

intech

ADVANCED ANALOG

A-880

HIGH SPEED TRACK/HOLD AMPLIFIER

DESCRIPTION

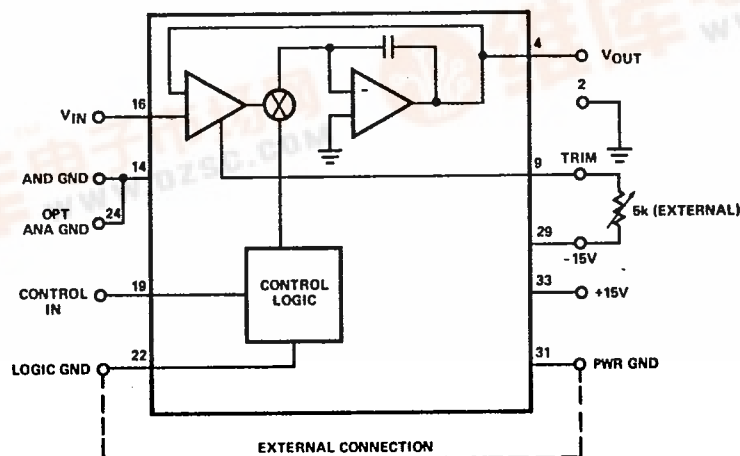
These modules are precision sample and hold amplifiers designed for use with high speed, high accuracy analog-to-digital converters. In the "sample" mode their output tracks the input signal as in a unity gain amplifier. When switched into the "hold" mode the instantaneous input value is captured and held at the output, providing a stable input signal for an A/D converter. This value is held, with a droop rate of less than one volt per microsecond, until another "sample" command is initiated.

The A-880 features a fast acquisition time of 1.4 microseconds (to $\pm 0.01\%$) for use with high speed 12-bit A/D converters. The A-880-2 has an accuracy rating of $\pm 0.0007\%$ with an acquisition time of only two microseconds, making it an ideal unit for 16-bit converter applications.

FEATURES

- 500 kHz min. Gain Bandwidth
- 5 ns max. Aperture Time
- Less than $1\mu\text{V}/\mu\text{s}$ Droop
- 16-bit Accuracy (A-880-2)

BLOCK DIAGRAM



SPECIFICATIONS (@ 25°C and ±15V supplies)

Parameters			UNIT
SAMPLE MODE			
Input Voltage	max	±10	V
Gain - +1.000		±0.005	%
Small Signal			
Bandwidth	typ	10	MHz
Full Power			
Bandwidth	min	500	kHz
Slew Rate	min	40	V/μs
Input Impedance	min	10 ⁹	Ω
Nonlinearity - A-880	max	0.005	%
A-880-2	max	0.0007	%
Settling time, 20 V			
step, A-880 (±0.01%)	max	1.4	μs
A-880-2 (±0.0007%)	max	2.0	μs
Input bias current	max	100	pA
Input offset			
voltage (ATZ)	max	20	mV
Offset drift (0°C to 70°C)	max	50	μV/°C
Offset vs. Supply	max	0.5	mV/V
Noise	max	300	μVp-p
SAMPLE-TO-HOLD			
Switching Time	max	100	ns
Aperture Time	max	5	ns
Aperture Uncertainty	max	0.2	ns
HOLD MODE			
Output Voltage	max	±10	V
Load	max	500Ω/200pF	
Output Impedance	max	0.1	Ω
Droop Rate	max	1	mV/ms
	max	1	μV/μs
Dielectric Absorption	max	0.003	%/5μs
Voltage Feedthrough		-80	dB
Hold Offset (Pedestal)	max	±0.5	mV
Offset vs Temp. (0°C to 70°C)	max	30	μV/°C
Noise	max	0.4	mVp-p
HOLD-TO-SAMPLE			
Acquisition Time to 0.01%	max	1.4	μs
CONTROL INPUT			
Type		TTL	
Input Impedance	min	10kΩ/10pF	
Sample (Logic "0") range		0 to 0.4	V
Hold (Logic "1") range		2.5 to 5.0	V
Rise Time for min aperture	max	10	ns
POWER SUPPLY			
Voltage (±3%)		±15	V
Current, Quiescent	max	±60	mA
TEMPERATURE RANGE			
Operating		0 to +70	°C
Derated		-25 to +85	°C
Storage		-55 to +125	°C

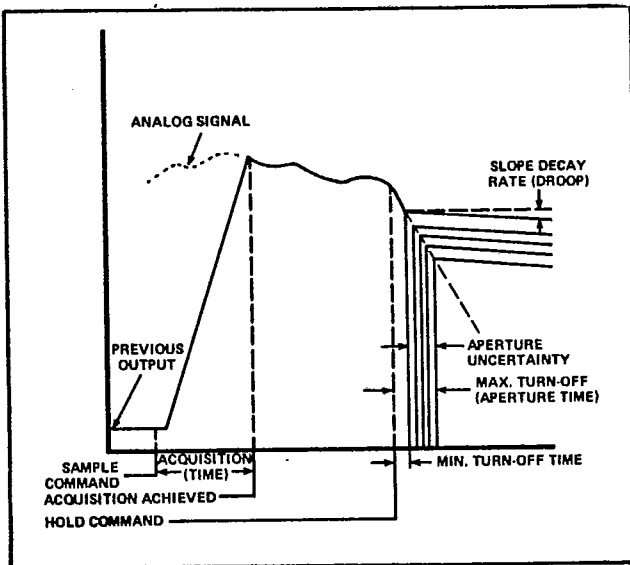
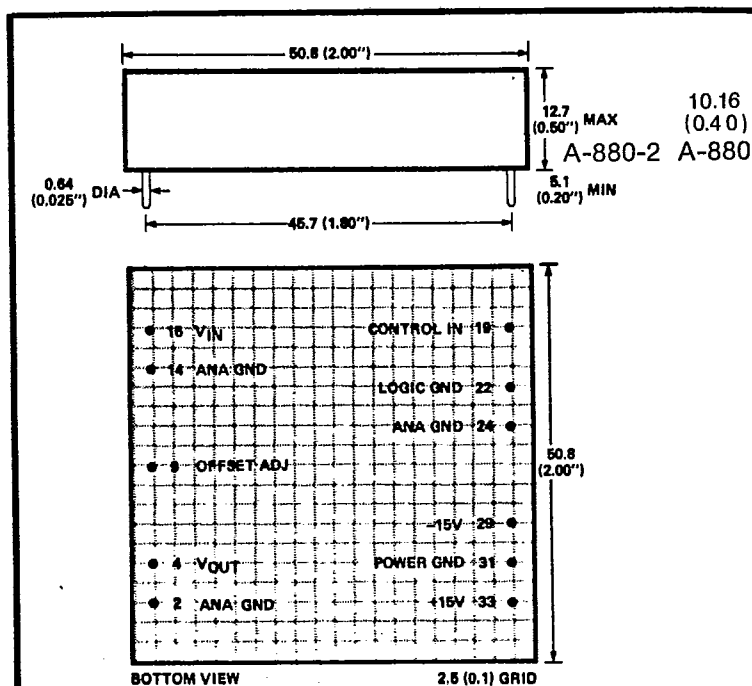


Figure 1 Sample/Hold Parameters

MECHANICAL OUTLINE



Dimensions in millimeters and (inches)

- Case: Red epoxy
- Pins: Gold flashed over silver plated,
1/2 hard brass
- Weight: 2.0 oz.