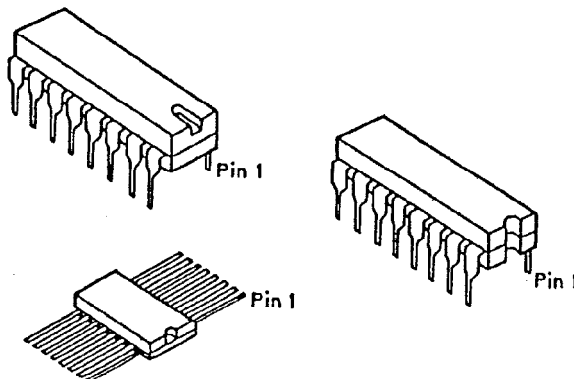


BRITISH STANDARDS INSTITUTION 2 PARK STREET, LONDON. W1A 2BS	BS CECC 90102 - 051
Specification available from:- AS SHOWN IN PD 9002 AND CECC 00 200 AND	ISSUE 1 OCTOBER 1982
	
	Page 1 of 19 pages
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH: BS CECC 90 000 : 1976 BS CECC 90 100 : 1977	MANUFACTURERS TYPE NUMBER 54S139 64S139 74S139 84S139
Outline not to scale: Isometric projection Marking information see clause 1	SEE PD 9002 AND CECC 00 200 For ordering information see clause 1
	DUAL 2-LINE TO 4-LINE DECODERS/DEMULPLEXERS
Refer to IEC 191-1-50a (type A50C) Dual-in-Line (plastic or ceramic) refer to Appendix A1.3 Flatpack (metal or ceramic)	TYPICAL CONSTRUCTION SILICON MONOLITHIC BIPOLAR CAVITY AND NON- CAVITY PACKAGES
	ASSESSMENT LEVELS R, S, T AND V

1. Type description
 - 1.1 Truth table (see page 2)

Refer to Qualified Products List PD 9002 and/or CECC 00 200 for details of manufacturers approved to this specification

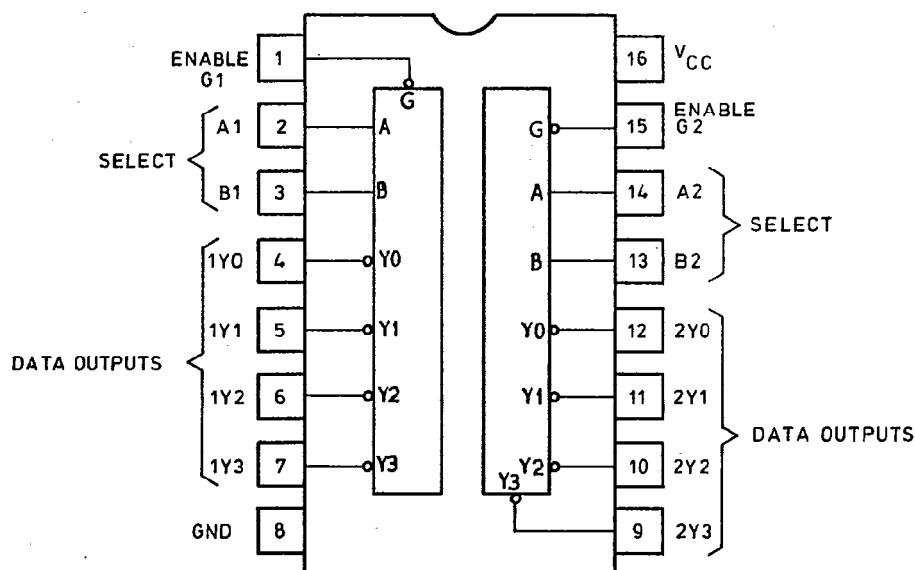
1.1 Truth table (contd)

INPUTS			OUTPUTS			
ENABLE	SELECT					
Q	B	A	Y ₀	Y ₁	Y ₂	Y ₃
H	X	X	H	H	H	H
L	L	L	L	H	H	H
L	L	H	H	L	H	H
L	H	L	H	H	L	H
L	H	H	H	H	H	L

H = High level
 L = Low level
 X = Level irrelevant

1.2 Terminal identification, type designation and marking

1.2.1 Terminal identification



Dual 2-line to 4-line decoders/demultiplexers



1.2.2 Type designation

TEMPERATURE RANGE	PACKAGE		
	Ceramic Dual-in-Line	Plastic Dual-in-Line	Ceramic Flatpack
0 + 70	74S139J	N	W
-25 + 85	84S139J		
-40 + 85	64S139J		
-55 +125	54S139J		

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	-0,3	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 (*)

3.2.1 (contd)

	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	$V_{IN} = 4,5V$ to All inputs Outputs enabled and open	V_{CC} max.	I_{CC}	-	90,0	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 $I_{OUT} = 1,0mA$	V_{CC} min.	V_{OH}	2,5	-	V
	64/74/84S $I_{OUT} = 1,0mA$		V_{OH}	2,7	-	V
	All types $I_{OUT} = 20,0mA$ (1)		V_{OL}	-	0,5	V
Output short circuit current	V_{IN} as required to give High output $V_O = 0V$ (2)	V_{CC} max.	$-I_{OS}$	40,0	100,0	mA

(1) Fan out = 10

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

3.2.2 (contd)

Characteristics	Conditions	$V_{CC}(V)$	Symbol	Min.	Max.	Unit
Propagation times All types	$T_{amb} = 25^{\circ}C^{*}$ test conditions as in Sub-group A5	5,0V				
High to Low level						
Binary select inputs to any output						
Non inverting inputs	2 levels of delay		t_{PHL}	-	10,0	ns
Inverting inputs	3 levels of delay		t_{PHL}	-	12,0	ns
Enable inputs to any output						
Non inverting inputs	2 levels of delay		t_{PHL}	-	10,0	ns
Low to High level						
Binary select inputs to any output						
Non inverting inputs	2 levels of delay		t_{PLH}	-	7,5	ns
Inverting inputs	3 levels of delay		t_{PLH}	-	12,0	ns
Enable inputs to any output						
Non inverting inputs	2 levels of details		t_{PLH}	-	8,0	ns

*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

