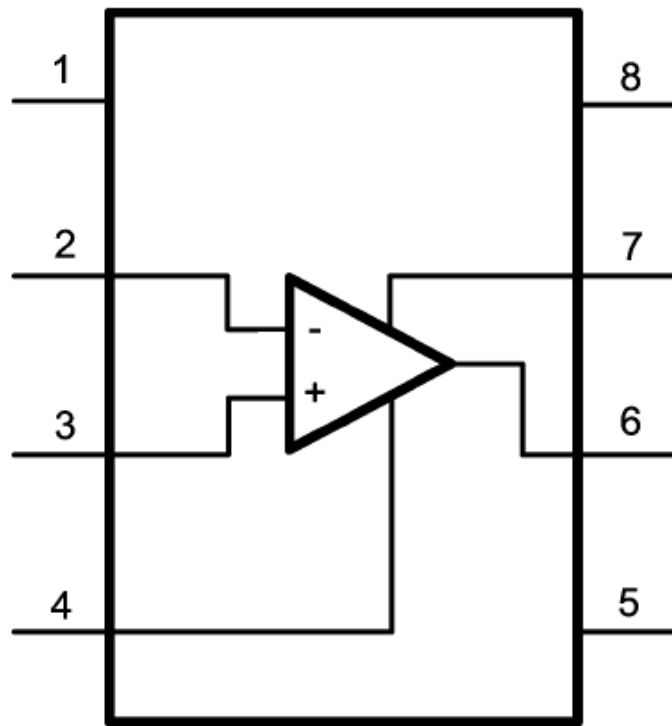


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## Ultra Low noise, Ultra low distortion Operational Amplifier

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A 'Quantum Leap' in sound design technology...



Designed to achieve the highest possible level of audio performance,

Ultra Analog announce THE-1

The term 'High Fidelity' means 'faithful reproduction' i.e. without adding or subtracting anything at all from the musical signal. This implies that in order to achieve a clean, clear transparent sound quality, there has to be zero added distortions of any nature (including THD, IMD, added noise, or slew rate limiting).

With the Ultra Analog THE 1, THD+N and IMD are virtually immeasurable, making it the highest performing Operational Amplifier available today.

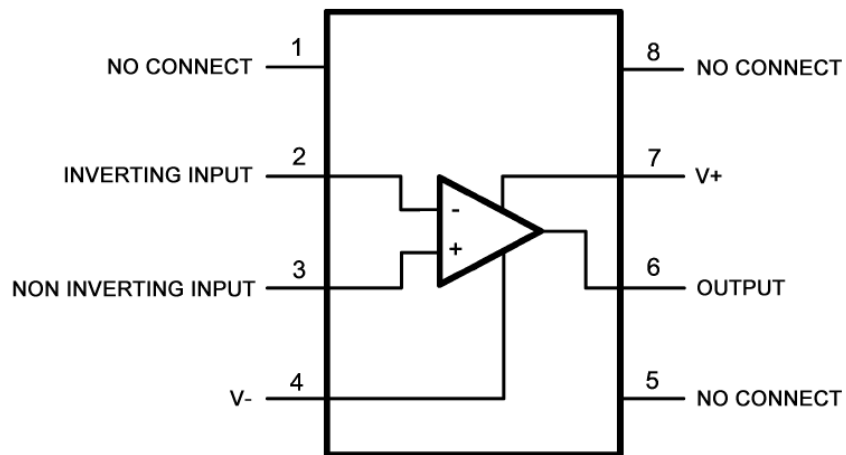
### THE-1 Applications

- Ultra low distortion, Ultra High Quality audio pre-amplifiers
- Ultra low distortion oscillators
- Spectrum analyzers
- ADC and DAC buffers
- Precision Instrumentation

### THE-1 Features

- Virtually zero distortion (0.00001%)
- High slew rate
- Easily drives 600 Ω
- Ultra Low noise ( $< 0.8nV/\sqrt{Hz}$ )
- Unity gain stable

### Connection diagram



**ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	THE 1 (guaranteed)	Units
Operating Supply Voltage	$V_{CC}$	$\pm 5$	$V_{(Min)}$
		$\pm 18$	$V_{(Max)}$
Power Supply Rejection Ratio	PSRR	145	dB
Common Mode Rejection	CMRR	138	dB
Gain Bandwidth Product	GBWP	120	MHz
Open Loop Gain	$A_{VOL}$	135	dB
Total Harmonic Distortion + Noise	THD+N	0.00001	%
Intermodulation Distortion	IMD	0.00001	%
Input Noise Voltage Density	$e_N$	<0.8	$nV/\sqrt{Hz}$
Slew Rate	SR	25	$V/\mu S$
Settling Time	$T_s$	550	nS

**MAXIMUM RATINGS**

Power supply voltage (-V to +V)	38V
Storage temperature	-65 To 150°C
Infrared or convection (20 seconds)	260°C

**OPERATING RATINGS**

Temperature range	-40 To 85°C
Supply voltage range	$\pm 5V$ to $\pm 18V$

**DEVICE INFORMATION**

Device	Package Type	Package Drawing	Pins	Length	Width	Height
THE-1	SOIC	A	8	5mm	4mm	1.75mm



These devices have limited ESD protection. The device should be placed in conductive foam during storage or handling to prevent electrostatic damage.