



November 1996

**NOT RECOMMENDED FOR NEW DESIGNS**  
A complete data sheet is available in 2000  
Harris' home page: <http://www.harris.com>  
Go to Harris AnswerFAX: see Section 12

### Features

- **Low Offset Voltage** ..... 20 $\mu$ V
- **Low Offset Voltage Drift** ..... 0.2 $\mu$ V/ $^{\circ}$ C
- **High Voltage Gain** ..... 150dB
- **High CMRR** ..... 140dB
- **High PSRR** ..... 135dB
- **Low Noise** ..... 9.0nV/ $\sqrt$ Hz
- **Low Power Consumption** ..... 51mW (Max)

### Applications

- High Gain Instrumentation Amplifiers
- Precision Control Systems
- Precision Integrators
- High Resolution Data Converters
- Precision Threshold Detectors
- Low Level Transducer Amplifiers

### Ordering Information

PART NUMBER	TEMP. RANGE ( $^{\circ}$ C)	PACKAGE	PKG. NO.
HA3-5177-5	0 to 75	8 Ld PDIP	E8.3
HA7-5177-5	0 to 75	8 Ld CERDIP	F8.3A

### Description

The HA-5177 is an all bipolar, precision operational amplifier, utilizing Harris dielectric isolation and advance processing techniques. This design features a combination of precision input characteristics, wide bandwidth (2MHz) and high speed (0.8V/ $\mu$ s).

The HA-5177 uses advanced matching techniques and laser trimming to produce low offset voltage (20 $\mu$ V) and low offset voltage drift (0.2 $\mu$ V/ $^{\circ}$ C). This design also features low voltage noise (9.0nV/ $\sqrt$ Hz), low current noise (1.2pA/ $\sqrt$ Hz), nanoamp input currents, and 120dB minimum gain.

These outstanding features along with high CMRR (140dB) and high PSRR (135dB) make this unity gain stable amplifier ideal for high resolution data acquisition systems, precision integrators, and low level transducer amplifiers.

The HA-5177 can be used as a direct replacement for the OP05, OP07, and OP77 while offering higher bandwidth and slew rate. See the HA-5177/883 data sheet for military grade parts and LCC package. Harris AnswerFAX (407-724-7800) Document #3733.

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OPERATIONAL AMPLIFIERS

### Pinout

HA-5177  
(PDIP, CERDIP)  
TOP VIEW

