

Process

C35 (0.35µm)

Key Features

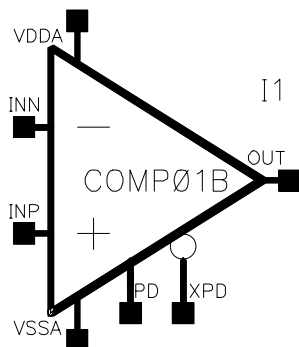
- Small Area 0.0034 mm²
- Size x = 17.8 µm, y = 190 µm
- Supply Voltage 3.0 to 3.6V
- Temperature Range -40 to 125°C
- Power Down Mode
- No Hysteresis

Description

The COMP01B cell is a medium speed comparator cell with very low current consumption and without hysteresis.

The cell provides a power down mode.

Symbol



Pinlist

Pin	Description	Type
INP	Pos. Input Voltage	Analog
INN	Neg. Input Voltage	Analog
OUT	Output Voltage	Digital
XPD	Power Down not	Digital
PD	Power Down	Digital
VDDA	Positive Analog Supply Voltage	Supply
VSSA	Negative Analog Supply Voltage	Supply

TECHNICAL DATA FOR 3.3V SUPPLY(T_{junction} = -40 to 125°C, VDDA=+3.0V to +3.6V, unless otherwise specified)**GENERAL PARAMETERS**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T _{junction}	Junction Temperature		-40	27	125	°C
X	x – Size of macro cell			17.8		μm
Y	y – Size of macro cell			190		μm

DC PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VthP ¹⁾	Pos. Threshold Voltage		-12.8	3.2	14.3	mV
VthN ¹⁾	Neg. Threshold Voltage		-12.9	3.2	14.2	mV
Vos ¹⁾	Offset Voltage		-12.8	3.2	14.2	mV
Hyst ¹⁾	Hysteresis Voltage		0.02	0.04	0.06	mV

OUTPUT PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I _{source} ²⁾	Output Source Current		0.6	1.1	2.0	mA
I _{sink} ²⁾	Output Sink Current		0.7	1.5	2.8	mA

POWER REQUIREMENTS

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VDDA	Pos. Analog Supply Voltage		3.0	3.3	3.6	V
VSSA	Neg. Analog Supply Voltage		0	0	0	V
IDDA	Supply Current Analog		2	8	20	μA
P _{diss_tot}	Total Power Consumption		6	26	72	μW
P _{diss_pd}	Power Consumption in PD				200	nW

TRANSIENT PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T _{resp_r} ³⁾	Response Time Rise		62	194	522	ns
T _{resp_f} ³⁾	Response Time Fall		53	198	652	ns
T _{wakeup}	Wakeup Time		100	225	538	ns

- 1) The negative input INN was set to VDDA/2. Threshold voltages VthP and VthN are the input voltage needed to change the output state in each direction. The offset voltage is defined as the average of VthP and VthN, while the hysteresis voltage is the difference of these two voltages.
- 2) The power consumption will vary with the output current
- 3) Input signal with 100mV step and 10mV overdrive

Contact

austriamicrosystems AG
A 8141 Schloss Premstätten, Austria
T. +43 (0) 3136 500 5333
F. +43 (0) 3136 500 5755
support@austriamicrosystems.com

Copyright

Copyright © 2004 austriamicrosystems. Trademarks registered ®. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner. To the best of its knowledge, austriamicrosystems asserts that the information contained in this publication is accurate and correct.