

TC4503BP/BF

C²MOS DIGITAL INTEGRATED CIRCUIT
SILICON MONOLITHIC

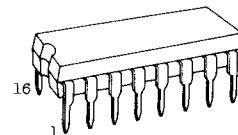
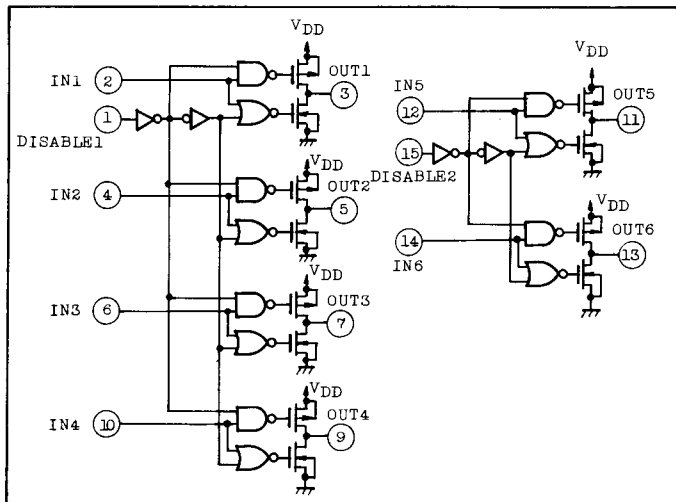
TC4503BP/TC4503BF HEX NON-INVERTING 3-STATE BUFFER

TC4503BP/BF contains six circuits of non-inverting buffers having three state output. Since DISABLE inputs to disable the outputs are provided separately, one common for four circuits and another common for other two circuits, this is suitable for controlling four bit data lines. Large output current enables to directly control one TTL input.

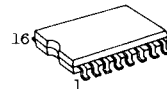
ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V _{DD}	V _{SS} -0.5 ~ V _{SS} +20	V
Input Voltage	V _{IN}	V _{SS} -0.5 ~ V _{DD} +0.5	V
Output Voltage	V _{OUT}	V _{SS} -0.5 ~ V _{DD} +0.5	V
DC Input Current	I _{IN}	±10	mA
Power Dissipation	P _D	300(DIP)/180(MFP)	mW
Operating Temperature Range	T _A	-40 ~ 85	°C
Storage Temperature Range	T _{stg}	-65 ~ 150	°C
Lead Temp./Time	T _{sol}	260°C • 10 sec	

CIRCUIT DIAGRAM

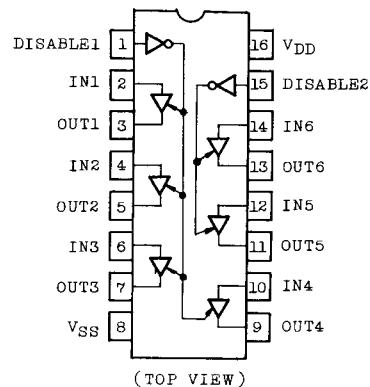


DIP16(3D16A-P)



MFP16(F16GC-P)

PIN ASSIGNMENT



TRUTH TABLE

DISABLE INPUT	INPUT	OUTPUT
L	L	L
L	H	H
H	*	HZ

* : Don't care

HZ: High Impedance

RECOMMENDED OPERATING CONDITIONS (V_{SS}=0V)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DC Supply Voltage	V _{DD}	3	-	18	V
Input Voltage	V _{IN}	0	-	V _{DD}	

STATIC ELECTRICAL CHARACTERISTICS (V_{SS}=0V)

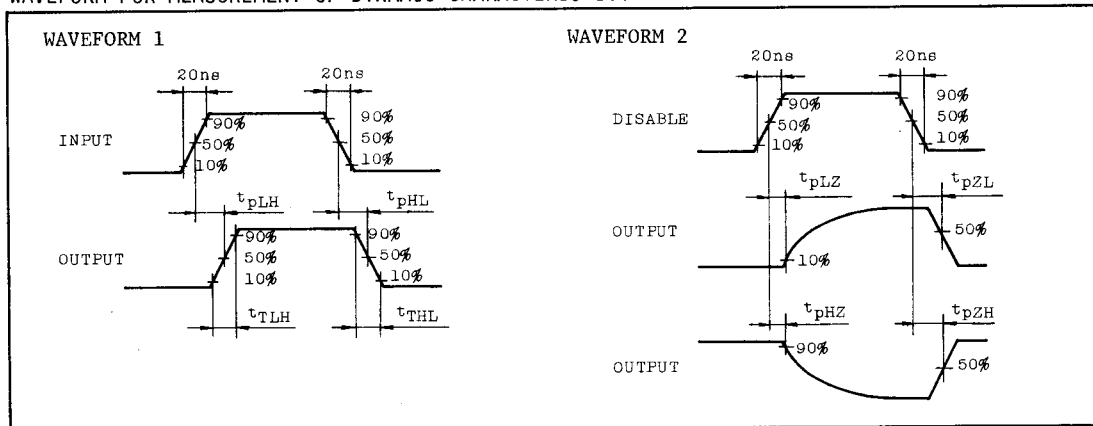
CHARACTERISTIC		SYMBOL	TEST CONDITION	V _{DD} (V)	-40°C		25°C			85°C		UNITS
					MIN.	MAX.	MIN.	TYP.	MAX.	MIN.	MAX.	
High-Level Output Voltage		V _{OH}	I _{OUT} < 1μA V _{IN} =V _{SS} , V _{DD}	5	4.95	-	4.95	5.00	-	4.95	-	V
				10	9.95	-	9.95	10.00	-	9.95	-	
				15	14.95	-	14.95	15.00	-	14.95	-	
Low-Level Output Voltage		V _{OL}	I _{OUT} < 1μA V _{IN} =V _{SS} , V _{DD}	5	-	0.05	-	0.00	0.05	-	0.05	V
				10	-	0.05	-	0.00	0.05	-	0.05	
				15	-	0.05	-	0.00	0.05	-	0.05	
Output High Current		I _{OH}	V _{OH} =4.6V	5	-1.16	-	-1.02	-2.4	-	-0.7	-	mA
			V _{OH} =2.5V	5	-5.7	-	-4.8	-10.0	-	-3.4	-	
			V _{OH} =9.5V	10	-3	-	-2.6	-5.5	-	-1.9	-	
			V _{OH} =13.5V	15	-8	-	-6.8	-20.0	-	-4.9	-	
			V _{IN} =V _{SS} , V _{DD}									
Output Low Current		I _{OL}	V _{OL} =0.4V	5	2.5	-	2.1	3.8	-	1.4	-	mA
			V _{OL} =0.5V	10	6.4	-	5.5	9.8	-	3.9	-	
			V _{OL} =1.5V	15	18.9	-	16.1	37.8	-	11.4	-	
			V _{IN} =V _{SS} , V _{DD}									
Input High Voltage		V _{IH}	V _{OUT} =0.5V, 4.5V	5	3.5	-	3.5	2.75	-	3.5	-	V
			V _{OUT} =1.0V, 9.0V	10	7.0	-	7.0	5.5	-	7.0	-	
			V _{OUT} =1.5V, 13.5V	15	11.0	-	11.0	8.25	-	11.0	-	
			I _{OUT} < 1μA									
Input Low Voltage		V _{IL}	V _{OUT} =0.5V, 4.5V	5	-	1.5	-	2.25	1.5	-	1.5	V
			V _{OUT} =1.0V, 9.0V	10	-	3.0	-	4.5	3.0	-	3.0	
			V _{OUT} =1.5V, 13.5V	15	-	4.0	-	6.75	4.0	-	4.0	
			I _{OUT} < 1μA									
Input Current	"H" Level	I _{IH}	V _{IH} =18V	18	-	0.1	-	10 ⁻⁵	0.1	-	1.0	μA
	"L" Level	I _{IL}	V _{IL} =0V	18	-	-0.1	-	-10 ⁻⁵	-0.1	-	-1.0	
3-State Output Leakage Current	"H" Level	I _{DH}	V _{OUT} =18V	18	-	0.4	-	10 ⁻⁴	0.4	-	12	
	"L" Level	I _{DL}	V _{OUT} =0V	18	-	-0.4	-	-10 ⁻⁴	-0.4	-	-12	
Quiescent Device Current		I _{DD}	V _{IN} =V _{DD} , V _{SS} *	5	-	1.0	-	0.002	1.0	-	30	μA
				10	-	2.0	-	0.004	2.0	-	60	
				15	-	4.0	-	0.008	4.0	-	120	

* All valid input combinations.

DYNAMIC ELECTRICAL CHARACTERISTICS (Ta=25°C, V_{SS}=0V, C_L=50pF)

CHARACTERISTIC	SYMBOL	TEST CONDITION	V _{DD} (V)	MIN.	TYP.	MAX.	UNITS
Output Transition Time (Low to High)	t _{TLH}		5 10 15	- - -	30 20 15	90 45 35	ns
Output Transition Time (High to Low)	t _{THL}		5 10 15	- - -	25 13 10	70 40 25	
Propagation Delay Time (IN - OUT)	t _{pLH}		5 10 15	- - -	45 25 20	150 70 50	
Propagation Delay Time (IN - OUT)	t _{pHL}		5 10 15	- - -	43 23 18	110 50 35	
Three State Disable Time (DISABLE - OUT)	t _{pHZ}	R _L =1kΩ	5 10 15	- - -	50 30 25	140 60 50	
Three State Disable Time (DISABLE - OUT)	t _{pLZ}	R _L =1kΩ	5 10 15	- - -	60 35 30	140 60 50	
Three State Disable Time (DISABLE - OUT)	t _{pZH}	R _L =1kΩ	5 10 15	- - -	65 35 30	130 50 40	
Three State Disable Time (DISABLE - OUT)	t _{pZL}	R _L =1kΩ	5 10 15	- - -	70 35 30	130 50 40	
Input Capacitance	C _{IN}			-	7.5	15	pF

WAVEFORM FOR MEASUREMENT OF DYNAMIC CHARACTERISTICS



This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.