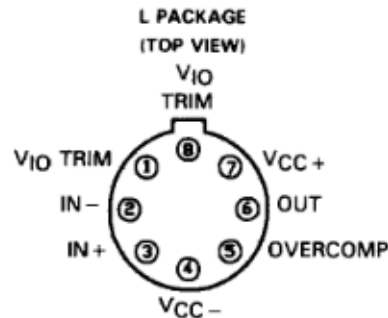
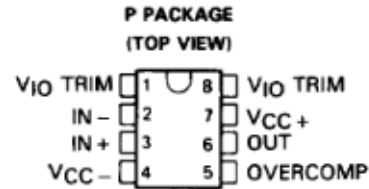


LT1012M, LT1012C HIGH-PERFORMANCE, LOW-NOISE OPERATIONAL AMPLIFIERS

D3186, MARCH 1989

- Internally Compensated
- Input Offset Voltage:
LT1012M ... 35 μV Max
LT1012C ... 50 μV Max
- Input Bias Current (LT1012M):
100 pA Max at 25°C
600 pA Max from -55°C to 125°C
- αV_{IO} ... 1.5 $\mu\text{V}/^\circ\text{C}$ Max
- Typical Peak-To-Peak Noise Voltage ...
0.5 μV at $f = 0.1$ Hz to 10 Hz
- Low Supply Current ... 600 μA Max
- CMRR ... 114 dB Min (LT1012M)
- kSVR ... 114 dB Min (LT1012M)
- 5-mA Load Current with Voltage Gain of
200,000 Min (LT1012M)



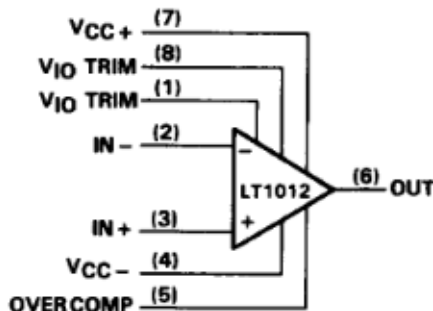
Pin 4 (L package) is in electrical contact with the case.

description

The LT1012 is an internally compensated operational amplifier that can be used in practically all precision applications. The LT1012 combines picoampere bias currents (maintained over the full temperature range), microvolt offset voltage, low offset voltage temperature coefficient and long-term drift, low voltage and current noise, and low power dissipation. High common-mode and supply voltage rejection ratios, low warm-up drift, and the capability to deliver 5-mA load current with a voltage gain of 200,000 complete the LT1012's precision specifications.

The LT1012M is characterized for operation over the full military temperature range of -55°C to 125°C. The LT1012C is characterized for operation from 0°C to 70°C.

symbol



AVAILABLE OPTIONS

| T _A | V _{IO} MAX at 25°C | PACKAGE | |
|----------------------|--------------------------------|------------------|--------------------|
| | | METAL CAN (L) | PLASTIC DIP (P) |
| 0°C to 70°C | 50 μV | LT1012CL | LT1012CP |
| -55°C to 125°C | 35 μV | LT1012ML | - |

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

**TEXAS
INSTRUMENTS**

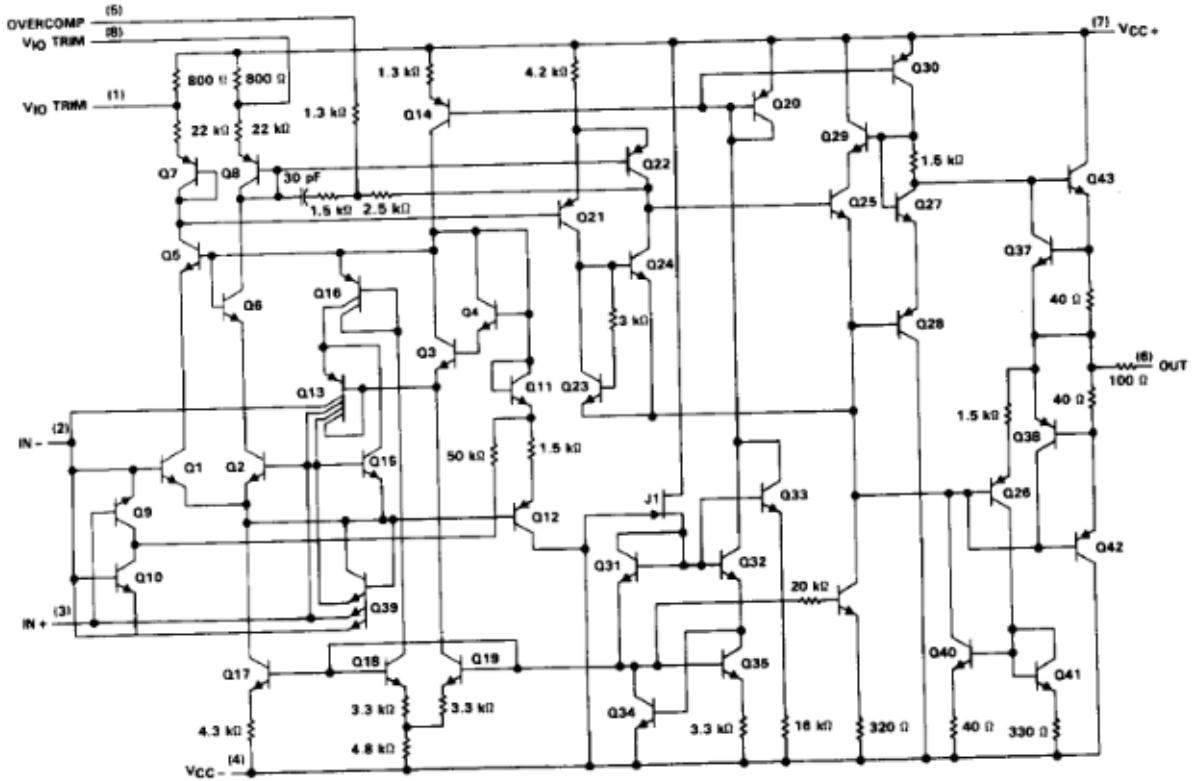
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2-123

LT1012M, LT1012C HIGH-PERFORMANCE, LOW-NOISE OPERATIONAL AMPLIFIERS

schematic



All resistor values shown are nominal

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

| | | |
|---|-------|----------------|
| Supply voltage, VCC+ (see Note 1) | ..... | +20 V |
| Supply voltage, VCC- (see Note 1) | ..... | -20 V |
| Input voltage | ..... | VCC± |
| Differential input current (see Note 2) | ..... | ±10 mA |
| Duration of output short-circuit at or below 25°C | ..... | unlimited |
| Operating free-air temperature range: LT1012M | ..... | -55°C to 125°C |
| LT1012C | ..... | 0°C to 70°C |
| Storage temperature range | ..... | -65°C to 150°C |
| Lead temperature 1,6 mm (1/16 inch) from case for 60 seconds: L package | ..... | 300°C |
| Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds: P package | ..... | 260°C |

- NOTES: 1. All voltage values, unless otherwise noted, are with respect to the midpoint between VCC+ and VCC-.
2. Differential input voltages greater than 1 V cause excessive current to flow through the input protection diodes unless limiting resistance is used.

2

Operational Amplifiers