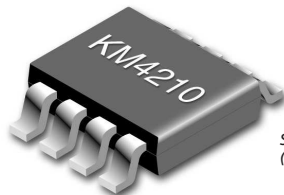


Product Brief



SOIC shown
(not actual size)

Preliminary

Outperforms the competition in single-supply applications at a

lower cost!

Features

- 505 μ A 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/ μ s slew rate
- ± 15 mA linear output current
- ± 30 mA output short circuit current
- 12nV/ $\sqrt{\text{Hz}}$ 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

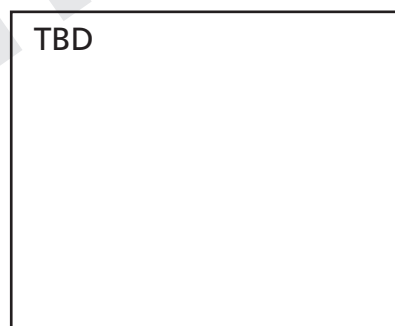
The KM4210 is a dual, low power, low cost, voltage feedback amplifier. The KM4210 uses only 505 μ A of supply current per amplifier, and is designed to operate on +2.7V, +5V, or ± 2.5 V supplies. The input voltage range extends 300mV below the negative rail and 1.2V below the positive rail.

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/ μ s 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/ $\sqrt{\text{Hz}}$
Slew rate	50	30	V/ μ s
Supply current/amp	0.5	0.8	μ A

Typical Performance Plot



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

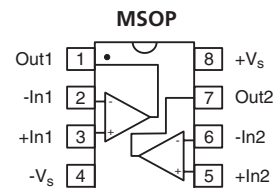
Electrical Characteristics

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

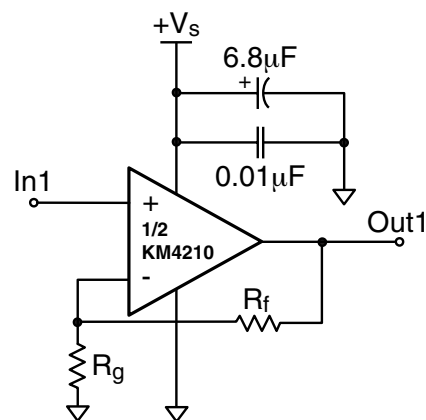
PARAMETERS	CONDITIONS	TYP	TYP	UNITS
		$V_s = +2.7\text{V}$	$V_s = +5\text{V}$	
Frequency Domain Response				
-3dB bandwidth	$G = +1$, $V_o = 0.05V_{pp}$	x	75	MHz
	$G = +2$, $V_o < 0.2V_{pp}$	x	35	MHz
full power bandwidth	$G = +2$, $V_o = 2V_{pp}$	x	x	MHz
gain bandwidth product		x	x	MHz
Time Domain Response				
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	$\mu\text{V}/^\circ\text{C}$
input bias current		x	1.2	μA
average drift		y	3.5	nA/ $^\circ\text{C}$
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	M Ω
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	$R_L = 10k\Omega$ to $V_s/2$	x	x	V
	$R_L = 1k\Omega$ 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	+ $V_s + 0.5\text{V}$, - $V_s - 0.5\text{V}$
internal power dissipation	see power derating curves in the full data sheet
θ_{ja} for 8 lead MSOP	206°C/W

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Lit No. XXXXXX-XXX