ULKASEMI PVT. LIMITED

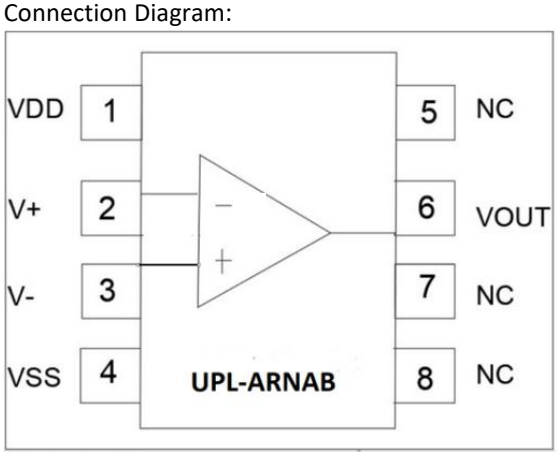
Precision, Low Cost, High Speed, CMOS Op Amp

UPL-SWOJAN711

FEATURES
AC PERFORMANCE
Settles to 79.13us
Min Slew Rate 11.4567V/us
145.024KHz Unity Gain Bandwidth

DC PERFORMANCE
12.16uV max offset voltage
29uV/C Max Drift
70 V/mV min Open loop gain
2 uV p-p max noise

Connection Diagram:



PRODUCT DESCRIPTION

The UPL-SWOJAN711 is a high speed, precision monolithic operational amplifier offering high performance at very modest prices. Its very low offset voltage and offset voltage drift are the results of advanced laser wafer trimming technology. These performance benefits allow the user to easily upgrade existing designs that use older precision BiFETs and, in many cases, bipolar op amps. The superior ac and dc performance of this op amp makes it suitable for active filter applications. With a slew rate of 11.4567 V/ms and a settling time of 79 ms to ±0.01%, the UPL-SWOJAN711 is ideal as a buffer for 12-bit D/A and A/D Converters and as a high-speed integrator. The settling time is unmatched by any similar IC amplifier. The combination of excellent noise performance and low input current also make the UPL-SWOJAN711 useful for photo diode preamps. Common-mode rejection of 41 dB and open loop gain of 100 V/mV ensure 12-bit performance even in high-speed unity gain buffer circuits.

The UPL-SWOJAN711 is rated over the military temperature range of –40 C to +125 C and are available processed to MILSTD-883B, REV. E.

PRODUCT HIGHLIGHTS

1. The UPL-SWOJAN711 offers excellent overall performance at very competitive prices.
2. Analog Devices' advanced processing technology and 100% testing guarantee a low input offset voltage . Input offset voltage is specified in the warmed-up condition. Analog Devices' laser wafer drift trimming process reduces input offset voltage drifts to 29 mV/∞C max on the UPL-SWOJAN711.
3. Along with precision dc performance, the UPL-SWOJAN711 offers excellent dynamic response. It settles to ±0.01% in 79 ms and has a 100% tested minimum slew rate of 11 V/ms. Thus this device is ideal for applications such as DAC and ADC buffers which require a combination of superior ac and dc performance.
4. The UPL-SWOJAN711 has a guaranteed and tested maximum voltage noise of 2 mV p-p, 0.1 to 10 Hz.
5. Analog Devices' well-matched, ion-implanted JFETs ensure a guaranteed input bias current (at either input) of 1.2 fA max (UPL-SWOJAN711) and an input offset current of 2.4 fA max (UPL-SWOJAN711). Both input bias current and input offset current are guaranteed in the warmed-up condition.

UPL-SWOJAN711-SPECIFICATION (T_A = 25 deg C unless other wise noted)

Parameter	Min	Typical	Max	Unit
INPUT OFFSET VOLTAGE1				
Initial Offset		12.16		uV
TMIN to TMAX	539.866		789.541	uV
Vcm = 167mV		1.4		mV
TMIN to TMAx	1.51		5.84	mV
Vcm = -240mV		61.64		mV
TMIN to TMAx	384.6		155.2	mV
vs Temp		29		∝V/C
Vs Supply		61		dB
TMIN to TMAX	40		76	dB
INPUT BIAS CURRENT				
Vcm = 0		0.05		fA
TMIN to TMAx	0.05		0.05	fA
Vcm = 167mV		1.2		fA
TMIN to TMAx	1.05		1.5	fA
Vcm = -240mV		0.1		fA
TMIN to TMAx	0.05		0.2	fA
INPUT OFFSET CURRENT				
Vcm = 0		0.1		fA
TMIN to TMAx	0.1		0.1	fA
Vcm = 167mV		2.4		fA
TMIN to TMAx	2.1		3	fA
Vcm = -240mV		0.2		fA
TMIN to TMAx	0.1		0.4	fA
FREQUENCY RESPONSE				
Small signal Bandwidth	158.022	145.024	110.92	kHz
Full Power Response	78.925	55.378	35.828	kHz
Slew Rate		11.4567		V/∝s
Settling Time to 0.01%	65.16	79.1308	119.294	∝s
INPUT IMPEDANCE				
Differential3	9.2284	7.2236	5.3823	Gohm
Common Mode	9.2284	7.2236	5.3823	Gohm
INPUT VOLTAGE RANGE				
Differential		+-0.6		V
Common-Mode Voltage		+167, -240		mV
Common-Mode Rejection Ratio				
VCM = 0 V		40.015		dB
TMIN to TMAX				
VCM = 167m V		26.2522		dB
TMIN to TMAX	35		12.0355	dB
Vcm = -240mV		42.6544		dB
TMIN to TMAx			42.9877	dB
INPUT VOLTAGE NOISE		2		V p-p
		402.9		nV/sqrt(Hz)
INPUT CURRENT NOISE		0.0436		pA
OPEN-LOOP GAIN		100		V/mV
OUTPUT CHARACTERISTICS				
Voltage		+170, -186.71		mV
POWER SUPPLY				
Rated Performance		+- 0.6		V
Operating Range	-240		167	mV
Quiescent Current	37.0637	37.1307		uA

ABSOLUTE MAXIMUM RATINGS

Supply voltage . . . . . ± 0.6 V
Internal Power Dissipation2 . . . . . 44.5488 uW
Differential Input Voltage . . . . . +0.6 and –0.6

CAUTION _____

ESD (electrostatic discharge) sensitive device. Electrostatic charges as high as 4000 V readily accumulate on the human body and test equipment and can discharge without detection. Although the AD711 features proprietary ESD protection circuitry, permanent damage may occur on devices subjected to high-energy electrostatic discharges. Therefore, proper ESD precautions are recommended to avoid performance degradation or loss of functionality.

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