

61E D ■ 9097248 0024241 326 ■ TOS2

TC4532BP

C²MOS DIGITAL INTEGRATED CIRCUIT
SILICON MONOLITHIC

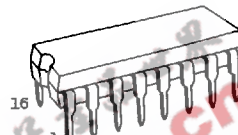
TOSHIBA (LOGIC/MEMORY)

TC4532BP 8-BIT PRIORITY ENCODER

TC4532BP is eight bit encoder which detects "H" level of the highest order among eight input signals and outputs the corresponding signal position in binary code.

The inputs are eight input signals of D0 through D7 and E_{IN}, and when E_{IN} is set to "L" level, the encode operation is inhibited making all the outputs at "L" level.

The encoded output appears on three signal lines Q0 through Q2 in binary. E_{OUT} and G_S are the outputs to indicate the operational mode of encoder and used when the number of bits is to be increased by cascade connection.



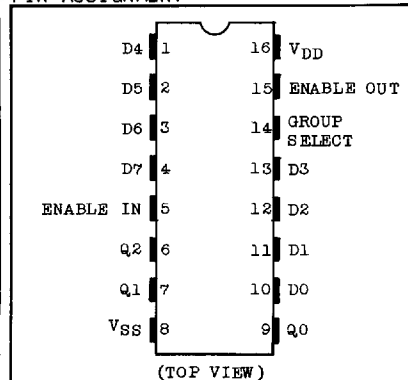
P(DIP16-P-300A)

Weight : 1.0g(Typ.)

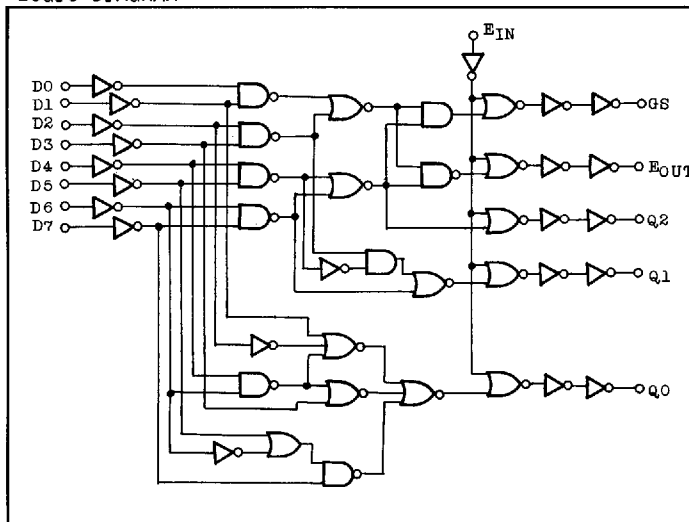
ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNITS
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	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	

PIN ASSIGNMENT



LOGIC DIAGRAM



TRUTH TABLE

INPUT										OUTPUT			
E _{IN}	D7	D6	D5	D4	D3	D2	D1	D0	G _S	Q2	Q1	Q0	E _{OUT}
L	*	*	*	*	*	*	*	*	L	L	L	L	L
H	L	L	L	L	L	L	L	L	L	L	L	L	H
H	H	*	*	*	*	*	*	*	H	H	H	H	L
H	L	H	*	*	*	*	*	*	H	H	H	L	L
H	L	L	H	*	*	*	*	*	H	H	L	H	L
H	L	L	L	H	*	*	*	*	H	H	L	L	L
H	L	L	L	L	H	*	*	*	H	L	H	H	L
H	L	L	L	L	L	H	*	*	H	L	H	L	L
H	L	L	L	L	L	L	H	*	H	L	L	H	L
H	L	L	L	L	L	L	L	H	H	L	L	L	L

* Don't Care

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TOSHIBA (LOGIC/MEMORY)

TC4532BP

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}	V

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

CHARACTERISTIC		SYMBOL	TEST CONDITIONS	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 10 15	4.95 9.95 14.95	- - -	4.95 9.95 14.95	5.00 10.00 15.00	- - -	4.95 9.95 14.95	- - -	V
Low-Level Output Voltage		V _{OL}	I _{OUT} <1μA V _{IN} =V _{SS} , V _{DD}	5 10 15	- - -	0.05 0.05 0.05	- - -	0.00 0.00 0.00	0.05 0.05 0.05	- - -	0.05 0.05 0.05	
Output High Current		I _{OH}	V _{OH} =4.6V V _{OH} =2.5V V _{OH} =9.5V V _{OH} =13.5V V _{IN} =V _{SS} , V _{DD}	5 5 10 15	-0.61 -2.5 -1.5 -4.0	- - - -	-0.51 -2.1 -1.3 -3.4	-1.0 -4.0 -2.2 -9.0	- - - -	-0.42 -1.7 -1.1 -2.8	- - - -	
Output Low Current		I _{OL}	V _{OL} =0.4V V _{OL} =0.5V V _{OL} =1.5V V _{IN} =V _{SS} , V _{DD}	5 10 15	0.61 1.5 4.0	- - -	0.51 1.3 3.4	1.5 3.8 15.0	- - -	0.42 1.1 2.8	- - -	
Input High Voltage		V _{IH}	V _{OUT} =0.5V, 4.5V V _{OUT} =1.0V, 9.0V V _{OUT} =1.5V, 13.5V I _{OUT} <1μA	5 10 15	3.5 7.0 11.0	- - -	3.5 7.0 11.0	2.75 5.5 8.25	- - -	3.5 7.0 11.0	- - -	V
Input Low Voltage		V _{IL}	V _{OUT} =0.5V, 4.5V V _{OUT} =1.0V, 9.0V V _{OUT} =1.5V, 13.5V I _{OUT} <1μA	5 10 15	- - -	1.5 3.0 4.0	- - -	2.25 4.5 6.75	1.5 3.0 4.0	- - -	1.5 3.0 4.0	
Input Current	"H" Level	I _{IH}	V _{IH} =18V	18	-	0.1	-	10 ⁻⁵	0.1	-	1.0	
	"L" Level	I _{IL}	V _{IL} =0V	18	-	-0.1	-	-10 ⁻⁵	-0.1	-	-1.0	
Quiescent Device Current		I _{DD}	V _{IN} =V _{SS} , V _{DD} *	5 10 15	- - -	5 10 20	- - -	0.005 0.010 0.015	5 10 20	- - -	150 300 600	μA

* All valid input combinations.

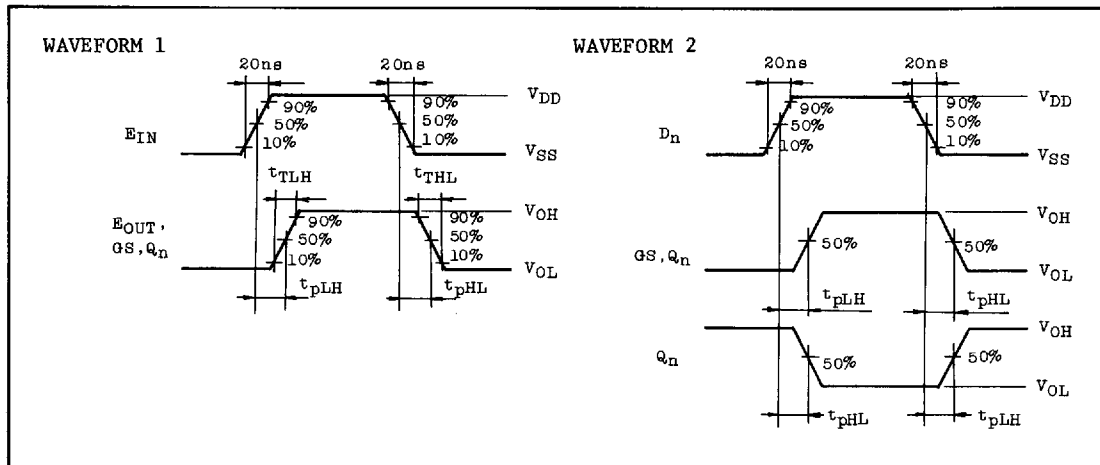
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TC4532BP TOSHIBA (LOGIC/MEMORY)

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

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	V _{DD} (V)	MIN.	TYP.	MAX.	UNITS
Output Transition Time (Low to High)	t _{TLH}		5 10 15	- - -	80 50 40	200 100 80	ns
Output Transition Time (High to Low)	t _{THL}		5 10 15	- - -	80 50 40	200 100 80	
Propagation Delay Time (E _{IN} - E _{OUT})	t _{pLH} t _{pHL}		5 10 15	- - -	140 60 45	280 120 90	
Propagation Delay Time (E _{IN} - GS)	t _{pLH} t _{pHL}		5 10 15	- - -	150 65 50	300 130 100	
Propagation Delay Time (E _{IN} - Q _n)	t _{pLH} t _{pHL}		5 10 15	- - -	150 60 45	340 170 125	
Propagation Delay Time (D _n - Q _n)	t _{pLH} t _{pHL}		5 10 15	- - -	270 90 65	540 220 160	
Propagation Delay Time (D _n - GS)	t _{pLH} t _{pHL}		5 10 15	- - -	200 90 70	400 180 140	
Input Capacitance	C _{IN}			-	5	7.5	pF

WAVEFORM FOR MEASUREMENT OF DYNAMIC CHARACTERISTICS



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TOSHIBA (LOGIC/MEMORY)

TC4532BP

APPLICATION CIRCUIT

Two TC4532B's Cascaded for 4-Bit Output

