

UTC358

LINEAR INTEGRATED CIRCUIT

DUAL OPERATIONAL AMPLIFIERS

DESCRIPTION

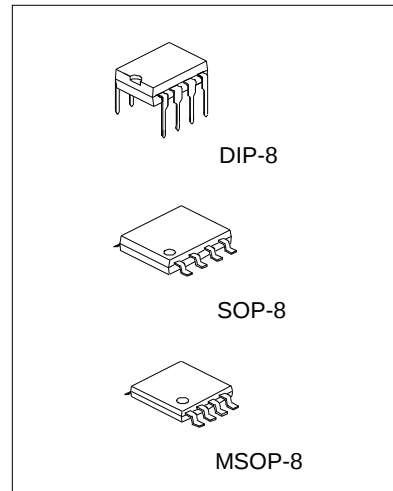
The UTC358 consists of dual independent, high gain internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide voltage range.

Operation from split power supplies is also possible so long as the difference between the two supplies is 3 volts to 32 volts.

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

FEATURES

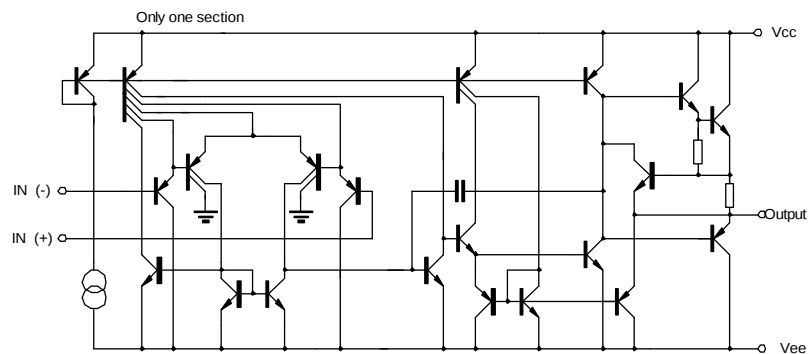
- *Internally frequency compensated for unity gain
- *Large DC voltage gain :100dB
- *Wide operating supply range($V_{CC}=3V\sim 32V$)
- *Input common-mode voltage includes ground
- *Large output voltage swing: From 0V to $V_{CC}-1.5V$
- *Power drain suitable for battery operation



ORDERING INFORMATION

Device	Package
UTC358D	DIP-8-300-2.54
UTC358	SOP-8-225-1.27
UTC358N	MSOP-8-170-0.65

BLOCK DIAGRAM



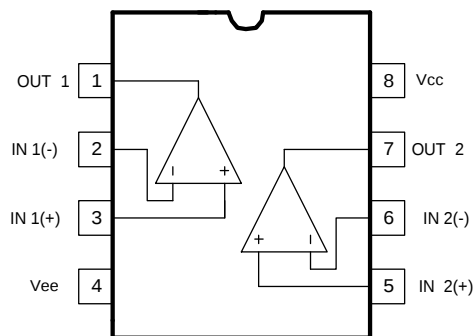
ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	± 18	V
Differential input voltage	$V_{I(DIFF)}$	32	V
Input Voltage	V_I	-0.3~32V	V
Power Dissipation	P_d	570	mW
Operating Temperature	T_{opr}	0 to +70	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-65 to 150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$)(V_{CC}=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 $V_{CC}-1.5$ $V_{O(p)}=1.4\text{V}$, $R_s=0$		2.9	7.0	mV
Input offset current	I_{IO}			5.0	50	nA
Input Bias current	I_b			45	250	nA
Input Common-mode voltage range	$V_{I(R)}$	$V_{CC}=30\text{V}$	0	$V_{CC}-1.5$		V
Supply Current	I_{CC}	$R_L=\infty$, $V_{CC}=30\text{V}$		0.8	2.0	mA
		$V_{CC}=5\text{V}$		0.5	1.2	mA
Large signal Voltage Gain	G_v	$V_{CC}=15\text{V}$, $R_L>2\text{k}\Omega$ $V_{O(p)}=1\text{V}$ to 11V	25	100		V/mV
Output voltage Swing	$V_{(OH)}$	$V_{CC}=30\text{V}$, $R_L=2\text{k}\Omega$	26			V
		$V_{CC}=30\text{V}$, $R_L=10\text{k}\Omega$	27	28		V
	$V_{(OL)}$	$V_{CC}=5$, $R_L>10\text{k}\Omega$		5	20	mV
Common-mode rejection Ratio	CMRR		65	75		dB
Power supply rejection Ratio	PSRR		65	100		dB
Chanel Separation	CS	$f=1\text{kHz}$ to 20kHz		5	20	mV
Short circuit to GND	I_{sc}			40	60	mA
Output current	I_{source}	$V_{I(+)}=1\text{V}$, $V_{I(-)}=0$ $V_{CC}=15\text{V}$, $V_{O(p)}=2\text{V}$	20	40		mA
	I_{sink}	$V_{I(+)}=0\text{V}$, $V_{I(-)}=1\text{V}$ $V_{CC}=15\text{V}$, $V_{O(p)}=2\text{V}$	10	13		mA
		$V_{I(+)}=1\text{V}$, $V_{I(-)}=0$ $V_{CC}=15\text{V}$, $V_{O(p)}=200\text{V}$	12	45		μA
Differential input voltage	$V_{I(diff)}$				V_{CC}	V

PIN CONFIGURATION



Any Class-1 or Class-2 Ozone depleting substances are not used in this component or its manufacturing. (As per defined under section 611 of the clean air act)

TYPICAL CHARACTERISTICS PERFORMANCE

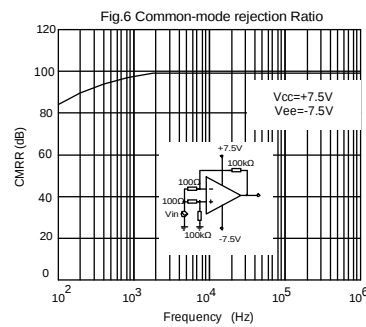
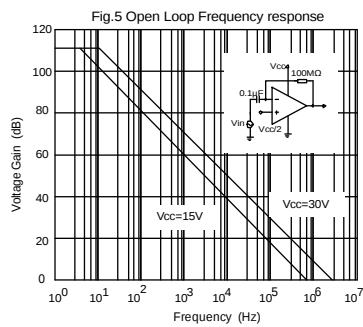
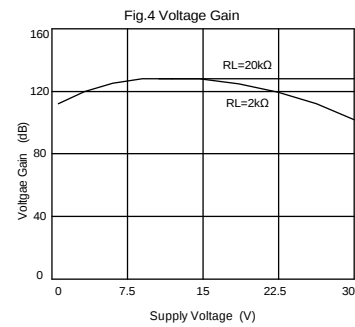
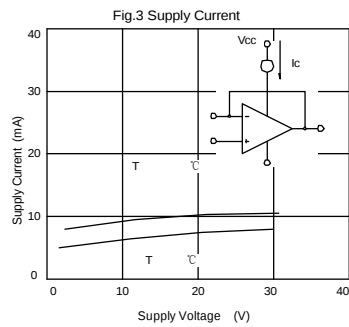
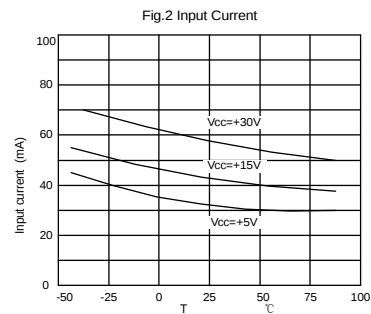
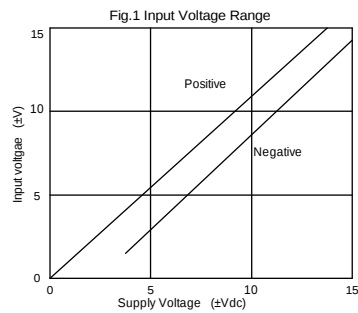


Fig.7

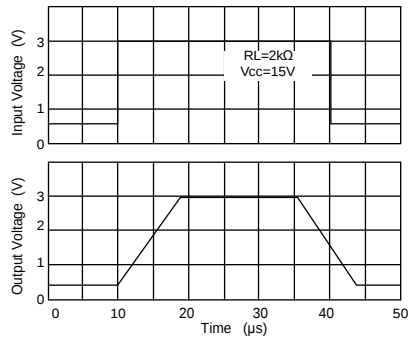


Fig.8 voltage Follower pulse response (small signal)

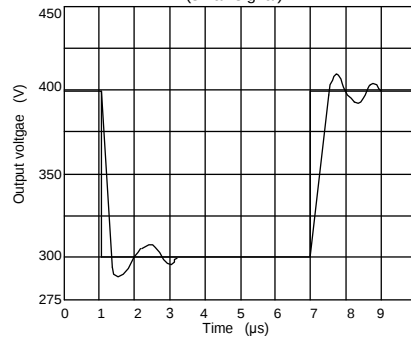


Fig.9 Large signal Frequency Response

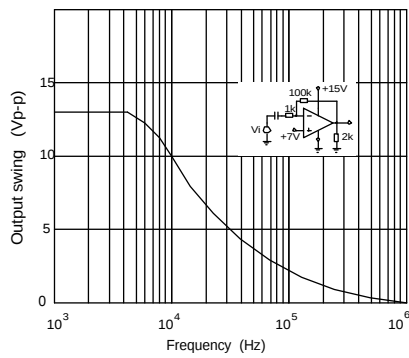


Fig.10 Output Characteristics current sourcing

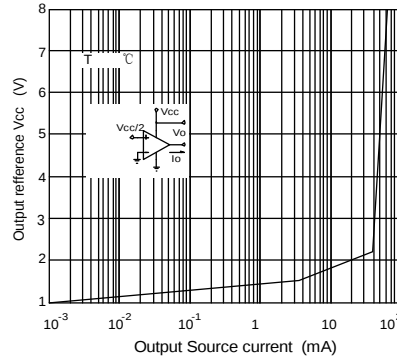


Fig.11 Output Characteristics Current sinking

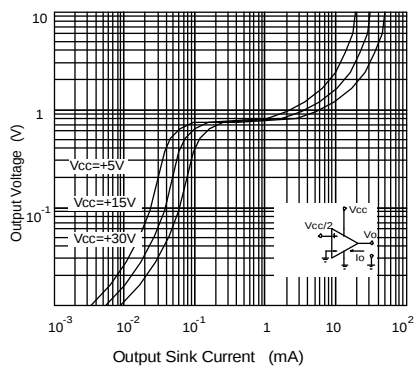
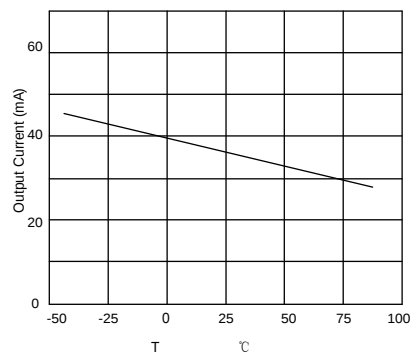
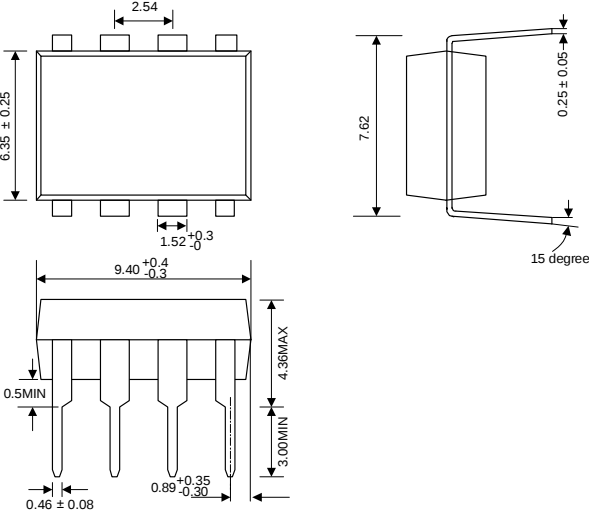
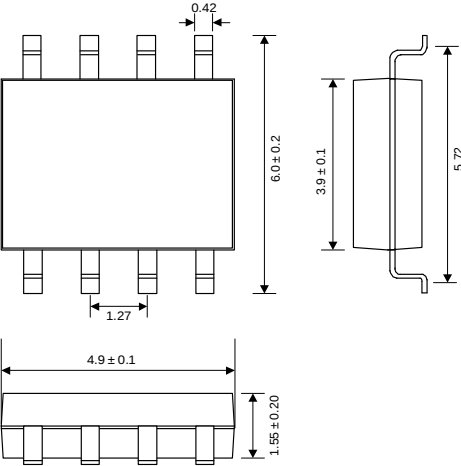


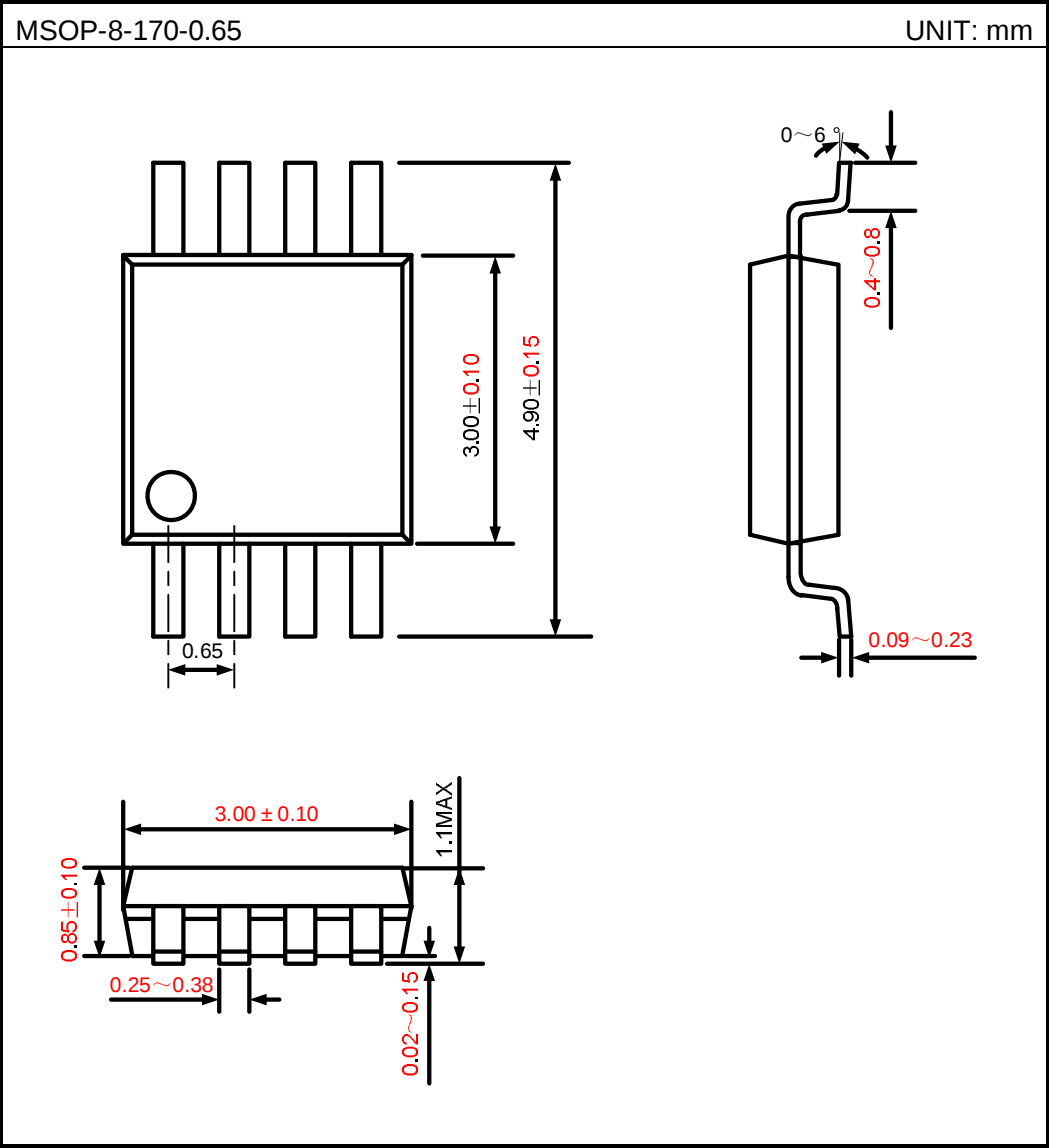
Fig.12 Current Limiting



PACKAGE OUTLINE

DIP-8-300-2.54	UNIT: mm
 Technical drawing of the DIP-8-300-2.54 package. The drawing includes three views: a top view, a side view, and a pin detail view. The top view shows a rectangular package with dimensions 6.35 ± 0.25 mm in height and 9.40^{+0.4}/_{-0.3} mm in width. The pin pitch is 2.54 mm. The pin width is 1.52^{+0.3}/₋₀ mm. The side view shows a package height of 7.62 mm and a pin height of 0.25 ± 0.05 mm. The pin is bent at a 15 degree angle. The pin detail view shows a pin width of 0.46 ± 0.08 mm, a pin height of 0.5 mm, and a pin thickness of 0.89^{+0.35}/_{-0.30} mm. The maximum pin length is 4.36 mm and the minimum pin length is 3.00 mm.	
SOP-8-225-1.27	UNIT: mm
 Technical drawing of the SOP-8-225-1.27 package. The drawing includes three views: a top view, a side view, and a pin detail view. The top view shows a rectangular package with dimensions 6.0 ± 0.2 mm in height and 4.9 ± 0.1 mm in width. The pin pitch is 1.27 mm. The pin width is 0.42 mm. The side view shows a package height of 3.9 ± 0.1 mm and a pin height of 5.72 mm. The pin detail view shows a pin width of 1.55 ± 0.20 mm.	

PACKAGE OUTLINE



Attach

Revision History

Data	REV	Description	Page
	1.0	Original	
2006.03.27	1.1	Add" Ordering Information"	1
2007.02.27	1.2	Add Package Outline "MSOP-8-0.65"	5