National Semiconductor Corporation

ADVANCED INFORMATION

LM614 Adjustable Micropower Floating Voltage Reference and Four Single-Supply Operational Amplifiers

General Description

The voltage reference is a three-terminal shunt-type design similar to the adjustable LM185 series, but with improved voltage tolerance and temperature coefficient. It is adjustable from 1.23 to 6.3V and operates over a wide shunt current range of 12 μA to 20 mA. Trimming provides accuracy to ±⅓%. The low dynamic impedance and wide capacitive load range result in easy application.

The four operational amplifiers are versatile single-supply types similar to the LM124 series, but with improved slew rate (0.8V/μs typ.) and power bandwidth, reduced crossover distortion, and low current consumption even while driven beyond swing limits.

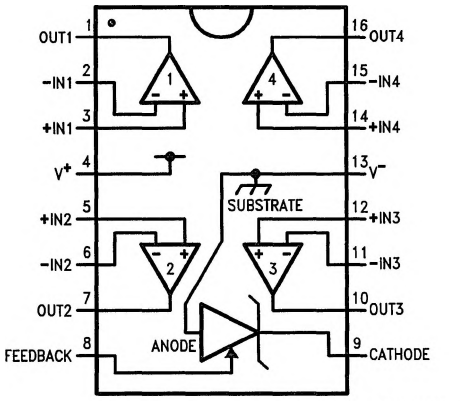
Features

- Low operating current — 185 μA (per op amp); 12 μA (reference)
- Wide supply voltage range — 3V to 36V
- Large output swing — $(V^- + 0.9V)$ to $(V^+ - 1.7V)$
- Input common-mode range includes — V^-
- Reference voltage adjustable — 1.2V to 6.3V
- Reference initial tolerance — ±0.33%
- Reference temp coefficient — ±20 PPM/C
- Reference tolerant of capacitive loads

Applications

- Instrumentation
- Switching power supplies
- Battery operated devices

Connection Diagram



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Top View
M Narrow (0.15"), N, or J
Order Number LM614M, LM614N or LM614J
See NS Package J16A, M16A or N16A

Order Number

Prime Military	LM614MJ
$(-55°C \leq T_A \leq +125°C)$	
tested at −55°C, +25°C, +125°C	
drift tested at −55°C, +25°C, +125°C	
Prime Industrial	LM614AIJ
$(-40°C \leq T_A \leq +85°C)$	
tested at +25°C	
drift tested at −40°C, +25°C, +85°C	
Industrial	LM614IN
$(-40°C \leq T_A \leq +85°C)$	LM614IJ
tested at +25°C	LM614IM
Commercial	LM614CN
$(0°C \leq T_A \leq +70°C)$	LM614CM
tested at +25°C	