

CD4572 CMOS Hex Gate

1. General Description

1.1 Description

CD4572 Hex Gate provides the system designer with direct implementation of inverter, NAND, and NOR functions and supplements the existing family of CMOS gates.

1.2 Features

- Pin 7 NOR input positioned adjacent to VSS for easy use of gate as an inverter
- Pin 15 NAND input positioned adjacent to VDD for easy use of gate as an inverter

- Standardized symmetrical output characteristics
- 100% tested for quiescent current at 18V
- Maximum input current of 1μA at 18V and 25°C
- 5V, 10V, and 15V parametric ratings

1.3 Device Information

PART NUMBER	PACKAGE
CD4572	DIP
	SOP
	TSSOP

2. Pin Description and Functional Diagram

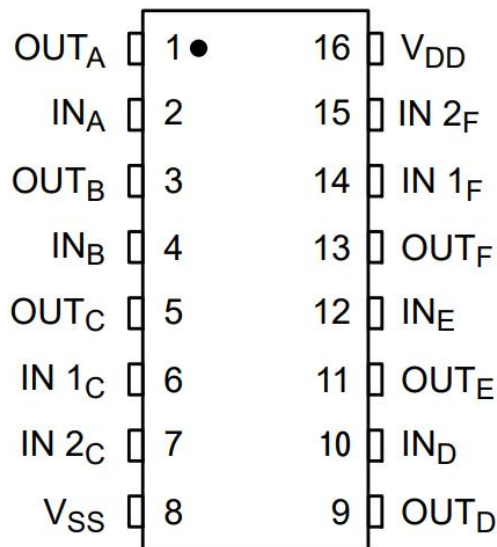


Figure 2.1 Top View

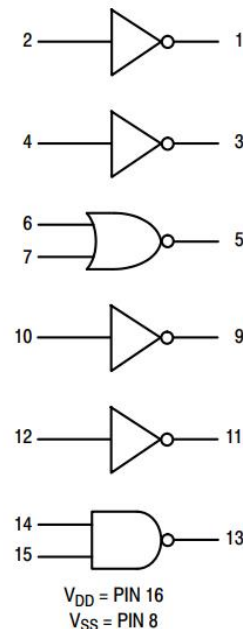


Figure 2.2 Functional Diagram

PIN No.	NAME	I/O	FUNCTION
1	OUT _A	O	Inverter A Output
2	IN _A	I	Inverter A Input
3	OUT _B	O	Inverter B Output
4	IN _B	I	Inverter B Input
5	OUT _C	O	NOR Output
6	IN1 _C	I	NOR Input 1
7	IN2 _C	I	NOR Input 2
8	VSS		Ground
9	OUT _D	O	Inverter D Output
10	IN _D	I	Inverter D Input
11	OUT _E	O	Inverter E Output
12	IN _E	I	Inverter E Input
13	OUT _F	O	NAND Output
14	IN1 _F	I	NAND Input 1
15	IN2 _F	I	NAND Input 2
16	VDD		Supply Voltage

3. System Diagram

3.1 Schematic Diagram

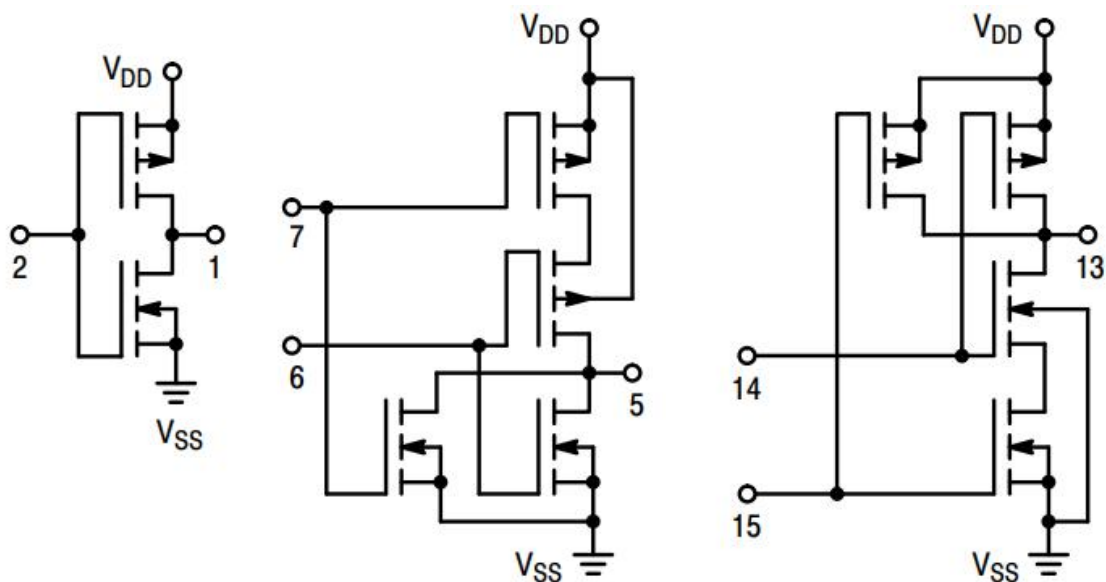


Figure 3.1: CD4572 Schematic Diagram



4. Specifications

4.1 Absolute Maximum Ratings

Symbol	Parameter	MIN	MAX	Unit
V _{DD}	DC Supply Voltage Range (Voltage Referenced to VSS Terminals)	-0.5	20	V
V _I	Input Voltage Range, All Inputs	0.5	V _{DD} +0.5	V
P _D	Power Dissipation		500	mW
T _J	Junction Temperature		125	°C
T _{OP}	Operating Temperature	-40	85	°C

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.

4.2 Electrical Characteristics

4.2.1 DC Specifications

(T_a=25°C, 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	--	0	1	uA
		--	0,10	10	--	0	1	uA
		--	0,18	18	--	0	1	uA
I _{OL}	Low Level Output Current	0.4	0,5	5	1	2	--	mA
		0.5	0,10	10	2.5	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	-2.5	-5	--	mA
		9.5	0,10	10	-1	-2.5	--	mA
		13.5	0,15	15	-5	-10	--	mA
V _{OL}	Low Level Output Voltage	--	0,5	5	--	0	0.05	V
		--	0,10	10	--	0	0.05	V
		--	0,15	15	--	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 Input Voltage	0.5,4.5	--	5	--	--	1	V
		1,9	--	10	--	--	2	V
		1.5,13.5	--	15	--	--	2.5	V
V _{IH}	High Level Input Voltage	0.5,4.5	--	5	4	--	--	V
		1,9	--	10	8	--	--	V
		1.5,13.5	--	15	12.5	--	--	V
I _{IN}	Input Leakage Current	--	0,18	18	--	0	±1	uA



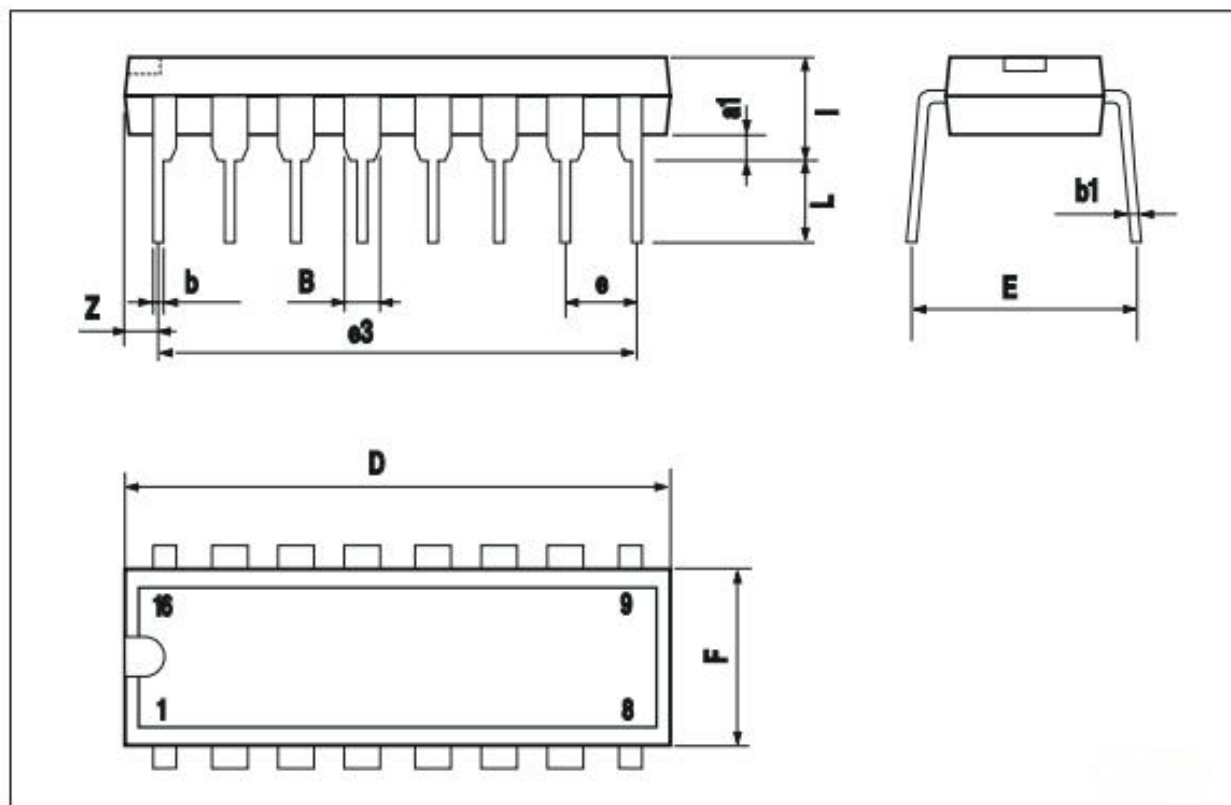
5. Ordering Information

Orderable Device	Package Type	Pins	Packing	Package Qty
CD4572ND16ATBE	DIP	16	Tube	25
CD4572NS16ARDQ	SOP	16	Tape & Reel	4000
CD4572TS16ARDQ	TSSOP	16	Tape & Reel	4000

6. Package Information

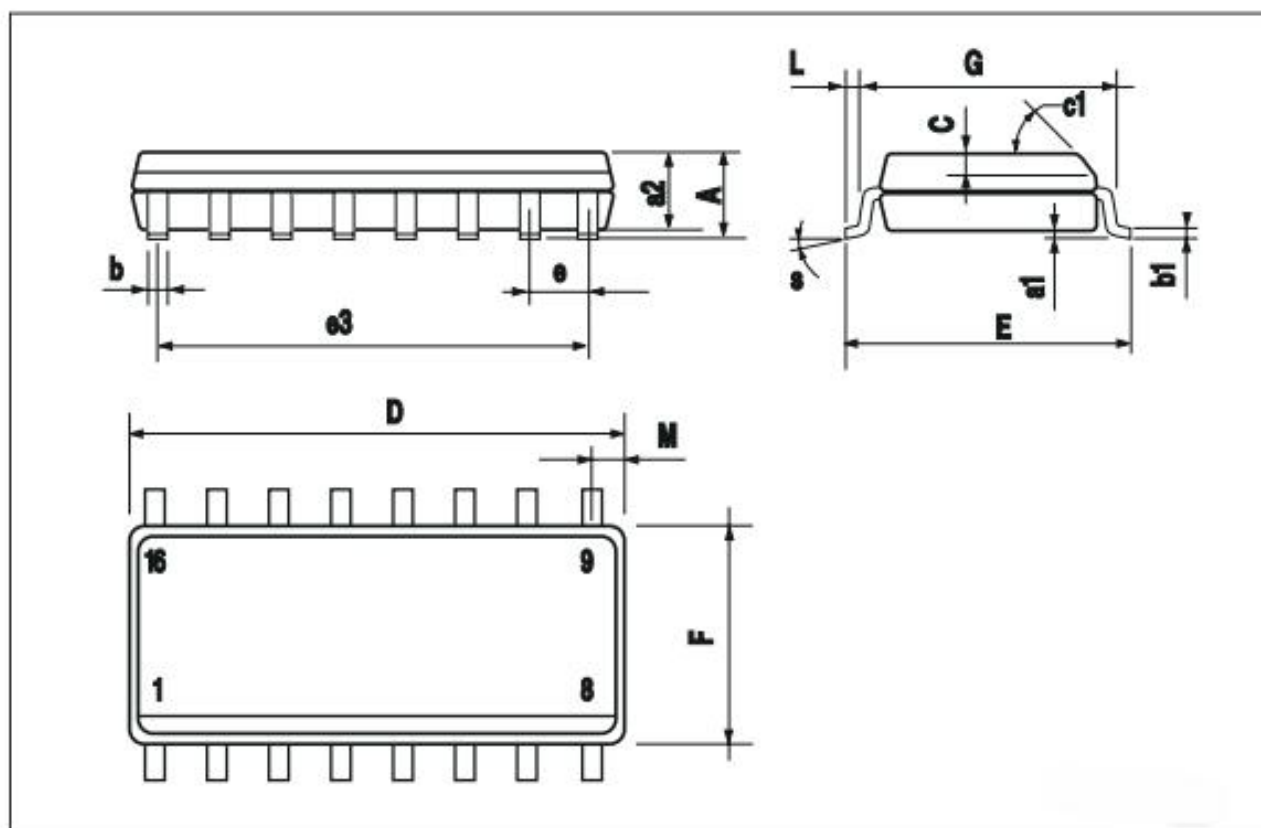
6.1 DIP16

Dim.	mm.			inch.		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.51			0.020		
B	0.77		1.65	0.030		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		17.78			0.700	
F			7.1			0.280
I			5.1			0.201
L		3.3			0.130	
Z			1.27			0.050



6.2 SOP16

Dim.	mm.			inch.		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.068
a1	0.1		0.25	0.004		0.010
a2			1.64			0.063
b	0.35		0.46	0.013		0.018
b1	0.19		0.25	0.007		0.010
C		0.5			0.019	
c1	45° (typ.)					
D	9.8		10	0.385		0.393
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		8.89			0.350	
F	3.8		4.0	0.149		0.157
G	4.6		5.3	0.181		0.208
L	0.5		1.27	0.019		0.050
M			0.62			0.024
S	8° (max.)					



6.3 TSSOP16

Dim.	mm.			inch.		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.2			0.047
A1	0.05		0.15	0.002	0.004	0.006
A2	0.8	1	1.05	0.031	0.039	0.041
b	0.19		0.30	0.007		0.012
c	0.09		0.20	0.004		0.0079
D	4.9	5	5.1	0.193	0.197	0.201
E	6.2	6.4	6.6	0.244	0.252	0.260
E1	4.3	4.4	4.48	0.169	0.173	0.176
e		0.65 BSC			0.0256 BSC	
K	0°		8°	0°		8°
L	0.45	0.60	0.75	0.018	0.024	0.030

