)	最大 (mm)	标注	尺寸	最小 (mm)	最大 (mm)
A		4.80	5.00	C3		0.05	0.20
A1		0.356	0.456	C4		0.203	0.233
A2		1.27TYP		D		1.05TYP	
A3		0.345TYP		D1		0.40	0.80
B		3.80	4.00	R1		0.20TYP	
B1		5.80	6.20	R2		0.20TYP	
B2		5.00TYP		θ 1		17° TYP4	
C		1.30	1.60	θ 2		13° TYP4	
C1		0.55	0.65	θ 3		0° ~ 8°	
C2		0.55	0.65	θ 4		4° ~ 12°	

