

BRITISH STANDARDS INSTITUTION

2 PARK STREET, LONDON. W1A 2BS

Specification available from:- AS SHOWN IN PD 9002
AND CECC 00 200 AND

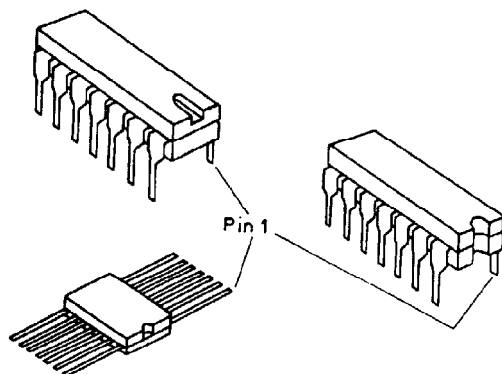
BS CECC 90102 - 022

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**ELECTRONIC COMPONENTS OF ASSESSED QUALITY
DETAIL SPECIFICATION IN ACCORDANCE WITH:**BS CECC 90 000 : 1976
BS CECC 90 100 : 1977**MANUFACTURERS TYPE NUMBER**54S86
64S86
74S86
84S86Outline not to scale: Isometric projection
Marking information see clause 1SEE PD 9002 AND CECC 00 200
For ordering information see
clause 1**QUADRUPLE 2-INPUT EXCLUSIVE
OR GATES**TYPICAL CONSTRUCTION
SILICON MONOLITHIC BIPOLAR
CAVITY AND NON-CAVITY
PACKAGESRefer to IEC 191-1-50a (type A50B)
Dual-in-Line (plastic or ceramic)
refer to Appendix A1.3
Flatpack (metal or ceramic)ASSESSMENT LEVELS
R, S, T, AND V1. Type description

1.1 Truth table

INPUTS		OUTPUT
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	L

H = High level
L = Low levelRefer to Qualified Products List PD 9002 and/or CECC 00 200
for details of manufacturers approved to this specification

1.2.3 Marking

Each integrated circuit shall bear the following markings:

- (1) Terminal identification
- (2) Type designation
- (3) Date code
- (4) Factory identification code (unless derived from trademark)
- (5) Manufacturers trade name or mark
- (6) Mark of conformity (unless a certificate of conformity is used)

1.3 Ordering information

Orders for these integrated circuits shall contain the following minimum information:

Manufacturers integrated circuit type designation, screening procedures and assessment levels as detailed to this CECC specification number.

(For details of screening procedures see Appendix A1.1).

2. Limiting conditions of use (not for inspection purposes)

2.1	Minimum and maximum continuous supply voltage	V_{CC}						-0,5V +7,0V
2.2	Minimum and maximum input voltages							
2.2.1	Minimum and maximum input voltage	V_I						-0,5V +5,5V
2.2.2	Maximum input voltage between multiple emitter transistor inputs	V_{II}						+5,5V
2.3	Minimum and maximum operating ambient temperatures	$T_{amb}(^{\circ}C)$	min.	-55	-40	0	-25	
			max.	+125	+85	+70	+85	
2.4	Minimum and maximum storage temperatures	$T_{stg}(^{\circ}C)$	min.	-65	(All types)			
			max.	+150				

3. Recommended operating conditions and associated characteristics (not for inspection purposes)

3.1 Recommended operating conditions

These apply over the operating ambient temperature range unless otherwise stated.

3.1 (contd)

Description	Symbol	Type	Value	Unit
Positive supply voltage range	V_{CC}	54S 64/74/84S	4,5 - 5,5 4,75 - 5,25	V V
Minimum value of High level input voltage	V_{IHB}	All types	2,0	V
Maximum value of High level input voltage	V_{IHA}	All types	5,5	V
Minimum value of Low level input voltage	V_{ILB}	All types	0	V
Maximum value of Low level input voltage	V_{ILA}	All types	0,8	V
Maximum value of Low level output current for each output	I_{OLA}	All types	20,0	mA
Maximum value of output current for each output at V_{OH}	I_{OHA}	All types	-1,0	mA
D.C. noise margin				
at Low level ($V_{ILA} - V_{OLA}$)	V_{NL}	All types	0,3	V
at High level ($V_{OHB} - V_{IHB}$)	V_{NH}	54S 64/74/84S	0,5 0,7	V V

3.2 Associated characteristics

3.2.1 Minimum and maximum values are given for the worst case operation over the ambient temperature range, except for those conditions marked with an asterisk (*)

	54S	64S	74S	84S	
T _{amb} min.	-55	-40	0	-25	°C
T _{amb} max.	+125	+85	+70	+85	
V _{CC} min.	4,5	4,75			V
V _{CC} max.	5,5	5,25			

3.2.2

Characteristics	Conditions	$V_{CC}(V)$	Symbol	Min.	Max.	Unit
Total supply current per package	$V_{IN} = 0V$ (1) No output load	V_{CC} max.	I_{CC}	-	75,0	mA
High level input current	$V_{IH(1)} = 5,5V$ $V_{IH(2)} = 2,7V$	V_{CC} max.	$I_{IH(1)}$	-	1,0	mA
		V_{CC} max.	$I_{IH(2)}$	-	50,0	μA
Low level input current	$V_{IN} = 0,5V$	V_{CC} max.	$-I_{IL}$	-	2,0	mA
Input clamping voltage	$-I_{IC} = 18,0mA$	V_{CC} min.	$-V_{IC}$	-	1,2	V
Output voltage 54S 64/74/84S All types	$I_{OH} = -1,0mA$ $I_{OH} = -1,0mA$ $I_{OL} = 20,0mA$ (2)	V_{CC} min.	V_{OH}	2,5	-	V
			V_{OH}	2,7	-	V
			V_{OL}	-	0,5	V
Output short circuit current	V_{IN} as required to give a High level output $V_O = 0V$ (3)	V_{CC} max.	$-I_{OS}$	40,0	100,0	mA
Propagation times All types	$T_{amb} = 25^{\circ}C$ test conditions as in Sub-group A5	5,0V				
High to Low level						
From A or B with other input Low			t_{PHL}	-	10,0	ns
From A or B with other input High			t_{PHL}	-	10,0	ns
Low to High level						
From A or B with other input Low			t_{PLH}	-	10,5	ns
From A or B with other input High			t_{PLH}	-	10,5	ns

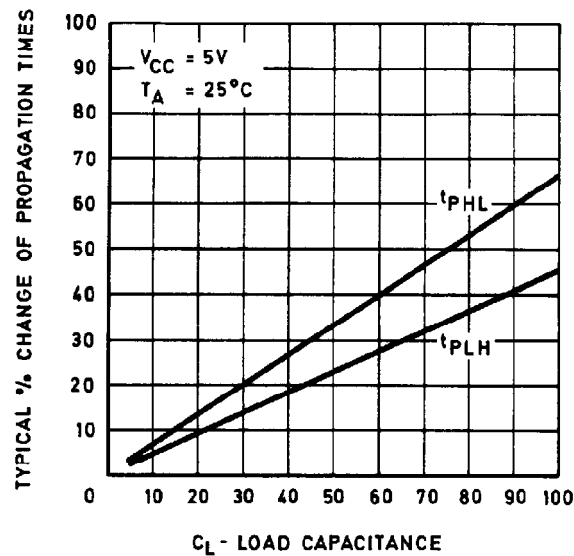
(1) To all inputs, (2) Fan out = 10,

(3) Only one output at a time, duration $t \leq 1s$

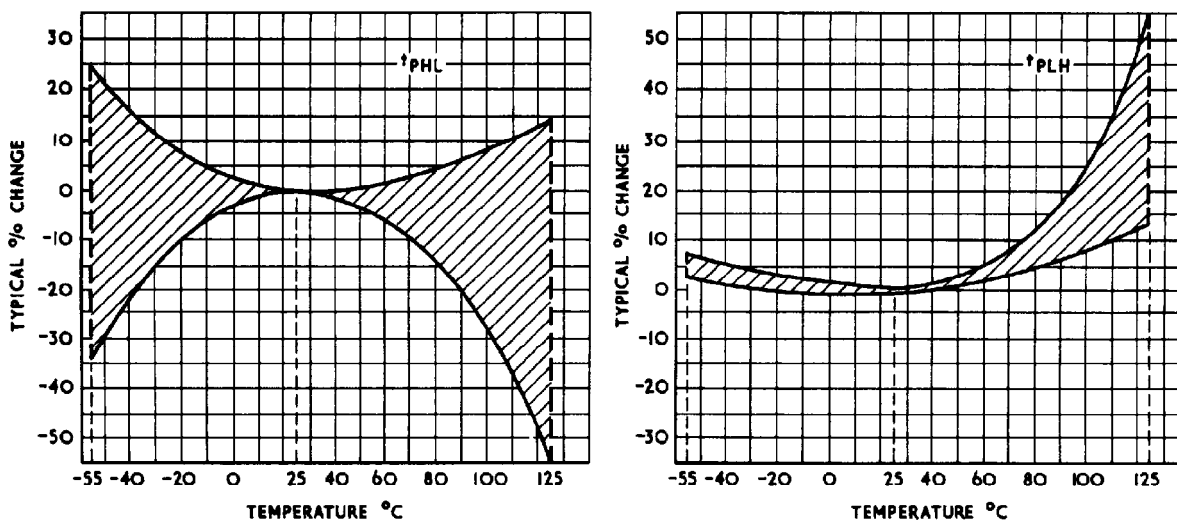
*See clauses 3.1 and 3.2.1 of this specification

3.3 Supplementary information

3.3.1 Change of typical propagation time with output loading



3.3.2 Variation of propagation time with temperature



3.3.3 Gates

Inputs of unused gates should be connected in such a way that the output is set to High level to ensure minimum power dissipation.

For Or gates unused inputs shall be connected to ground.