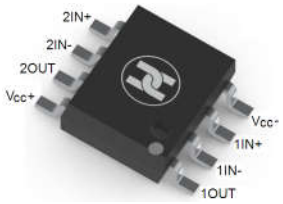
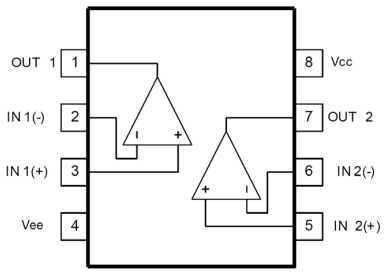
DUAL OPERATIONAL AMPLIFIERS



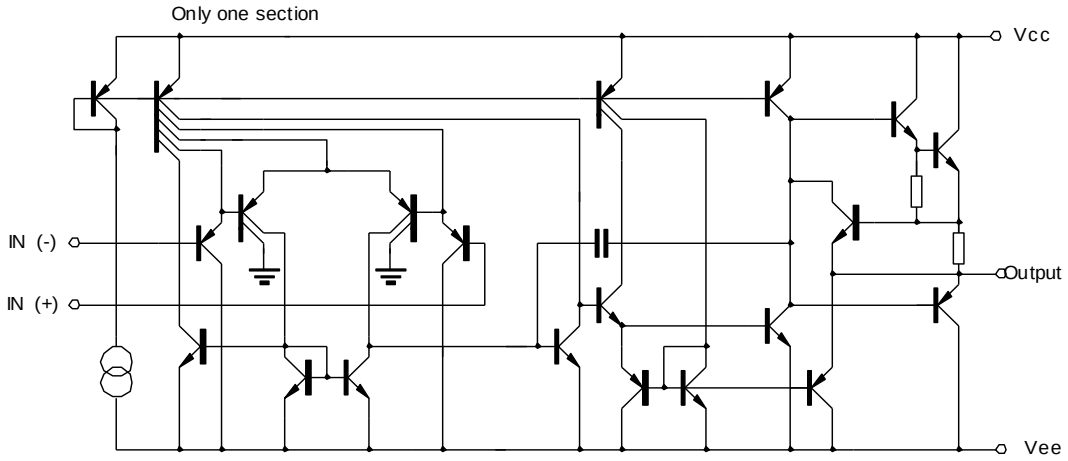
FEATURES

- Internally frequency compensated for unity gain
- Large DC voltage gain: 100dB
- Wide operating supply range (Vcc=3V~32V or ±1.5V~±16V)
- Input common-mode voltage includes ground
- Large output voltage swing: From 0V to Vcc -1.5V
- Power drain suitable for battery operation
- Mg: LM358

SOP-8



BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	Vcc	±18or36	V
Differential input voltage	$V_{i(diff)}$	32	V
Input Voltage	V_i	-0.3~32	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	V_{IO}	V_{CM}=0 to Vcc-1.5 Vo(p)=1.4V,Rs=0		2	7.0	mV
Input offset current	I_{IO}			5	50	nA
Input bias current	Ib			45	250	nA
Input common-mode voltage range	V_{ICM}	Vcc=30V	0		Vcc-1.5	V
Supply current	Icc	R_L=∞,Vcc=30V		0.8	2.0	mA
		Vcc=5V		0.5	1.2	mA
Large signal voltage gain	G_V	Vcc=15V,R_L=2kΩ Vo(p)=1V to 11V	25	100		V/mV
Output voltage swing	$V_{(OH)}$	Vcc=30V,R_L=2kΩ	26			V
		Vcc=30V,R_L=10kΩ	27	28		V
	$V_{(OL)}$	Vcc=5V,R_L=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	$V_{I(+)}$=1V,$V_{I(-)}$=0 Vcc=15V,Vo(p)=2V	20	40		mA
	Isink	$V_{I(+)}$=0V,$V_{I(-)}$=1V Vcc=15V,Vo(p)=2V	10	13		mA
		$V_{I(+)}$=0V,$V_{I(-)}$=1V Vcc=15V,Vo(p)=200mV	12	45		μA
Differential input voltage	Vi(diff)				Vcc	V

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TYPICAL CHARACTERISTICS PERFORMANCE

Fig.1 Input voltage ranger

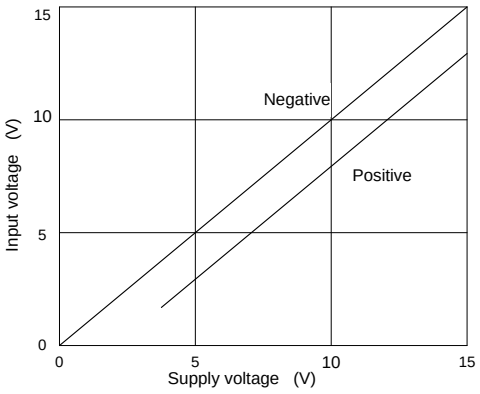

Fig.2 Input current

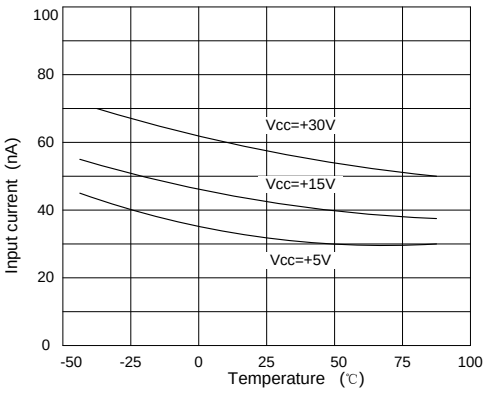

Fig.3 Supply current

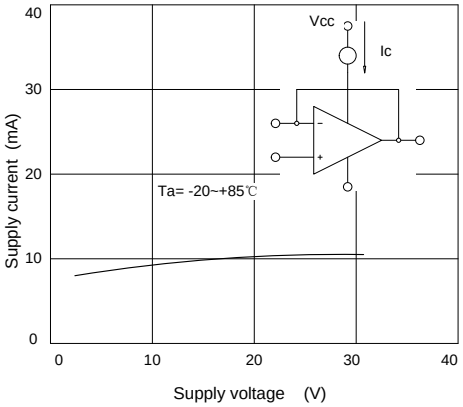

Fig.4 Voltage gain

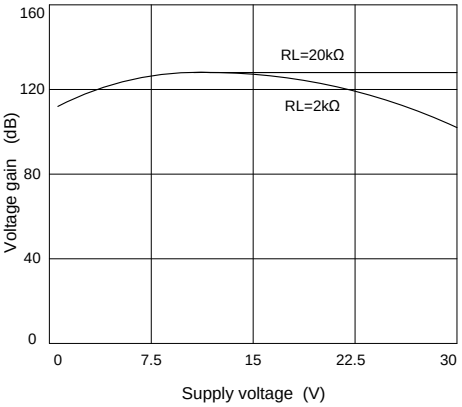

Fig.5 Open loop frequency response

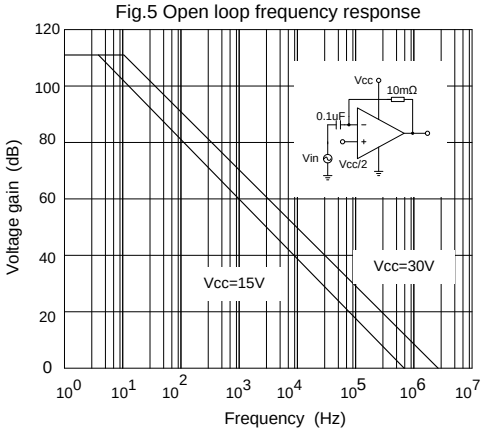

Fig.6 Common-mode rejection ratio

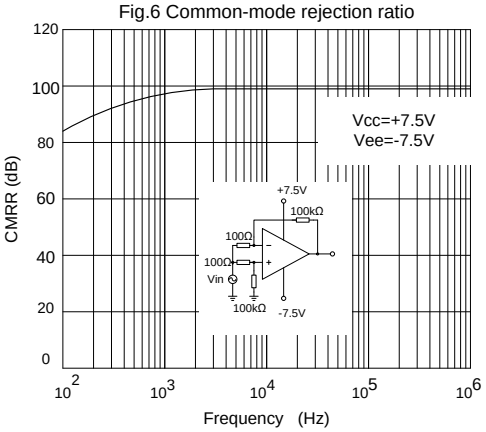

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Fig.7 Voltage follower pulse response

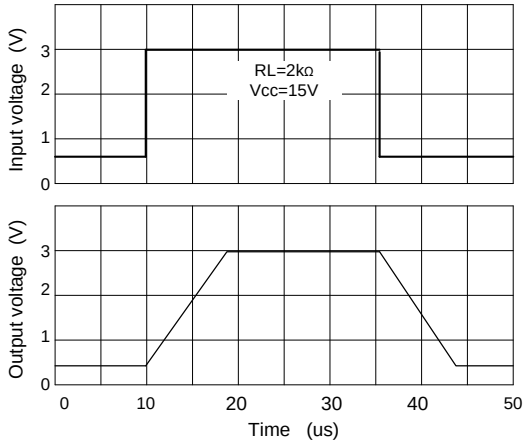


Fig.8 Voltage follower pulse response (small signal)

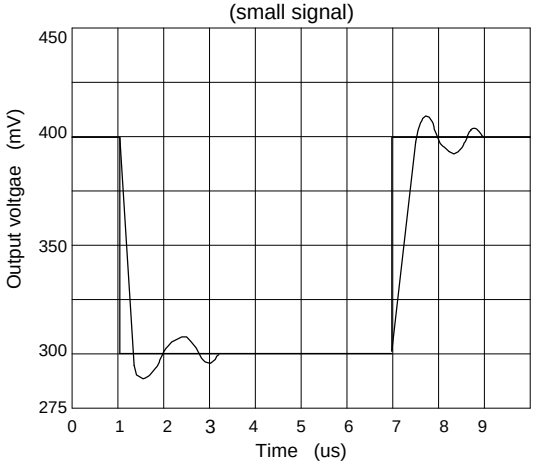


Fig.9 Large signal frequency response

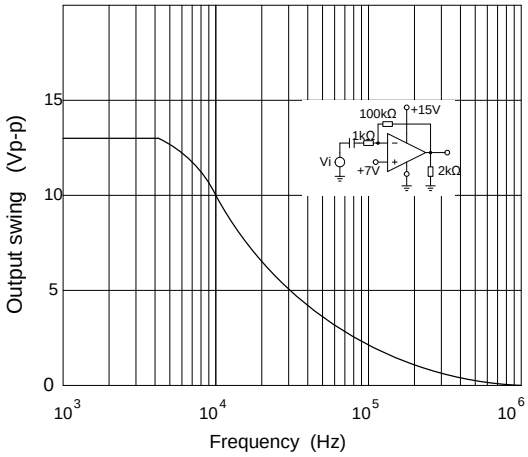


Fig.10 Output characteristics current sourcing

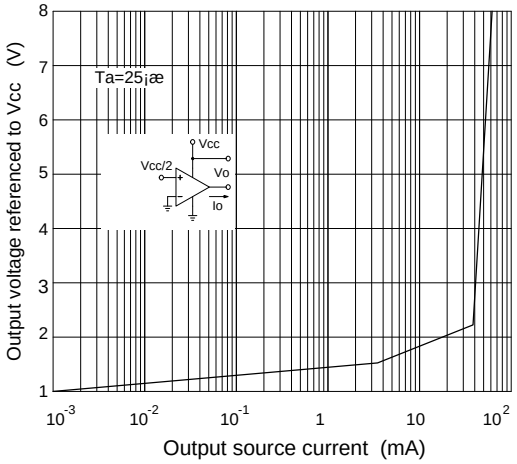


Fig.11 Output characteristics current sinking

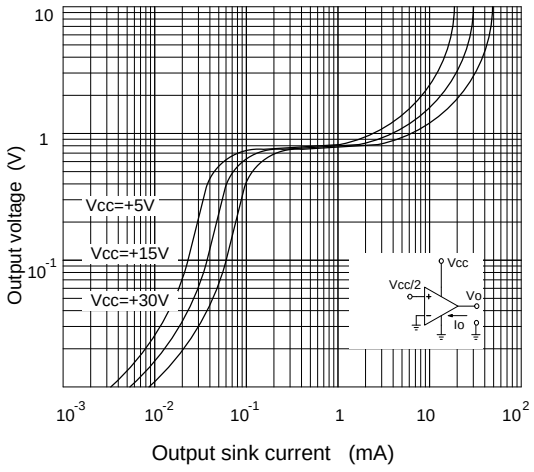
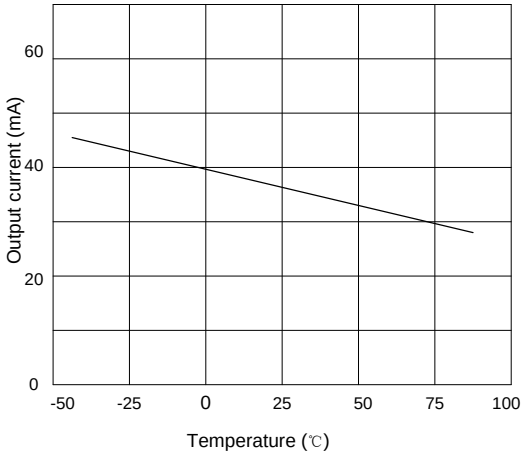
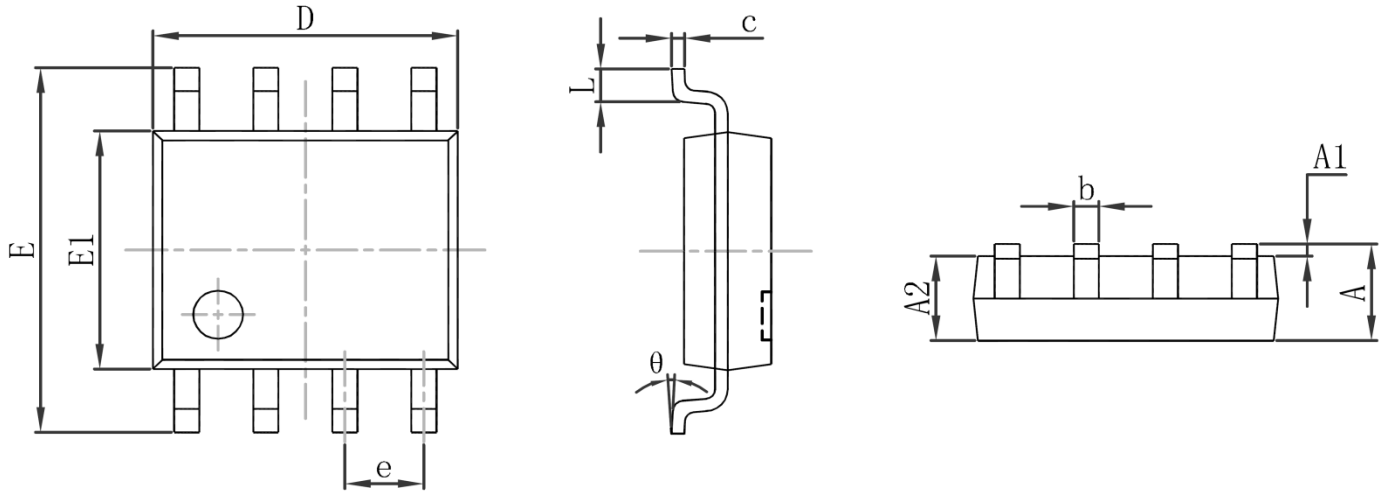


Fig.12 Current limiting



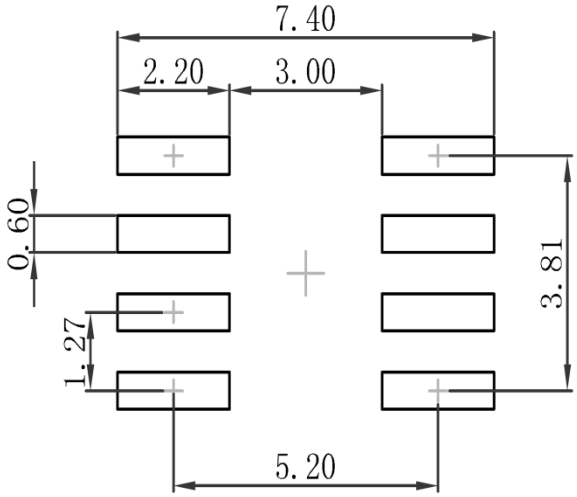
DUAL OPERATIONAL AMPLIFIERS

SOP-8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270(BSC)		0.050（BSC）	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOP-8 Suggested Pad Layout



Note:

1.Controlling dimension: in millimeters

2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

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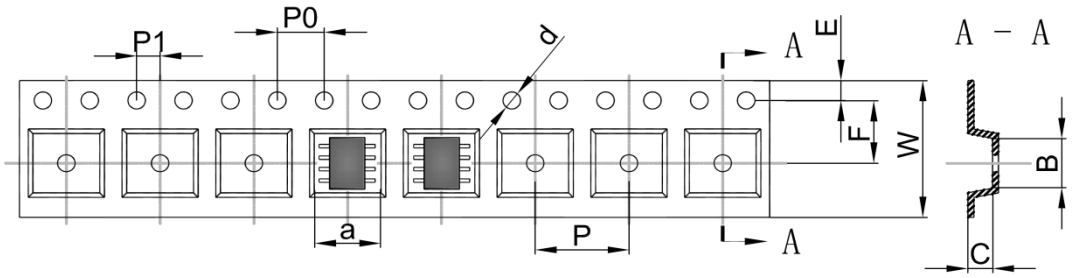
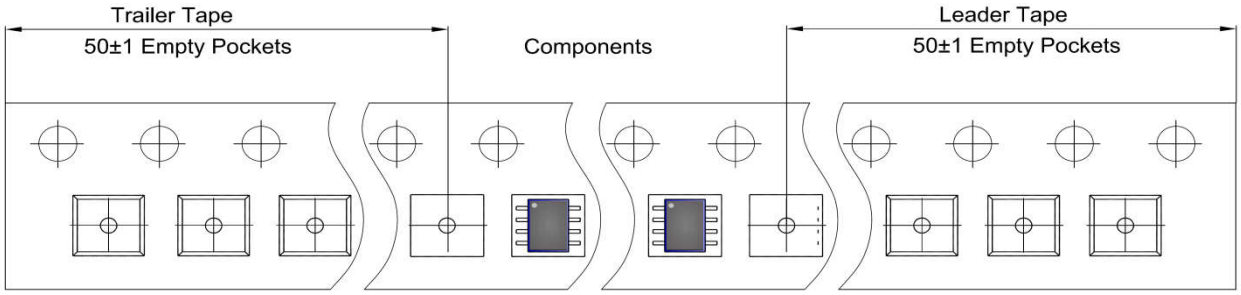
SOP-8 Tape and Reel

SOP-8 Embossed Carrier Tape

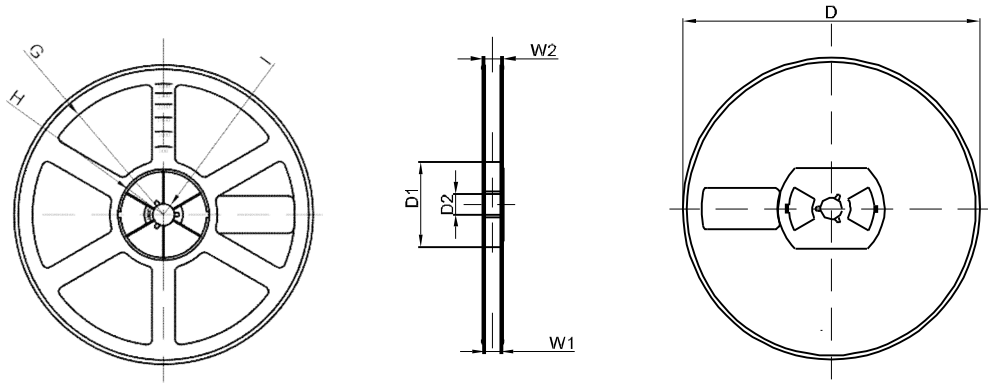


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOP-8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOP-8 Tape Leader and Trailer



SOP-8 Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13” DIA	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1