

LM611 Adjustable Micropower Floating Voltage Reference and Single-Supply Operational Amplifier

General Description

The voltage reference is a three-terminal shunt-type band-gap similar to the adjustable LM185 series, but with improved voltage accuracy. To $\pm 0.4\%$ accuracy by wafer trim. Two resistors program the reference from 1.24V to 6.3V. Operation over a shunt current range of $16 \mu\text{A}$ to 20 mA, low dynamic impedance, broad capacitive load range, and cathode terminal voltage ranging from a diode-drop below V^- to above V^+ result in easy application.

The operational amplifier is a versatile common-mode-to-the-negative-supply ("single-supply") type similar to the LM124 series, but with improved slew rate, improved power bandwidth, reduced cross-over distortion, and low supply current even while driven beyond swing limits. Lateral PNP input transistors enable low input currents for large differential input voltages and swings above V^+ .

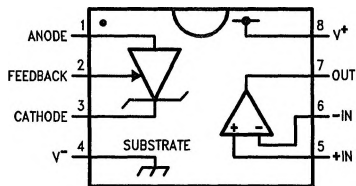
Features (Guaranteed over temperature and supply)

- Low operating current 300 μA (per op amp)
- 16 μA (ref)
- Large supply voltage range 3V to 36V
- Large output swing (10k load) ($V^- + 1V$) to ($V^+ - 1.8V$)
- Input common-mode range includes V^- to ($V^+ - 1.4V$)
- Op amps match LM124 pin-out
- Wide input differential voltage $\pm 36V$
- Reference voltage adjustable 1.2V to 6.3V
- Reference initial tolerance $\pm 0.4\%$
- Reference temp. coefficient $\pm 20 \text{ ppm}/^\circ\text{C}$
- Reference load capacitance 0 to ∞
- Cost effective

Applications

- Power supplies
- Signal conditioning

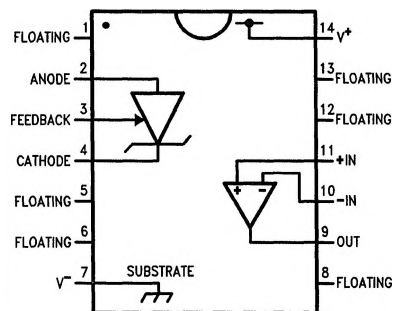
Connection Diagrams



TL/H/9221-1

Top View

See NS Package Number J08A or N08E



TL/H/9221-2

Top View

See NS Package Number M14A
M Narrow (0.15")

Order Number

Prime Military LM611MJ

($-55^\circ\text{C} \leq T_A \leq +125^\circ\text{C}$)

tested at -55°C , $+25^\circ\text{C}$, $+125^\circ\text{C}$

drift tested at -55°C , $+25^\circ\text{C}$, $+125^\circ\text{C}$

Prime Industrial LM611AIN

($-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$)

tested at $+25^\circ\text{C}$

drift tested at -40°C , $+25^\circ\text{C}$, $+85^\circ\text{C}$

Industrial LM611IN

($-40^\circ\text{C} \leq T_A \leq +85^\circ\text{C}$)

tested at $+25^\circ\text{C}$ LM611IM

Commercial LM611IN

($0 \leq T_A \leq +70^\circ\text{C}$) LM611CN

tested at $+25^\circ\text{C}$ LM611CM