Quad 2-Input Or Gate

Features

- Wide operating voltage range V_{DD}=3V to 18V
- Fully static operation
- 5V-10V-15V parametric ratings
- Standardized symmetrical output characteristics
- Inputs and outputs are protected against electrostatic effects
- Specified from -40℃ to +85℃


DIP-14


SOP-14


TSSOP-14


QSOP-16


QFN-16 3*3

Ordering Information

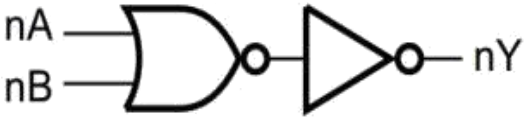
DEVICE	Package Type	MARKING	Packing	Packing Qty
CD4071DN/HG	DIP-14	CD4071D	TUBE	1000pcs/box
CD4071DM/TR-HG	SOP-14	CD4071D	REEL	2500pcs/reel
CD4071DMT/TR-HG	TSSOP-14	CD4071D	REEL	2500pcs/reel
CD4071DMS/TR-HG	QSOP-16	CD4071D	REEL	2500pcs/reel
CD4071DLQ/TR-HG	QFN-16 3*3	4071D	REEL	5000pcs/reel

Description

The CD4071D is a quad 2-input OR gate,These quad gates are monolithic complementary MOS(CMOS) integrated circuits constructed with N- and P-channel enhancement mode transistors.

They have equal source and sink current capabilities.The devices also have buffered outputs which improve transfer characteristics by providing very high gain.All inputs are buffered .

Logic Diagram

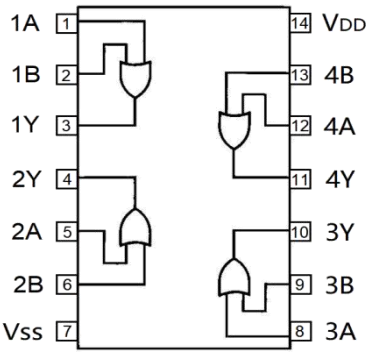


Logic Diagram（one gate）

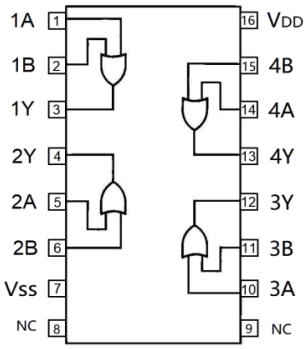
Truth Table

Input		Outputs
nA	nB	Y
0	0	0
0	1	1
1	0	1
1	1	1

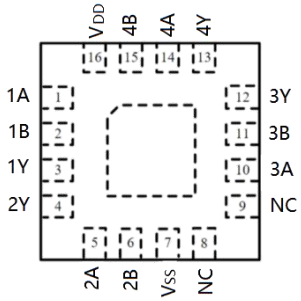
Connection Diagrams



DIP-14/SOP-14/TSSOP-14



QSOP-16



QFN-16

Pin Description

PIN No.		NAME	I/O	FUNCTION
DIP/SOP/TSSOP	QSOP/QFN			
1	1	1A	I	Data Input
2	2	1B	I	Data Input
3	3	1Y	O	Data Output
4	4	2Y	O	Data Output
5	5	2A	I	Data Input
6	6	2B	I	Data Input
7	7	V_{SS}	-	Ground
8	10	3A	I	Data Input
9	11	3B	I	Data Input
10	12	3Y	O	Data Output
11	13	4Y	O	Data Output
12	14	4A	I	Data Input
13	15	4B	I	Data Input
14	16	V_{DD}	-	Positive Supply Voltage
-	8	NC	-	not connected
-	9	NC	-	not connected

Absolute Maximum Ratings

Symbol	Parameter	MIN	MAX	Unit
V_{DD}	Supply Voltage	-0.5	20	V
V_I	DC Input Voltage	0.5	V_{CC}+0.5	V
P_D	Power Dissipation		500	mW
T_J	Junction Temperature		125	℃
T_{OP}	Operating Temperature	-40	85	℃
T_L	Lead Temperature（10 Seconds）		260	℃

Absolute maximum ratings are those values beyond which the device could be permanently damaged,These are stress ratings only,which do not imply functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions.

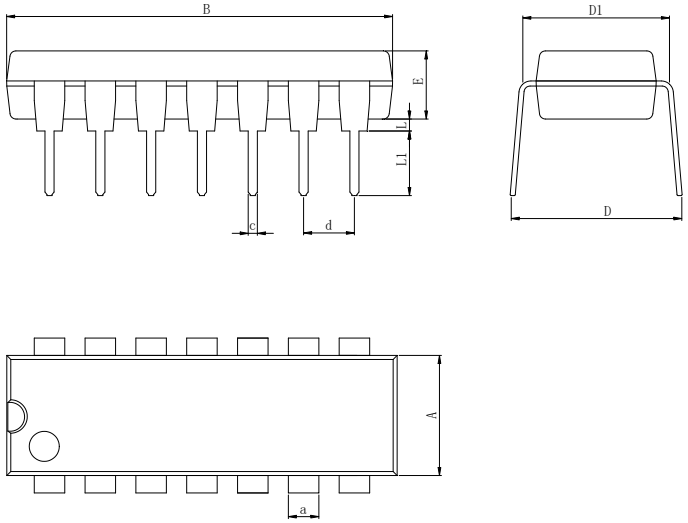
Electrical Characteristics

(T_a=25℃, voltages are referenced to VSS (ground=0V), unless otherwise specified)

Symbol	Parameter	Test Condition			MIN	TYP	MAX	Unit
		V_O	V_{IN}	V_{DD}				
I_{DD}	Supply Current		0,5	5	--		1	uA
			0,10	10	--		1	uA
			0,18	18	--		2	uA
I_{OL}	Low Level Output Current	0.4	0,5	5	1	2	--	mA
		0.5	0,10	10	2	5	--	mA
		1.5	0,15	15	10	20	--	mA
I_{OH}	High Level Output Current	4.6	0,5	5	-0.5	-1	--	mA
		2.5	0,5	5	-2	-4	--	mA
		9.5	0,10	10	-1	-2.2	--	mA
		13.5	0,15	15	-4	-8	--	mA
V_{OL}	Low Level Output Voltage		0,5	5	--	0.0	0.05	V
			0,10	10	--	0.0	0.05	V
			0,15	15	--	0.0	0.05	V
V_{OH}	High Level Output Voltage		0,5	5	4.95	5	--	V
			0,10	10	9.95	10	--	V
			0,15	15	14.95	15	--	V
V_{IL}	Low Level Output Voltage	0.5,4.5		5	--		1.5	V
		1,9		10	--		3	V
		1.5,13.5		15	--		4	V
V_{IH}	High Level Output Voltage	0.5		5	3.5		--	V
		1		10	7		--	V
		1.5		15	11		--	V
I_I	Input Leakage Current		0,18	18	--		±1	uA

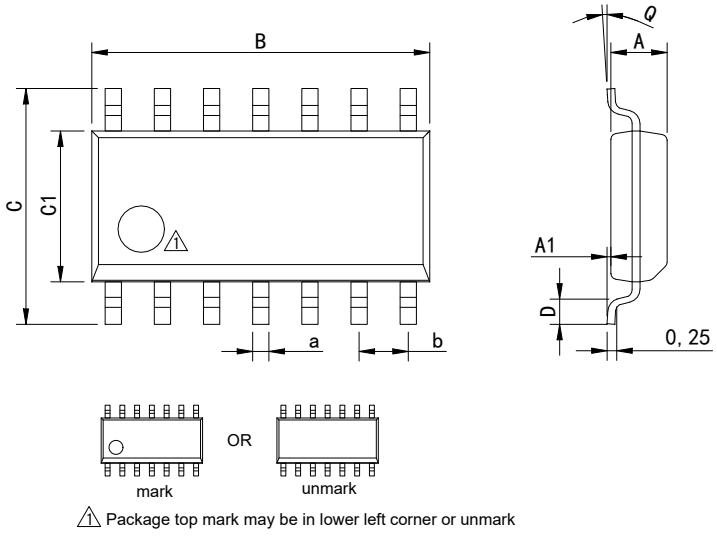
Physical Dimensions

DIP-14



Dimensions In Millimeters(DIP-14)										
Symbol:	A	B	D	D1	E	L	L1	a	c	d
Min:	6.10	18.94	8.10	7.42	3.10	0.50	3.00	1.50	0.40	2.54 BSC
Max:	6.68	19.56	10.9	7.82	3.55	0.70	3.60	1.55	0.50	

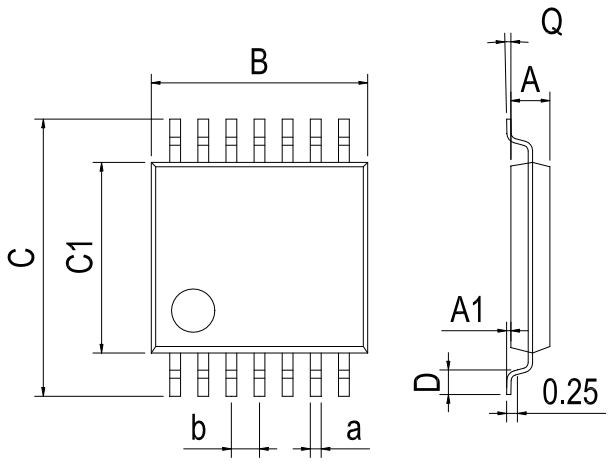
SOP-14



Dimensions In Millimeters(SOP-14)									
Symbol:	A	A1	B	C	C1	D	Q	a	b
Min:	1.35	0.05	8.55	5.80	3.80	0.40	0°	0.35	1.27 BSC
Max:	1.55	0.20	8.75	6.20	4.00	0.80	8°	0.45	

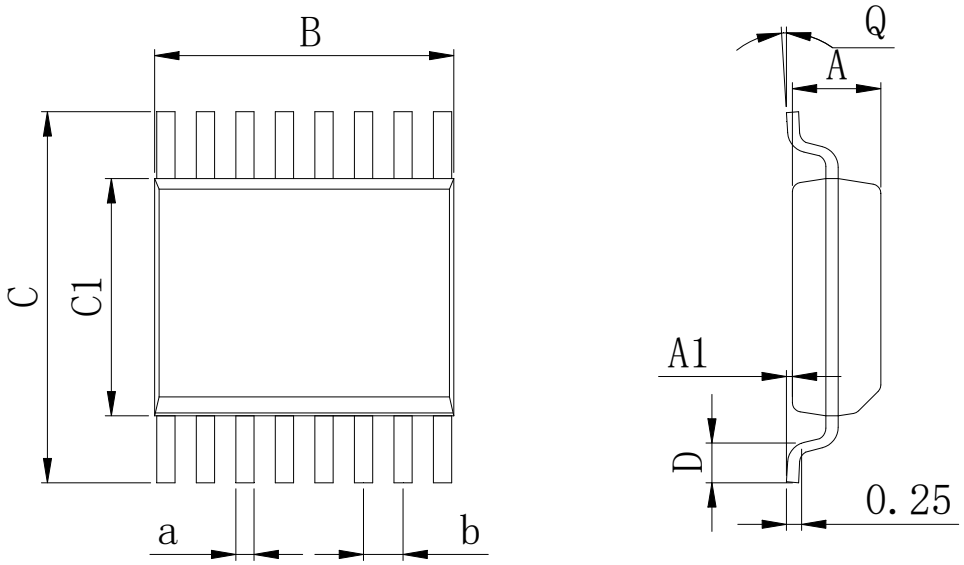
Physical Dimensions

TSSOP-14



Dimensions In Millimeters(TSSOP-14)									
Symbol:	A	A1	B	C	C1	D	Q	a	b
Min:	0.85	0.05	4.90	6.20	4.30	0.40	0°	0.20	0.65 BSC
Max:	0.95	0.20	5.10	6.60	4.50	0.80	8°	0.25	

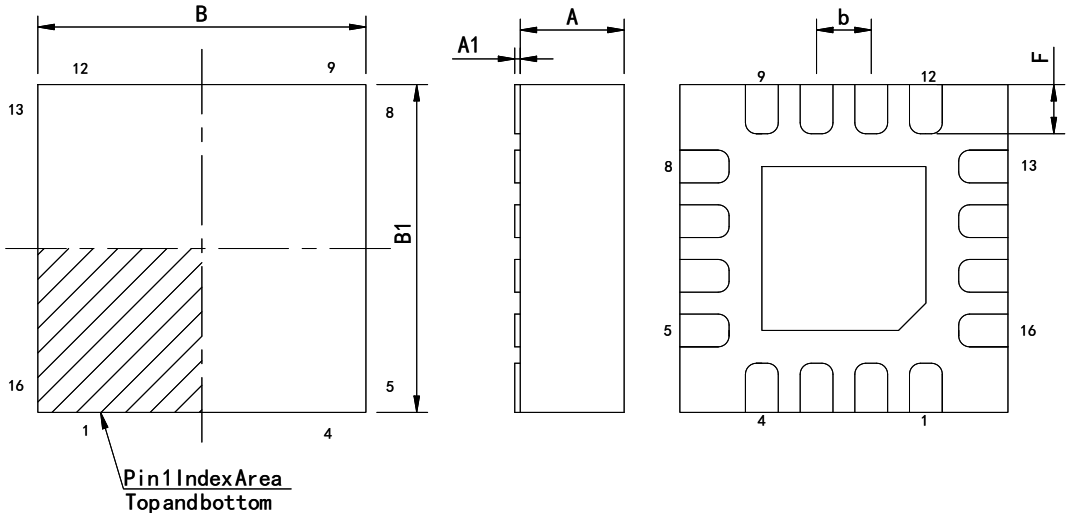
QSOP-16



Dimensions In Millimeters(QSOP-16)									
Symbol:	**A**	**A1**	**B**	**C**	**C1**	**D**	**Q**	**a**	**b**
Min:	1.35	0.05	4.80	5.80	3.80	0.40	0°	0.20	0.635 BSC
Max:	1.55	0.20	5.10	6.20	4.00	0.80	8°	0.25	

Physical Dimensions

QFN-16 3*3



Dimensions In Millimeters(QFN-16 3*3)								
Symbol:	**A**	**A1**	**B**	**B1**	**E**	**F**	**a**	**b**
Min:	0.85	0	2.90	2.90	0.15	0.25	0.18	0.50TYP
Max:	0.95	0.05	3.10	3.10	0.25	0.45	0.30	

Revision History

REVISION NUMBER	DATE	REVISION	PAGE
V1.0	2019-11	New	1-9
V1.1	2025-8	Document Reformatting	1-9
V1.2	2025-11	Update important statements、Update sop-8 Dimension drawing	9、5

IMPORTANT STATEMENT:

Huaguan Semiconductor reserves the right to change products and services offered without prior notice. Customers should obtain the latest relevant information before placing orders and verify that such information is current and complete. Huaguan Semiconductor assumes no responsibility or liability for altered documents.

Customers are responsible for complying with safety standards and implementing safety measures when using Huaguan Semiconductor products in system design and end-product manufacturing. You assume full responsibility for: selecting the appropriate Huaguan Semiconductor products for your application; designing, validating, and testing your application; and ensuring that your application complies with applicable standards and all other safety, security, or other requirements. This is to prevent potential risks that may lead to personal injury or property damage.

Huaguan Semiconductor products are not approved for use in life support, military, aerospace, or other high-risk applications. Huaguan products are neither intended nor warranted for use in such systems or equipment. Any failure or malfunction may lead to personal injury or severe property damage. Such applications are deemed "Unsafe Use." Unsafe Use includes, but is not limited to: surgical and medical equipment, nuclear energy control equipment, aircraft or spacecraft instruments, control or operation of vehicle power, braking, or safety systems, traffic signal instruments, all types of safety devices, and any other applications intended to support or sustain life. Huaguan Semiconductor shall not be liable for consequences resulting from Unsafe Use in these fields. Users must independently evaluate and assume all risks. Any issues, liabilities, or losses arising from the use of products beyond their approved applications shall be solely borne by the user. Users may not claim any compensation from Huaguan Semiconductor based on these terms. If any third party claims against Huaguan Semiconductor due to such Unsafe Use, the user shall compensate Huaguan Semiconductor for all resulting damages and liabilities.

Huaguan Semiconductor provides technical and reliability data (including datasheets), design resources (including reference designs), application or other design advice, web tools, safety information, and other resources for its semiconductor products. However, no guarantee is made that these resources are free from defects, and no express or implied warranties are provided. The use of testing and other quality control techniques is limited to Huaguan Semiconductor's quality assurance scope. Not all parameters of each device are tested.

Huaguan Semiconductor's documentation authorizes you to use these resources only for developing applications related to the products described herein. You are not granted rights to any other intellectual property of Huaguan Semiconductor or any third party. Any other reproduction or display of these resources is strictly prohibited. You shall fully indemnify Huaguan Semiconductor and its agents against any claims, damages, costs, losses, and liabilities arising from your use of these resources. Huaguan Semiconductor shall not be held responsible.