

## 8 Channel Buffer Device

### DEVICE DESCRIPTION

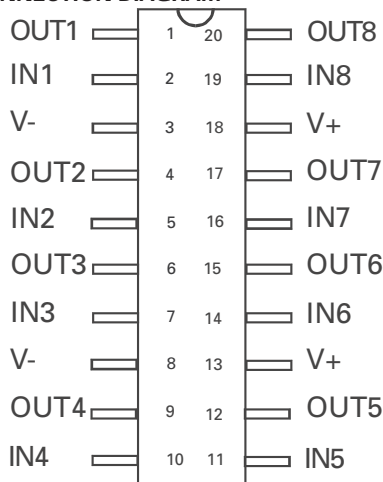
The ZXFBF08 is a low cost, high slew rate, octal buffer amplifier. Built using the Zetex CA700 technology, this buffer has a small signal bandwidth of greater than 100MHz and a 1 volt pk-pk bandwidth of greater than 20 MHz. Each channel draws only 1.9mA. The device operates from a  $\pm 5$  volt supply, 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

- 8 Buffers per package
- 100MHz bandwidth
- Low cost
- Low supply current (1.9mA per buffer)
- No thermal runaway
- 20 pin SOIC package

### CONNECTION DIAGRAM



### APPLICATIONS

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

PART NUMBER	PACKAGE	PART MARK
ZXFBF08W20	SOIC20W	ZXFBF08

### ORDERING INFORMATION

PART NUMBER	CONTAINER	INCREMENT
ZXFBF08W20TC	Reel 13"	1000

### RELATED PRODUCTS

ZXFBF04 4 Channel Buffer

ZXFBF05 4 Channel Buffer with high capacitance drive

ZXFBF25 4 Channel Buffer with output enable

# ZXFBF08

## 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<sub>+</sub> = 5.00, V<sub>-</sub> = -5.00V, R<sub>L</sub> = 1kΩ, C<sub>L</sub> = 10pF

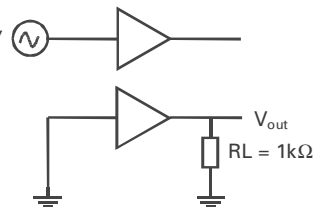
Parameter	Conditions	Min.	Typical	Max.	Units
Offset Voltage	V <sub>in</sub> = 0V	-15	-	15	mV
Offset Voltage Drift	V <sub>in</sub> = 0V		20		V/°C
Supply Current	All inputs = 0V		15	25	mA
Input Bias Current	V <sub>in</sub> = 0V	0.1	0.5	2.0	μA
Output Voltage	R <sub>L</sub> = 1kΩ R <sub>L</sub> = 10kΩ		±1 ±4		V
DC Gain	V <sub>in</sub> = ± 0.5V, R <sub>L</sub> = 1kΩ V <sub>offset</sub> = 0.0V	0.95	0.98	1.00	V/V
DC Gain	V <sub>in</sub> = ±0.5V, R <sub>L</sub> = 1kΩ V <sub>offset</sub> = 0.25V	0.95	0.99	1.00	V/V
Sink Current	V <sub>in</sub> = 0V, V <sub>out</sub> = 0.5V	1.0	2.2	5.0	mA
Source Current	V <sub>in</sub> = 0V, V <sub>out</sub> = -0.5V	6.0	9.0	12.0	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 <sub>in</sub> = 0.286Vp-p, DC ΔV <sub>in</sub> = 0 to 0.714V		0.1		%
Differential Phase NTSC			0.15		Degrees
Differential Gain PAL	F = 4.43MHz, V <sub>in</sub> = 0.286Vp-p, DC ΔV <sub>in</sub> = 0 to 0.714V		0.1		%
Differential Phase PAL			0.15		Degrees
Channel Isolation	V <sub>in</sub> = 370mVp-p, R <sub>L</sub> = 1kΩ F = 4 MHz		-60		dB

## NOTES

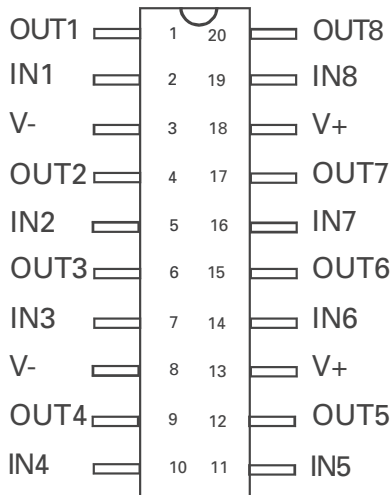
### Test circuit for measuring channel isolation.

Channel Isolation = 20 x LOG<sub>10</sub> (V<sub>out</sub> / V<sub>in</sub>) dB

V<sub>in</sub> = 370mV pk-pk,  
F = 4 MHz



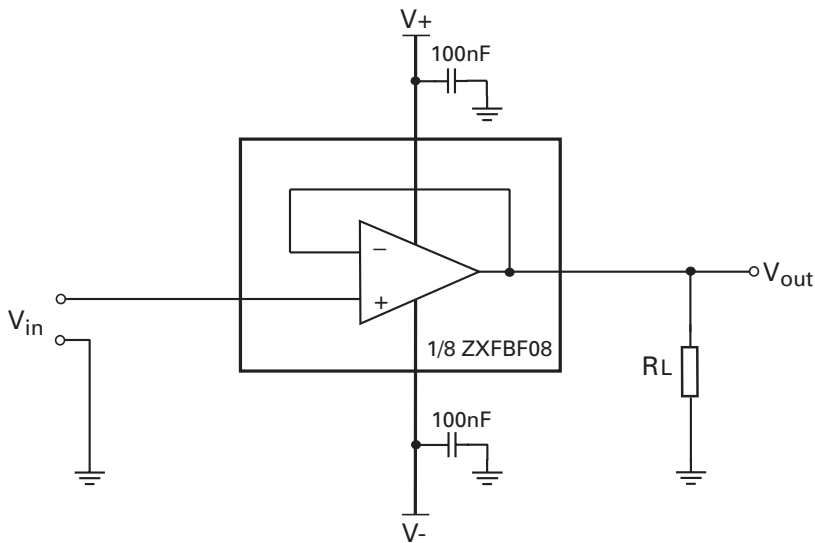
## PIN DESCRIPTION



OUT 1,2,3,4,5,6,7,8    Buffer outputs.  
 IN 1,2,3,4,5,6,7,8    Buffer Inputs.  
 V+                        Positive supply pin, +5 volts.  
 V-                        Negative supply pin, -5

## APPLICATION CIRCUIT

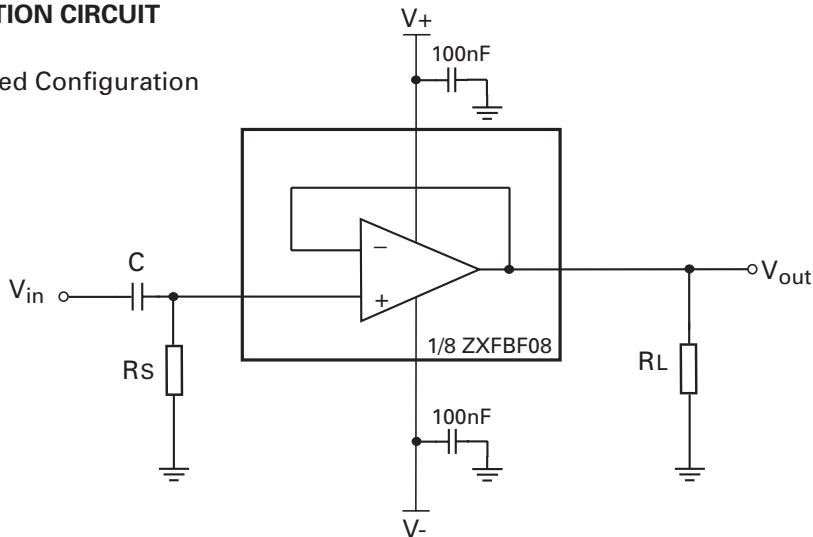
### DC Coupled Configuration



# ZXFBF08

## APPLICATION CIRCUIT

AC Coupled Configuration

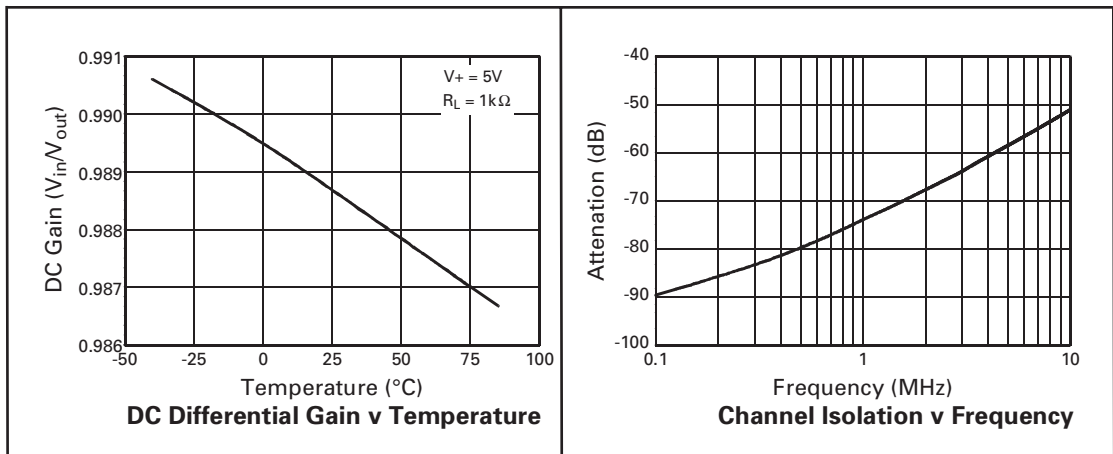


### NOTE.

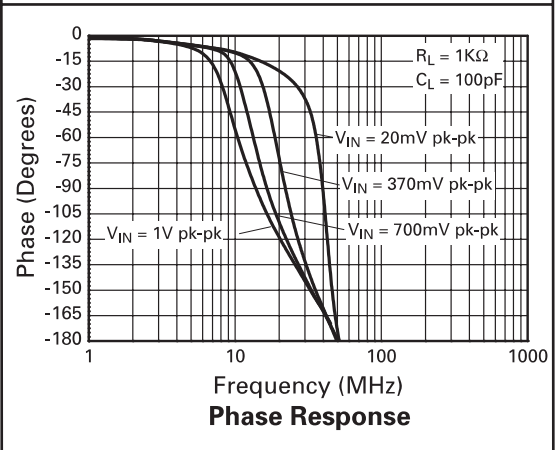
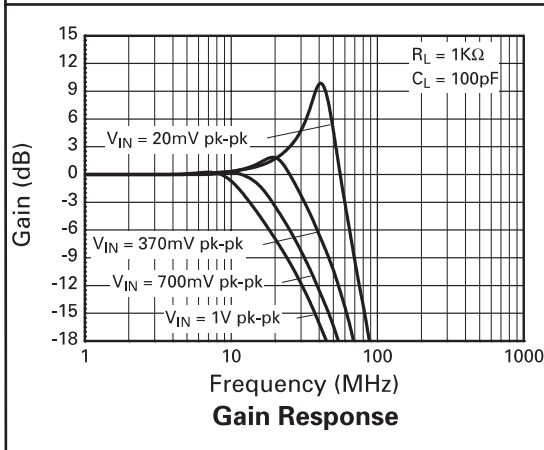
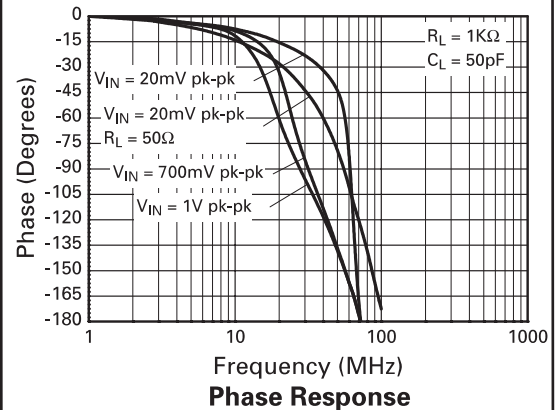
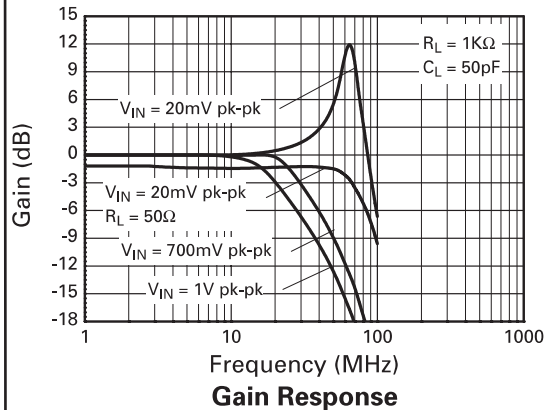
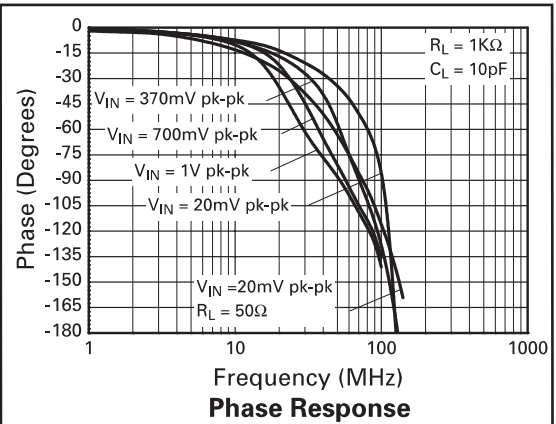
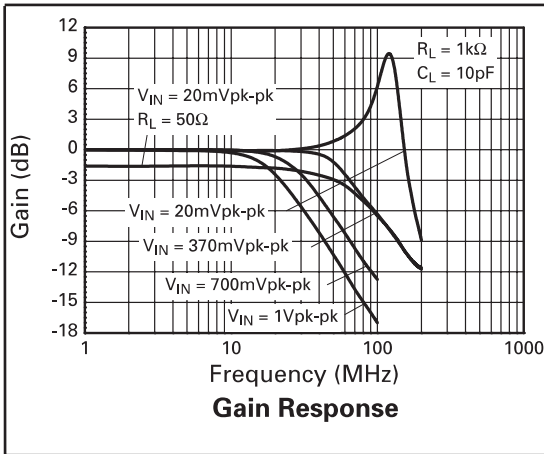
Rs: Source Resistor, provides DC bias for buffer input.  $R_s \leq 10k\Omega$

Both 100nF decoupling capacitors should be situated close to device supply pins.

## TYPICAL CHARACTERISTICS



## TYPICAL CHARACTERISTICS

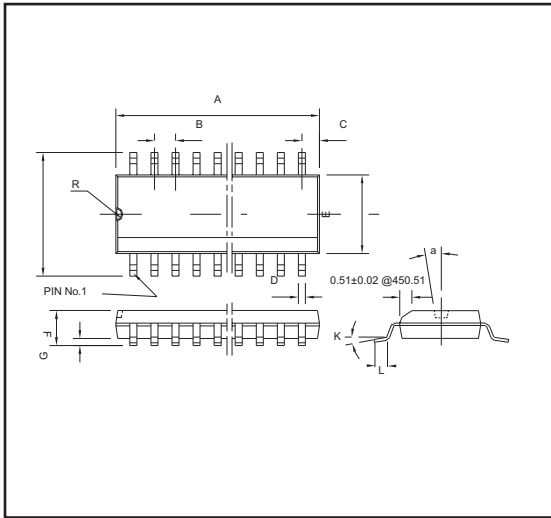


Test Conditions:  $V_+ = 5V$ , Temperature =  $25^\circ C$ .

# ZXFBF08

## PACKAGING INFORMATION

### SOIC 20 Lead



DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	12.65	12.85	0.498	0.506
B	1.27	—	0.05	—
C	0.66	—	0.026	—
D	0.36	0.46	0.014	0.018
E	7.40	7.60	0.291	0.299
F	2.44	2.64	0.096	0.104
G	0.10	0.30	0.004	0.012
H	0°	7°	0°	7°
I	0.23	0.28	0.009	0.011
J	10.11	10.51	0.398	0.414
K	0°	8°	0°	8°
L	0.51	1.01	0.02	0.04
R	0.63	0.89	0.025	0.035
a	7°BSC		7°BSC	



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