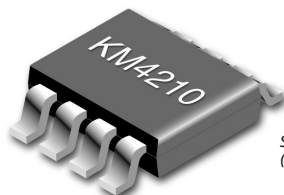


KM4210

Dual, 0.5mA, Low Cost, +2.7V and +5V, 75MHz Rail-to-Rail Amplifier

Product Brief



SOIC shown
(not actual size)

Preliminary

Outperforms the competition in single-supply applications at a

lower cost!

Features

- 505μA supply current per amplifier
- 75MHz bandwidth
- Fully specified at +2.7V and +5V supplies
- Output voltage range: 0.07V to 4.86V; $V_s = +5$
- Input voltage range: -0.3V to +3.8V; $V_s = +5$
- 50V/μs slew rate
- ±15mA linear output current
- ±30mA output short circuit current
- 12nV/√Hz input voltage noise
- Directly replaces AD8032
- Package option (MSOP-8)

Applications

- Portable/battery-powered applications
- A/D buffer
- Active filters
- Signal conditioning
- Portable test instruments

General Description

The KM4210 is a dual, low power, low cost, voltage feedback amplifier. The KM4210 uses only 505μA of supply current per amplifier, and is designed to operate on +2.7V, +5V, or ±2.5V supplies. The input voltage range extends 300mV below the negative rail and 1.2V below the positive rail.

The KM4210 offers high bipolar performance at a low CMOS price. The KM4210 offers superior dynamic performance with a 75MHz small signal bandwidth and 50V/μs slew rate. The combination of low power, high bandwidth, and rail-to-rail performance make the KM4210 well suited for battery-powered communication/computing systems.

The KM4110 (single) and KM4120 (single with disable) are also available.

Advertised Specifications	KM4210	Competitor A	Units
G = 1 BW	75	80	MHz
Noise	12	15	nV/√Hz
Slew rate	50	30	V/μs
Supply current/amp	0.5	0.8	μA

Typical Performance Plot

TBD

Ordering Information

Part No.	Package	Container	Pack Qty	Eval Bd*
KM4210IM8	MSOP-8	Rail	50	KEB010
KM4210IM8TR3	MSOP-8	Reel	4000	KEB010

Temperature range for all parts: -40°C to +85°C.

* Evaluation boards are available to aid in the evaluation of these products. See the full data sheet or website for complete information.

KM4210

Typical Specifications

Preliminary

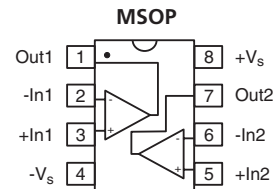
Electrical Characteristics

($G = +2$, $R_f = 1k\Omega$, $R_L = 1k\Omega$ to $V_S/2$, $T_a = +25^\circ\text{C}$, unless noted)

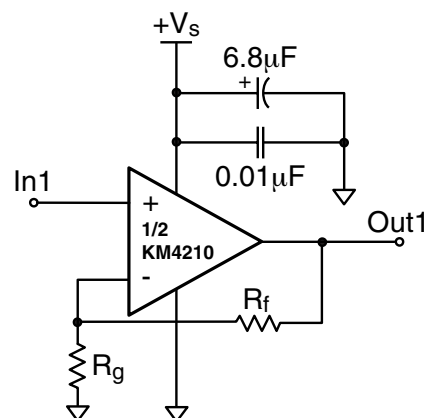
PARAMETERS	CONDITIONS	TYP V _s = +2.7V	TYP V _s = +5V	UNITS
Frequency Domain Response				
-3dB bandwidth	G = +1, V _o = 0.05V _{pp}	x	75	MHz
	G = +2, V _o < 0.2V _{pp}	x	35	MHz
full power bandwidth	G = +2, V _o = 2V _{pp}	x	x	MHz
gain bandwidth product		x	x	MHz
Time Domain Response				
rise and fall time	0.2V step	y	y	ns
settling time to 0.1%	2V step	x	x	ns
overshoot	0.2V step	y	y	%
slew rate	5V step	x	50	V/μs
Distortion and Noise Response				
2nd harmonic distortion	2V _{pp} , 1MHz	y	y	dBc
3rd harmonic distortion	2V _{pp} , 1MHz	y	y	dBc
THD	2V _{pp} , 1MHz	x	x	dB
input voltage noise	>1MHz	x	12	nV/Hz
input current noise	>1MHz	x	x	pA/Hz
DC Performance				
input offset voltage		x	-1	mV
average drift		x	10	μV/°C
input bias current		x	1.2	μA
average drift		y	3.5	nA/°C
input offset current		x	30	nA
power supply rejection ratio	DC	x	65	dB
open loop gain		x	80	dB
quiescent current per amplifier		x	505	μA
Input Characteristics				
input resistance		x	x	MΩ
input capacitance		x	x	pF
input common mode voltage range		x	-0.3 to 3.8	V
common mode rejection ratio	DC	x	92	dB
Output Characteristics				
output voltage swing	R _L = 10kΩ to V _s /2	x	x	V
	R _L = 1kΩ to V _s /2	x	0.07 to 4.86	V
linear output current		x	±15	mA
short circuit output current		x	±30	mA
power supply operating range		2.5 to 5.5		V

*x and y = TBD

Available Packages



Typical Circuit Configuration



Absolute Maximum Ratings

supply voltage	0 to +6V
maximum junction temperature	+175°C
storage temperature range	-65°C to +150°C
lead temperature (10 sec)	+300°C
operating temperature range	-40° to +85°C
input voltage range	+ $V_S + 0.5V$, - $V_S - 0.5V$
internal power dissipation	see power derating curves in the full data sheet
θ_{ja} for 8 lead MSOP	206°C/W

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