

## General Description

The RR\_OPA\_XH018 analogue IP cell is a Rail-to-Rail operational amplifier with push-pull output buffer, designed to be used as general purpose signal processing element in an ASIC.

The amplifier is unity gain stable and hence can be used in switched capacitor circuits (for example sample and hold elements, filters etc).

The output stage is designed to drive internal capacitive loads up to 20pF and provides 5mA output current, but can easily be adapted to fit further requirements.

## Ratings, Parameters and Conditions

Absolute Maximum Ratings						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Storage Temperature	$T_{ST}$	-55		125	°C	
Operating Temperature	$T_{OP}$	-40		85	°C	
Supply Voltage	$V_{DD}$	-0.3		3.6	V	
Supply Current	$I_{DD}$			50	mA	
Input Voltage Analog	$V_{INA}$	-0.3		$V_{DD} + 0.3$	V	

Electrical Parameters						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Supply Voltage	$V_{DD}$	3	3.3	3.6	V	
Supply Current	$I_{DD}$		200		uA	wo load
Bias Current			5		uA	
Output drive		-5		5	mA	
Common Mode Range	$V_{cm}$	-0.5		$V_{DD} + 0.5$	V	
Phase Margin			65		deg.	20pF load
open loop gain			133		dB	20pF load
gain bandwidth			10.5		MHz	20pF load
Offset			+/-1.2	+/-5	mV	3 $\sigma$

## Interface and Symbol

IO-Description			
Interface	I/O	Function	Comment
VDD	S	supply	
VSS	S	supply	
IBN	I	bias	current into nmos
EN	I	enable	
INP	I	positive input	
INN	I	negative input	
OUT	O	output	

