

Features

- Supply Range: 2.1V to 5.5V
- Supply Current: 0.4mA
- Input Offset Voltage: 3mV (MAX)
- Gain Bandwidth: 10MHz
- Rail-to-Rail Input and Output
- Slew rate: 8.5V/ μ s
- Operating Temperature: -40°C ~ +85°C
- Type Package: SOT353

Applications

- Temperature Sensors
- Battery-Powered Instruments
- Smoke/Gas/Environment Sensors
- Medical Equipment
- Portable Instruments and Mobile Device
- Active Filters
- Piezo Electrical Transducer Amplifier
- Sensor Interface
- Handheld Test Equipment

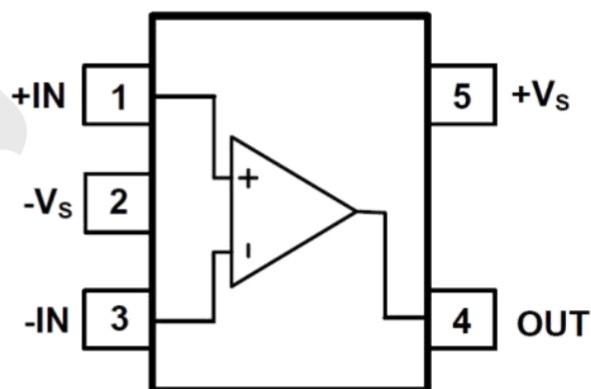
General Description

The families of products offer low voltage operation and rail-to-rail input and output, as well as excellent speed/power consumption ratio, providing an excellent bandwidth(10MHz) and slew rate (8.5V/ μ s). The operational amplifiers are unity gain stable and feature an ultra-low input bias current.

The has lower offset voltage, which is guaranteed not upper than 0.5mV at 25°C with $V_s = 5V$, $V_{CM} = V_s/2$.

The families of operational amplifiers under single supplies of 2.1V to 5.5V or dual power supplies of $\pm 1.05V$ to $\pm 2.75V$. The devices are ideal for sensor interfaces, active filters and portable applications.

Pinout (top view)



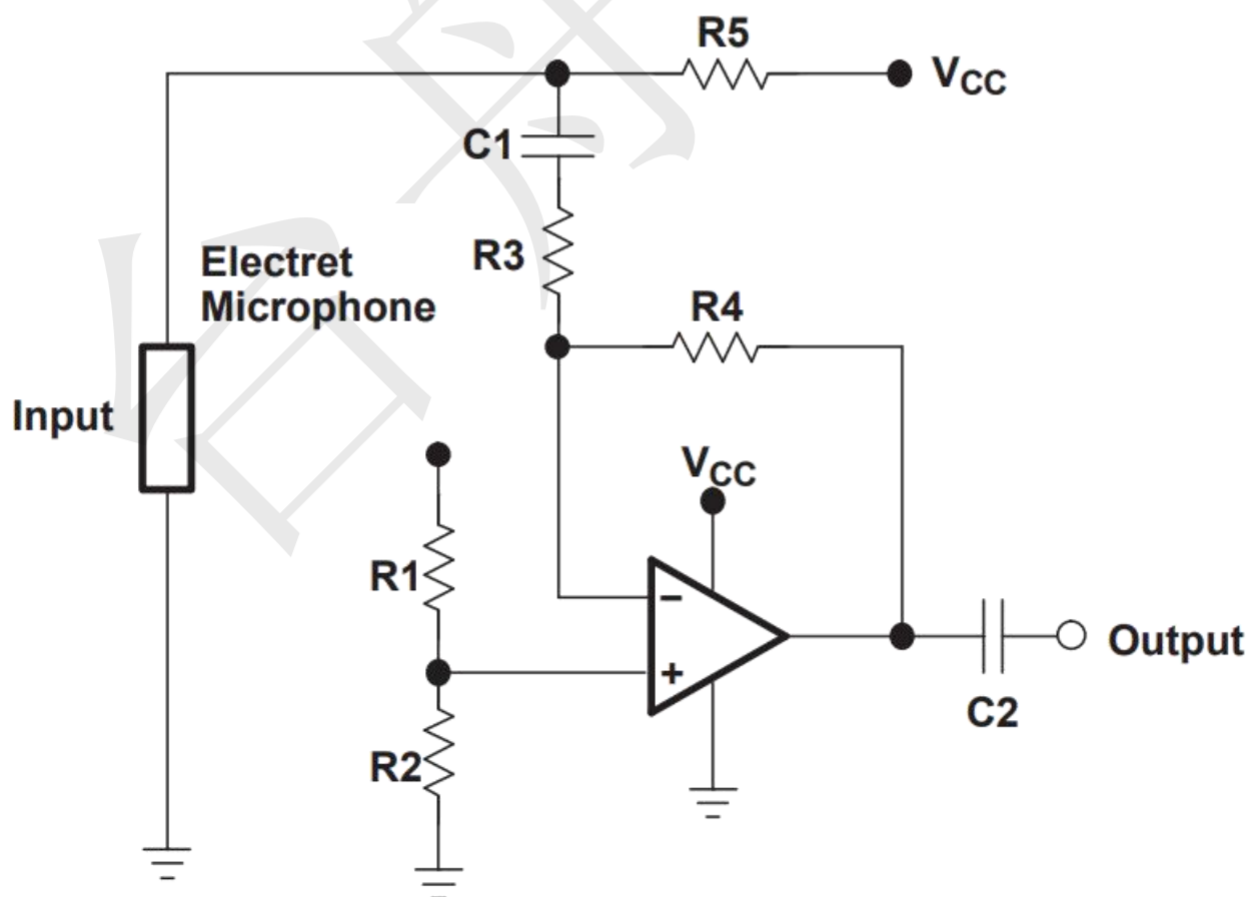
Pin Configurations

Pin Number	Pin Name	Pin Function
1	+IN	In-phase input
2	-Vs	Chip Supply Voltage(Negative)/GND
3	-IN	Reverse input
4	OUT	Output
5	+Vs	Chip Supply Voltage(Positive)/VDD

Absolute Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Condition		Rating	UNIT
VDD to GND	Power Supply Voltage	-0.5V~+7V	V
IN+ or IN-	Signal Input Terminals Voltage	GND-0.5V~VDD+0.5V	V
IIN	Signal Input Terminals Current	-10 ~ +10	mA
IOUT	Signal output Terminals Current	-150 ~ +150	mA
IOUT to GND	Output Short-Circuit	Continuous	mA
LT	Lead Temperature (Soldering, 10 sec.)	260	°C
TA	Operating Temperature Range	-40 125	°C
TJ	Junction Temperature	-40 150	°C
Tstg	Storage Temperature Range	-65 150	°C

Typical Application



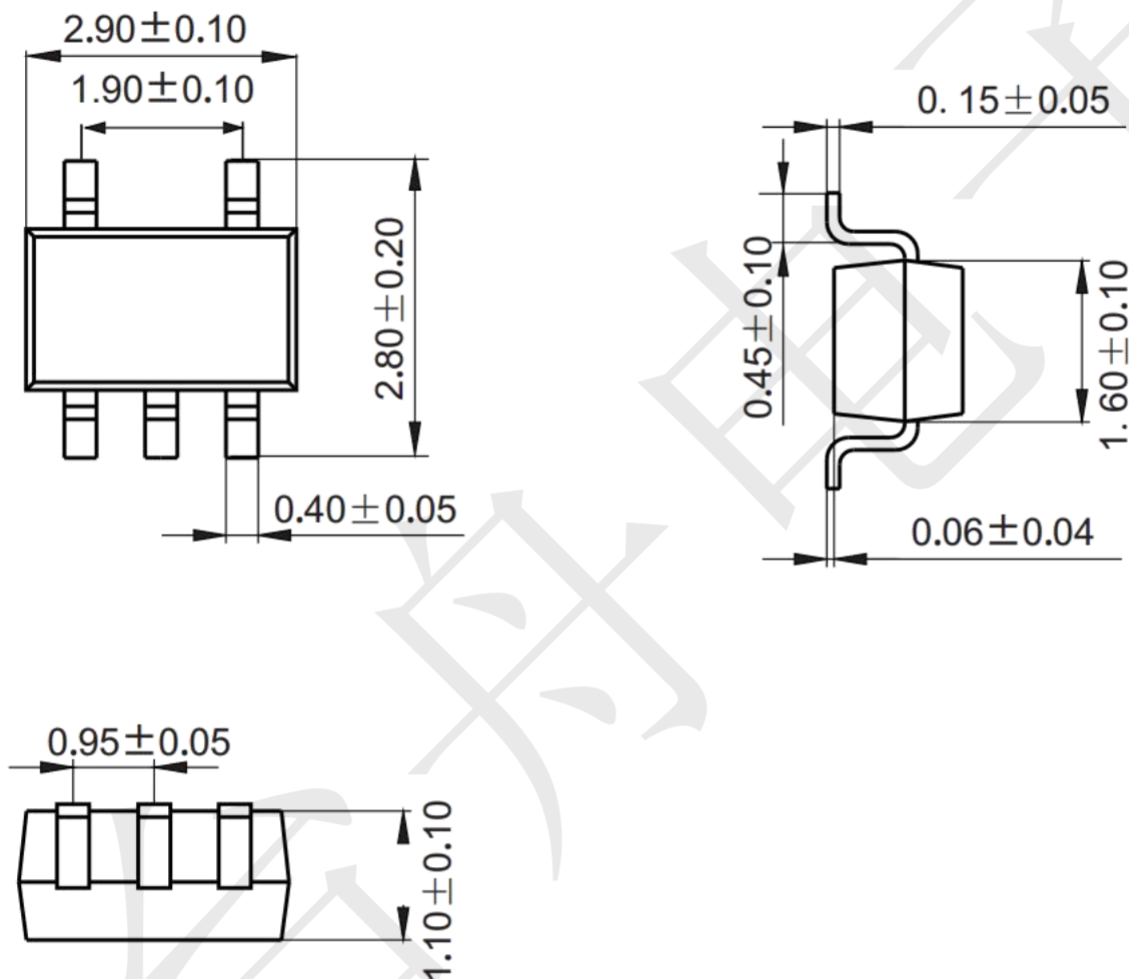
Electrical Characteristics

(At $T_A = +25^\circ\text{C}$, $V_S = 5\text{V}$, $R_L = 10\text{k}\Omega$ connected to $V_S/2$, and $V_{OUT} = V_S/2$, unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
POWER SUPPLY						
Operating Voltage Range	V _S		2.1	--	5.5	V
Quiescent Current/Amplifier	I _Q	V _S =5V, IN+=V-, IN-=OUT	--	0.4	--	mA
Power-Supply Rejection Ratio	PSRR	V _S =2.5V to 5.5V, V _{CM} =(V-)+0.5V	75	--	--	dB
Turn-on Time	t _{ON}		--	12	--	μs
INPUT						
Input Offset Voltage	V _{OS}	V _{CM} = V _S /2,	-3	±0.2	+3	mV
Input Offset Voltage Average Drift	V _{OS} TC	T _A =-40℃~+125℃	--	±2.6	--	uV/℃
Input Bias Current	I _B		-10	±1	+10	pA
Input Offset Current	I _{OS}		-10	±1	+10	pA
Common-Mode Voltage Range	V _{CM}	V _S =5.5V	-0.2	--	5.7	V
Common-Mode Rejection Ratio	CMRR	V _S = 5.5V, V _{CM} =-0.2V to 4V	70	--	--	dB
		V _S = 5.5V, V _{CM} =-0.2V to 5.7V	65	--	--	dB
OUTPUT						
Open-Loop Voltage Gain	A _{OL}	R _L =2KΩ, V _O =0.15V to 4.85V	86	--	--	dB
		R _L =10KΩ, V _O =0.05V to 4.95V	96	--	--	dB
Output Swing From Rail		R _L =2KΩ	--	50	--	mV
		R _L =10KΩ	--	10	--	mV
Output Current Source	I _{OUT}		--	140	--	mA
FREQUENCY RESPONSE						
Slew Rate	SR		--	8.5	--	V/μs
Gain-Bandwidth Product	GBP		--	10	--	MHz
Phase Margin	PM		--	62	--	°
Setting Time,0.1%	ts		--	0.5	--	μs
Overload Recovery Time		V _{IN} ·Gain≥V _S	--	3.2	--	μs
NOISE						
Input Voltage Noise Density	en	f = 1KHz	--	9.5	--	nV/√Hz
		f = 10KHz	--	6.5	--	nV/√Hz

Package informantion (Unit: mm)

SOT353 (Unit: mm)



Mounting Pad Layout (Unit: mm)

