



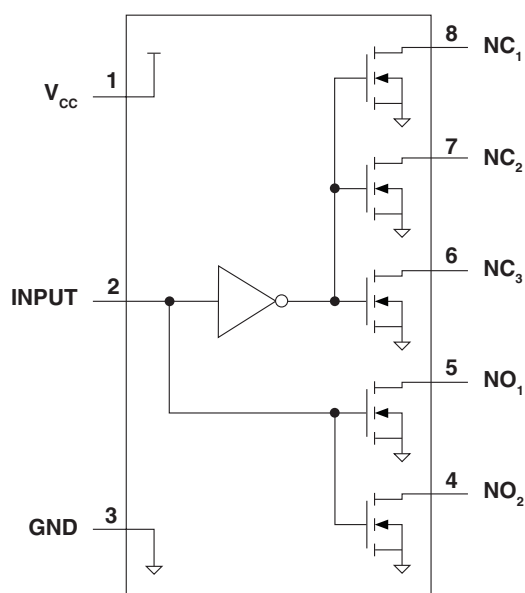
### Features

- Extremely Low Static Current Draw from Power Supply
- Two-State Control
- Low-Voltage Operation ( $V_{CC} = 2.5V$ )
- Low Output Transistor Leakage
- 8-Pin, 150mil SOIC-N Package

### Applications

- Portable Battery Equipment
- Telephony
- Instrumentation

### CPC5608 Block Diagram



Output	Input = 0	Input = 1
NC <sub>1</sub>	On	Off
NC <sub>2</sub>	On	Off
NC <sub>3</sub>	On	Off
NO <sub>1</sub>	Off	On
NO <sub>2</sub>	Off	On

On = Low Impedance

### Description

The CPC5608 is a 5-channel, low-power transistor array IC with a simple 2-state logic control input. A logic-low input turns on the switches NC<sub>1</sub>, NC<sub>2</sub>, and NC<sub>3</sub> while a logic high turns on the switches NO<sub>1</sub> and NO<sub>2</sub>. Output transistors are capable of sinking 20mA in low output voltage (<7V) circuits. The IC features a supply voltage range of 2.5V to 5.5V and extremely low static supply bias current draw making it ideal for portable battery and on-hook telephony applications. In addition, the maximum output transistor leakage is a low 1μA.

The device logic input threshold is compatible with standard optocoupler output levels for isolation applications.

### Ordering Information

Part #	Description
CPC5608N	8-Pin SOIC-N Package, (50/tube)
CPC5608NTR	8-Pin SOIC-N Package, Tape & Reel, (1000/Reel)

## 1.0 Specifications

### 1.1 Pin Description

Pin #	Name	Description
1	V <sub>CC</sub>	Supply Voltage
2	INPUT	Logic Input
3	GND	Ground
4	NO <sub>2</sub>	Output, Active* with INPUT = 1
5	NO <sub>1</sub>	Output, Active* with INPUT = 1
6	NC <sub>3</sub>	Output, Active* with INPUT = 0
7	NC <sub>2</sub>	Output, Active* with INPUT = 0
8	NC <sub>1</sub>	Output, Active* with INPUT = 0

\* Active = Low Impedance

### 1.2 Absolute Maximum Ratings @ 25°C

Parameter	Min	Max	Unit
Operating Temperature	0	70	°C
Storage Temperature	-55	+125	°C
Positive Supply Voltage	-0.5	7	V
Max Power Dissipation	-	0.33	W
Package Thermal Conduction (Estimate)	-	165	°C/W
Output Voltage (ONX)	-0.5	7	V

Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

### 1.3 Electrical Characteristics

Unless otherwise specified, minimum and maximum values are guaranteed by production testing requirements. Typical values are characteristic of the device and are the result of engineering evaluations. In addition, typical values are provided for informational purposes only and are not part of the testing requirements.

All electrical specifications are provided for T<sub>A</sub>=25°C and 3.0V < V<sub>CC</sub> < 5.5V.

#### 1.3.1 Electrical Characteristics

Parameter	Conditions	Symbol	Min	Typ	Max	Units
<b>Input Parameters</b>						
Logic "1" Voltage	V <sub>CC</sub> = 2.8V, V <sub>CC</sub> = 3.5V	V <sub>IH</sub>	2.4	-	-	V
Logic "0" Voltage	V <sub>CC</sub> = 2.8V, V <sub>CC</sub> = 3.5V	V <sub>IL</sub>	-	-	0.8	V
Logic "1" Current	V <sub>CC</sub> = 3.5V, V <sub>IN</sub> = 2.4V	I <sub>IH</sub>	-	2.6	20	μA
Logic "0" Current	V <sub>CC</sub> = 3.5V, V <sub>IN</sub> = 0.4V	I <sub>IL</sub>	-	0.4	2	μA
<b>Output Parameters</b>						
Output Leakage Current	V <sub>CC</sub> = 3.0V, V <sub>SW</sub> = 6.0V Switch Off	I <sub>LKG</sub>	-	0.3	1	μA
Output Resistance	V <sub>CC</sub> = 2.8V, V <sub>CC</sub> = 3.2V Switch On	R <sub>ON</sub>	5	10	15	Ω
Maximum Output Current	V <sub>CC</sub> = 3.0V, V <sub>OUT</sub> = 2.0V Switch On	I <sub>OUT</sub>	50	-	-	mA
<b>Power Supply</b>						
Operational Range	-	V <sub>CC</sub>	2.5	3.0	5.5	V
Quiescent Power Supply Current	V <sub>CC</sub> = 5.5V, V <sub>IN</sub> = 0.0V, V <sub>IN</sub> = 5.5V	I <sub>CC</sub>	-	2	100	nA
<b>Timing</b>						
Turn-On Time	V <sub>CC</sub> = 3.0V	t <sub>on</sub>	-	1	3	μs
Turn-Off Time		t <sub>off</sub>	-	1	3	μs

## Manufacturing Information

### Moisture Sensitivity



All plastic encapsulated semiconductor packages are susceptible to moisture ingress. IXYS Integrated Circuits Division classified all of its plastic encapsulated devices for moisture sensitivity according to the latest version of the joint industry standard, **IPC/JEDEC J-STD-020**, in force at the time of product evaluation. We test all of our products to the maximum conditions set forth in the standard, and guarantee proper operation of our devices when handled according to the limitations and information in that standard as well as to any limitations set forth in the information or standards referenced below.

Failure to adhere to the warnings or limitations as established by the listed specifications could result in reduced product performance, reduction of operable life, and/or reduction of overall reliability.

This product carries a **Moisture Sensitivity Level (MSL) rating** as shown below, and should be handled according to the requirements of the latest version of the joint industry standard **IPC/JEDEC J-STD-033**.

Device	Moisture Sensitivity Level (MSL) Rating
CPC5608N	MSL 1

### ESD Sensitivity



This product is **ESD Sensitive**, and should be handled according to the industry standard **JESD-625**.

### Reflow Profile

This product has a maximum body temperature and time rating as shown below. All other guidelines of **J-STD-020** must be observed.

Device	Maximum Temperature x Time
CPC5608N	260°C for 30 seconds

### Board Wash

IXYS Integrated Circuits Division recommends the use of no-clean flux formulations. However, board washing to remove flux residue is acceptable, and the use of a short drying bake may be necessary. Chlorine-based or Fluorine-based solvents or fluxes should not be used. Cleaning methods that employ ultrasonic energy should not be used.



# CPC5608N



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