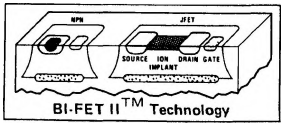
National Semiconductor Corporation

ADVANCED INFORMATION



LF455/LF456/LF457 Series Monolithic JFET Input Operational Amplifiers

General Description

The LF455/LF456/LF457 family of high-performance Bi-FET™ operational amplifiers features extremely low offset voltage, high gain, low noise, wide bandwidth, and high slew rate. External offset adjustments will not degrade common-mode rejection or offset drift. A non-current-limited output is provided, and may be used alone or with the normal output to increase the current limit to more than 100 mA. Either output is capable of driving large capacitive loads of up to 10,000 pF.

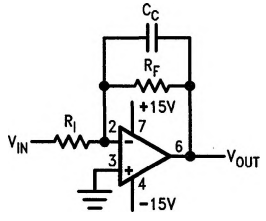
Applications

- DAC output amplifiers
- Precision Buffers
- Fast Integrators
- Precision, high speed instrumentation
- Precision sample and holds

Features

■ Low input offset voltage		250 μV
■ Low offset voltage drift		3 μV/°C
■ Low input bias current		50 pA
■ Low input offset current		10 pA
■ High common-mode rejection ratio		100 dB
■ High DC voltage gain		106 dB
■ High slew rate:	LF455	5V/μs
	LF456	12V/μs
	LF457	50V/μs
■ Wide bandwidth:	LF455	3 MHz
	LF456	5 MHz
	LF457	20 MHz
■ Low input noise voltage:		
LF455		12nV/√Hz @ 1kHz
LF456, LF457		10nV/√Hz @ 1kHz
■ Large capacitive load capability		10,000 pF
■ Fast settling to 0.01%		1.5 μs

Typical Connection



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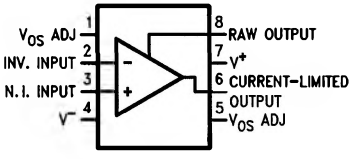
$\frac{R_f}{R_i}$ must be greater than 4 for the LF457.

LF455 and LF456 are unity gain stable.

Connection Diagram

Dual-In-Line Package (N)



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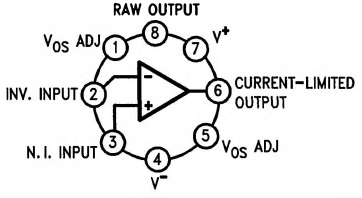
Metal Can Package (H)



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Order Number LF455/LF456/LF457
See NS Package H08A or N08E

Simplified Schematic