RENESAS Low Voltage 1:4 CMOS Clock Buffer

MPC94551

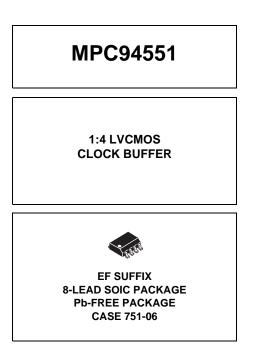
PRODUCT DISCONTINUATION NOTICE - LAST TIME BUY EXPIRES SEPTEMBER 7, 2016

DATASHEET

The MPC94551 is a CMOS 1:4 fanout buffer. The MPC94551 is ideal for applications requiring lower voltage.

Features

- 1:4 CMOS fanout buffer
- 300 ps output to output skew
- I/O frequency up to 160 MHz operation
- Non-inverting output clock
- 3.3 V supply voltage
- Output Enable mode tri-states outputs
- -40°C to 85°C industrial temperature range
- 8-lead SOIC package, Pb-free
- For drop in replacement use 551MI



ORDERING INFORMATION				
Device	Package			
MPC94551EF	SO-8 (Pb-FREE)			
MPC94551EFR2	SO-8 (Pb-FREE)			

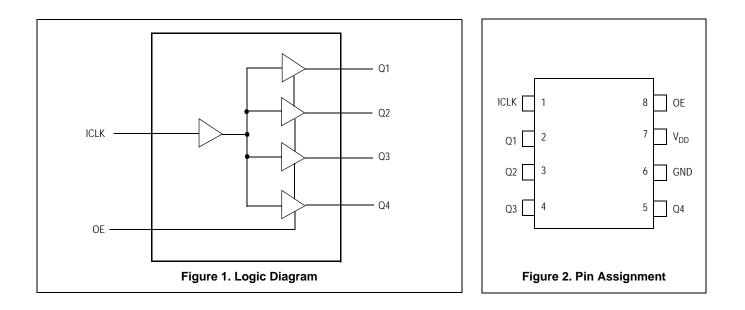


Table 1. Pin Description

Pin Number	Pin Name	Pin Type	Pin Description
1	ICLK	Input	Clock input, internal pull-up resistor
2	Q1	Output	Clock output ⁽¹⁾
3	Q2	Output	Clock output ⁽¹⁾
4	Q3	Output	Clock output ⁽¹⁾
5	Q4	Output	Clock output ⁽¹⁾
6	GND	Power	Connect to ground ⁽²⁾
7	V _{DD}	Power	Connect to 3.3 V ⁽²⁾
8	OE	Input	Output enable, tri-states outputs when low, internal pull-up resistor

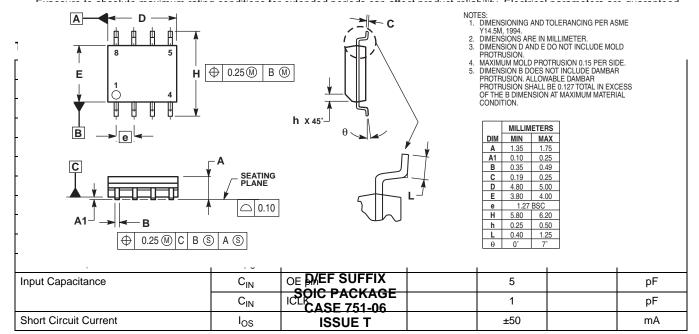
1. A 33 Ω series terminating resistor may be used on each clock output if the trace is longer than 1 inch.

2. A decoupling capacitor of 0.01 μ F should be connected between V_{DD} on pin 7 and GND on pin 6, as close to the device as possible.

Table 2. Absolute Maximum Ratings⁽¹⁾

Parameter	Rating	Unit
Power Supply Voltage, V _{DD}	3.9	V
All Inputs and Outputs	–0.5 to V _{DD} +0.5	V
Ambient Operating Temperature	-40 to +85	°C
Storage Temperature	-65 to +150	°C
Junction Temperature	175	°C
Soldering Temperature	260	°C

PACKAGE DIMENSIONS
 Proceeding of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied.



1. Nominal switching threshold is $V_{DD}/2$.

Parameter	Symbol	Condition	Min	Тур	Max	Unit
Input Frequency			0		160	MHz
Output Frequency ⁽¹⁾		15 pF load			160	MHz
Output Clock Rise Time	t _{OR}	0.8 V to 2.0 V			1.5	ns
Output Clock Fall Time	t _{OF}	2.0 V to 0.8 V			1.5	ns
Propagation Delay ⁽²⁾		135 MHz	1.5	4	5	ns
Output to Output Skew ⁽³⁾		Rising edges at $V_{DD}/2$			300	ps

Table 4. AC Characteristics (V_{DD} = 3.3 V \pm 5%; Ambient Temperature = -40°C to 85°C)

1. Measured with an external series resistor of 33Ω positioned close to each output pin

2. Measured with rail to rail input clock

3. Measured between any 2 outputs with equal loading

Revision History Sheet Rev Table Page Description of Change 4 1 NRND – Not Recommend for New Designs

Rev	Table	Page	Description of Change	Date
4		1	NRND – Not Recommend for New Designs	12/21/12
4		1	Removed NRND	5/5/15
4		1	Product Discontinuation Notice - Last time buy expires September 7, 2016. PDN N-16-02	3/15/16



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