4 Channel Buffer Device with high capacitance load capability

DEVICE DESCRIPTION

The ZXFBF05 is a low cost, high slew rate, quad buffer amplifier. Built using the Zetex CA700 technology, this buffer has a small signal bandwidth of greater than 100MHz and a 1 volt pk-pk bandwidth of greater than 20 MHz. Each channel draws only 7.5mA. The device operates from a ±5 volt supply, which makes it ideal in a majority of applications.

This space saving buffer may be used in a wide variety of applications such as, video switching matrix, multi-channel instrumentation equipment, and A/D input buffer, etc.

FEATURES AND BENEFITS

- 4 Buffers per package
- Low distortion Class A O/P
- 100MHz bandwidth
- Low cost
- Designed for up to 300pF load
- Low supply current (7.5mA per buffer)
- No thermal runaway
- 14 pin SOIC package

APPLICATIONS

- Video Switching Matrix input buffer
- Instrumentation
- Multi-channel A/D input buffer
- Multi-isolation buffer

PART NUMBER	PACKAGE	PART MARK
ZXFBF05N14	SOIC14N	ZXFBF05

ORDERING INFORMATION

PART NUMBER	CONTAINER	INCREMENT
ZXFBF05N14TA	Reel 7"	500
ZXFBF05N14TC	Reel 13"	2500

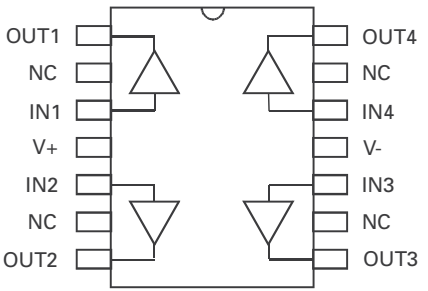
RELATED PRODUCTS

ZXFBF04 4 Channel Buffer

ZXFBF08 8 Channel Buffer

ZXFBF25 4 Channel Buffer with output enable

CONNECTION DIAGRAM



14 PIN SOIC PACKAGE

ABSOLUTE MAXIMUM RATINGS

Voltage on any pin 20V (relative to V-)
Operating temperature range 0 to 70°C (de-rated for -40 to 85°C)
Storage Temperature -55 to 125°C

ELECTRICAL CHARACTERISTICS

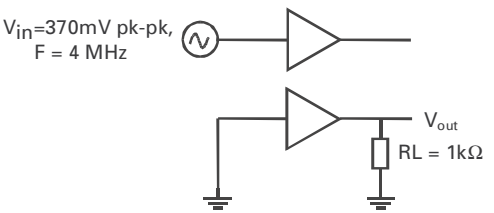
Test Conditions: Temperature =25°C, V+ = 5.00, V- = -5.00V, R_L = 1kΩ, C_L = 10pF

Parameter	Conditions	Min.	Typical	Max.	Units
Offset Voltage	V_{in} = 0V	-25	-	25	mV
Offset Voltage Drift	V_{in} = 0V		20		V/°C
Supply Current	All inputs = 0V	5.0	30	40	mA
Input Bias Current	V_{in} = 0V	0.1	1.0	2.0	µA
Output Voltage	R_L = 200Ω		±1		V
DC Gain	V_{in} = ± 0.5V, R_L = 1kΩ V_{offset} = 0.0V	0.95	0.98	1.00	V/V
DC Gain	V_{in} = ±0.5V, R_L = 1kΩ V_{offset} = 0.25V	0.95	0.98	1.00	V/V
Sink Current	V_{in} = 0V, V_{out} =0.5V	4.0	6.0	12.0	mA
Source Current	V_{in} = 0V, V_{out} =-0.5V	8.0	15.0	18.0	mA
Input Resistance		10	20	100	MΩ
Output Resistance		5	10	15	Ω
Bandwidth	20mVp-p, 1.0Vp-p		100 20		MHz
Slew Rate			40		V/µs
Voltage Noise	10 – 100 kHz		15		nV/√Hz
Differential Gain NTSC	F = 3.58MHz, V_{in} = 0.286Vp-p, DC ΔV_{in} = 0 to 0.714V		0.1		%
Differential Phase NTSC			0.15		Degrees
Differential Gain PAL	F = 4.43MHz, V_{in} = 0.286Vp-p, DC ΔV_{in} = 0 to 0.714V		0.1		%
Differential Phase PAL			0.15		Degrees
Channel Isolation	V_{in} = 370mVp-p, RL = 1kΩ F = 4 MHz		-60		dB

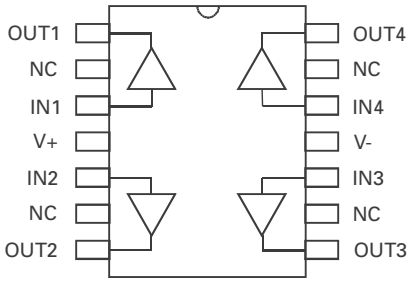
NOTES

Test circuit for measuring channel isolation.

Channel Isolation = 20 x LOG_{10} (V_{out} / V_{in}) dB



PIN DESCRIPTION

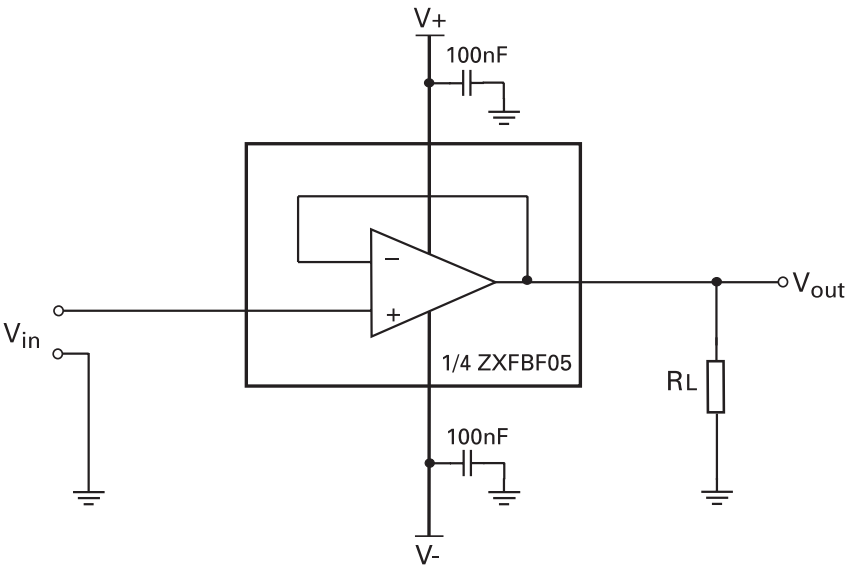


14 PIN SOIC PACKAGE

OUT 1,2,3,4	Buffer outputs.
IN 1,2,3,4	Buffer Inputs.
V+	Positive supply pin, +5 volts.
V-	Negative supply pin, -5 volts.

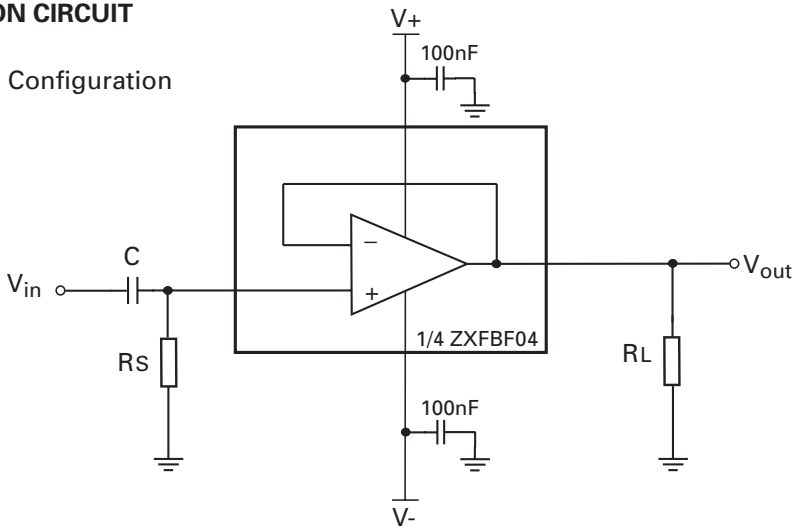
APPLICATION CIRCUIT

DC Coupled Configuration



APPLICATION CIRCUIT

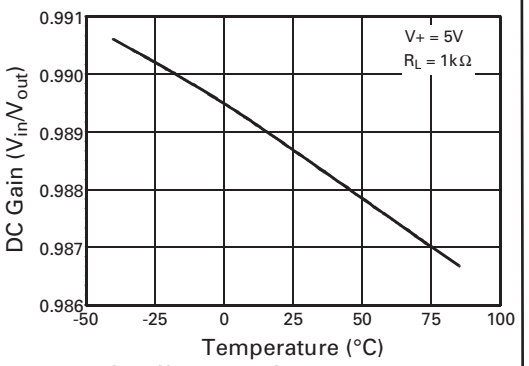
AC Coupled Configuration



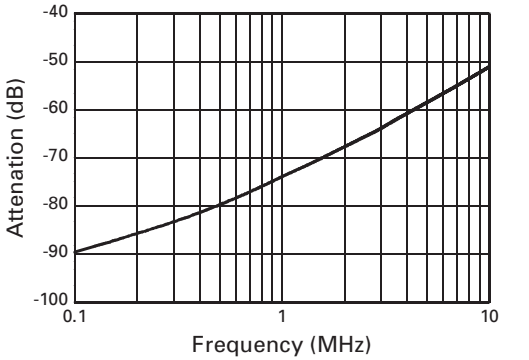
NOTE.

Rs: Source Resistor, provides DC bias for buffer input. Rs ⩽ 10kΩ
Both 100nF decoupling capacitors should be situated close to device supply pins.

TYPICAL CHARACTERISTICS

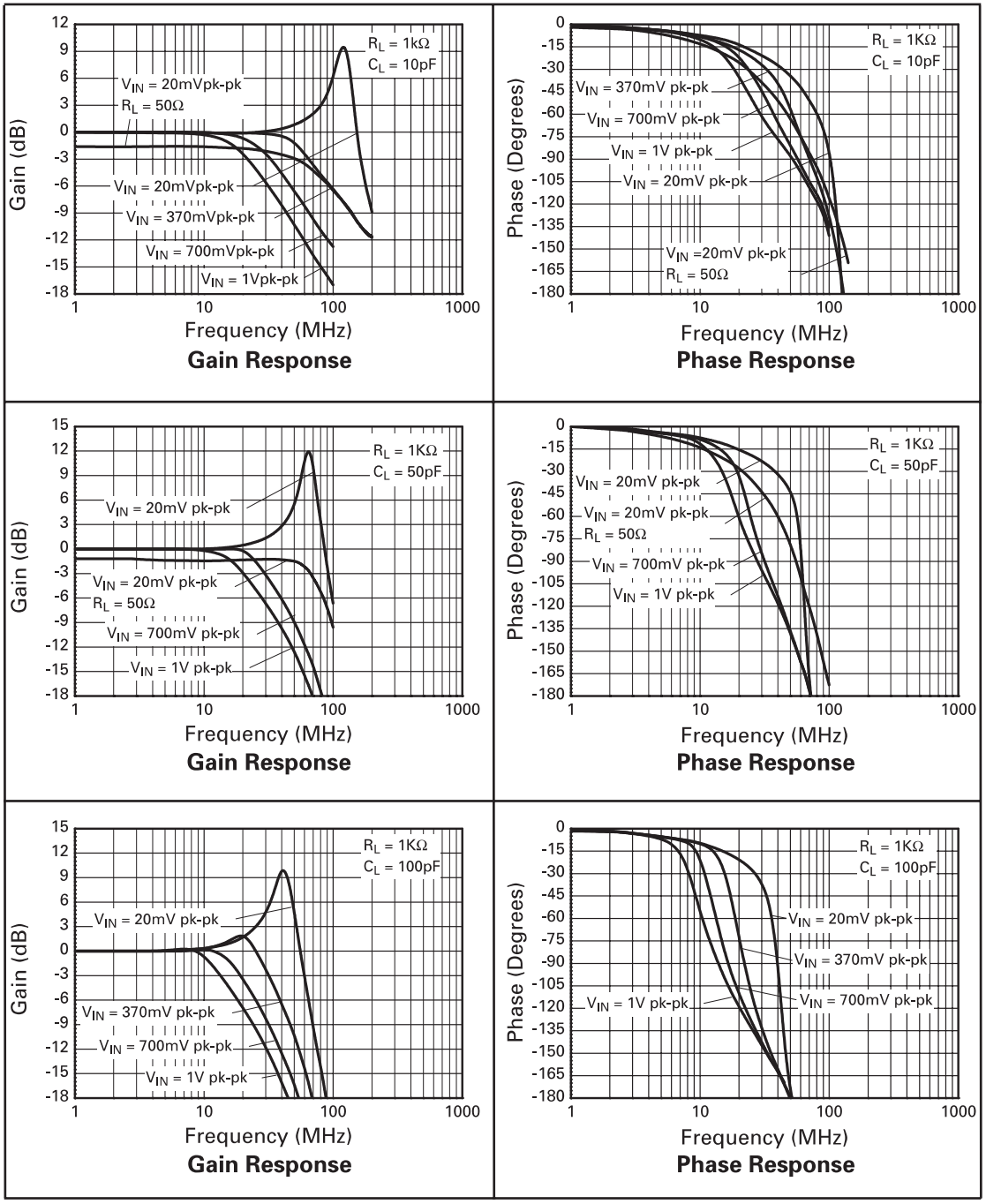


DC Differential Gain v Temperature



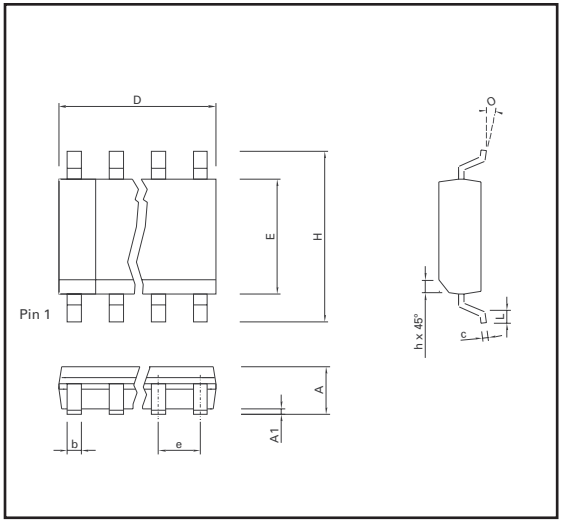
Channel Isolation v Frequency

TYPICAL CHARACTERISTICS



Test Conditions:V+=5V, Temperature=25°C.

PACKAGING INFORMATION



SOIC 14 Lead

DIM	Inches		Millimetres	
	Min	Max	Min	Max
A	0.053	0.069	1.35	1.75
A1	0.004	0.010	0.10	0.25
D	0.337	0.344	8.55	8.75
H	0.228	0.244	5.80	6.20
E	0.150	0.157	3.80	4.00
L	0.016	0.050	0.4	1.27
e	0.050 BSC		1.27 BSC	
b	0.013	0.020	0.33	0.51
c	0.008	0.010	0.19	0.25
O	0°	8°	0°	8°

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