

BRITISH STANDARDS INSTITUTION, 2 PARK STREET, LONDON, W1A 2BS	Page 1 of 16	CECC 90102 - 015 ISSUE 1 NOVEMBER 1981
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH: BS CECC 90 000 BS CECC 90 100 and family specification for TTL Schottky-circuits (BS CECC 90102)	BS CECC 90102 - 015 ISSUE 1 NOVEMBER 1981	
Detail specification for Quad 2-input positive-And gates with open collector outputs TYPICAL CONSTRUCTION Silicon monolithic bipolar cavity and non-cavity packages		Device types: 54S09 64S09 74S09 84S09
Outline and dimensions Refer to IEC 191 1-50a type A 50 B Dual-in-Line (plastic or ceramic) refer to Appendix A1.3 Flatpack (metal or ceramic)		Assessment levels R, S, T, V

1. Type description

1.1 Truth table

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

H = High level

L = Low level

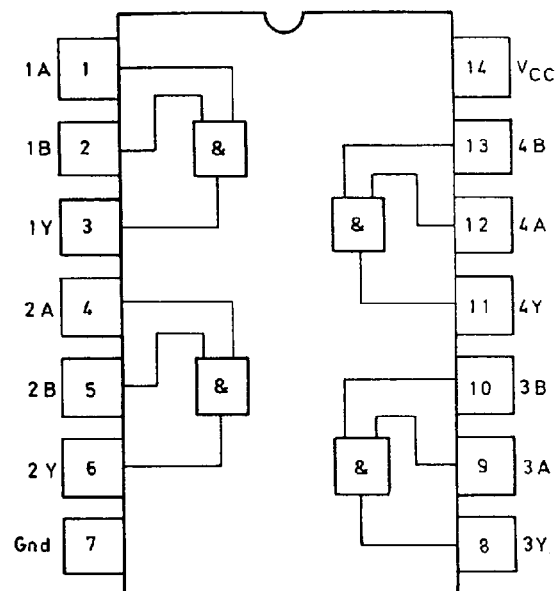
See relevant Qualified Products List for the availability
of components qualified to this detail specification

1.1.1 Boolean equation

$$Y = AB$$

1.2 Terminal identification, type designation and marking

1.2.1 Terminal identification



Quad 2-input positive-And gates with open collector outputs

1.2.2 Type designation

TEMPERATURE RANGE	PACKAGE		
	Ceramic Dual-in-Line	Plastic Dual-in-Line	Ceramic Flatpack
0 + 70	74S09J	N	W
-25 + 85	84S09J		
-40 + 85	64S09J		
-55 +125	54S09J		

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
				54S	64S	74S	84S
2.3	Minimum and maximum operating ambient temperatures	$T_{amb}(^{\circ}C)$	min. max.	-55 +125	-40 +85	0 +70	-25 +85
2.4	Minimum and maximum storage temperatures	$T_{stg}(^{\circ}C)$	min. max.	-65 +150	(All types)		

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.

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
Applied off-level output voltage	V_{OZA}	All types	5,5	V
Maximum value of Low level output current for each output	I_{OLA}	All types	20,0	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
Maximum applied off-level voltage	V_{OZA}	All types	5,5	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 (*)

3.2.1 (contd)

	54S	64S	74S	84S	
T_{amb} min.	-55	-40	0	-25	$^{\circ}C$
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 at High level	V_{IN} to give High level output	V_{CC} max.	I_{CCH}	-	32,0	mA
Total supply current at Low level	V_{IN} to give Low level output	V_{CC} max.	I_{CCL}	-	57,0	mA
High level input current	$V_{IH(1)} = 5,5V$	V_{CC} max.	$I_{IH(1)}$	-	1,0	mA
	$V_{IH(2)} = 2,7V$	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	$I_{OL} = 20,0mA$ (1)	V_{CC} min.	V_{OL}	-	0,5	V
Propagation times All types	$T_{amb} = 25^{\circ}C$ test conditions as in Sub-group A5	5,0V				
High to Low level			t_{PHL}	-	10,0	ns
Low to High level			t_{PLH}	-	10,0	ns

(1) Fan out = 10

*See Clauses 3.1 and 3.2.1 of this specification