

NEDERLANDS ELEKTROTECHNISCH
COMITE
POSTBOX 5059
2600 GB DELFT

This specification is also available from
Nederlandse Philips Bedrijven B.V.

CECC 90 104-039



ISSUE 3

Page 1

Total number of pages: 14

ELECTRONIC COMPONENTS OF ASSESSED
QUALITY IN ACCORDANCE WITH:

GS: CECC 90 000 Issue 3.
SS: CECC 90 100 Issue 3.
FS: CECC 90 104 Issue 2.

Detail Spec: NL-CECC 90 104-039

Issue: 3

Issued: December 1989

OUTLINE AND DIMENSIONS:

IEC 191-2 | 050 G09/A76 G1

TERMINAL CONNECTIONS:

See item 1.4 of this specification

DETAIL SPECIFICATION FOR
DIGITAL INTEGRATED CIRCUITS
IN ACCORDANCE WITH FS 90 104

HEC/HEF4051B

8-channel analogue
multiplexer/demultiplexer

TYPICAL CONSTRUCTION:

Silicon monolithic local oxidation
CMOS integrated circuit, cavity/non-
cavity packages.

CAUTION: STATIC SENSITIVE DEVICE

ASSESSMENT LEVELS: P, Y, L

REMARKS

Supply voltage (with respect to V_{DD}) $V_{EE} = -18\text{ V to } +0,5\text{ V}$.

Information about manufacturers who have components qualified to this detail specification is
available in the current CECC 00 200: Qualified Products List.



Documents

Document Sharing Hub

Nederlands Elektrotechnisch Comité Postbox 5059 2600 GB Delft	Page 2	CECC 90 104-039
This specification is also available from Nederlandse Philips Bedrijven B.V.	of 14	ISSUE 3

1 TYPE DESCRIPTION

1.1 Function

The HEC/HEF4051B are 8-channel analogue multiplexers/demultiplexers with three address inputs (A_0 to A_2), an active LOW enable input ($\bar{E}$), eight independent inputs/outputs (Y_0 to Y_7) and a common input/output (Z).

Both devices contain eight bidirectional analogue switches, each switch with one side connected to an independent input/output (Y_0 to Y_7) and the other side connected to a common input/output (Z).

With $\bar{E}$ LOW, one of the eight switches is selected (low impedance ON-state) by A_0 to A_2 . With $\bar{E}$ HIGH, all switches are in the high impedance OFF-state, independent of A_0 to A_2 .

V_{DD} and V_{SS} are the supply voltage connections for the digital control inputs (A_0 to A_2 , and $\bar{E}$).

The V_{DD} to V_{SS} range is 3 to 15 V. The analogue inputs/outputs (Y_0 to Y_7 , and Z) can swing between V_{DD} as a positive limit and V_{EE} as a negative limit. $V_{DD}-V_{EE}$ may not exceed 15 V.

For operation as a digital multiplexer/demultiplexer, V_{EE} is connected to V_{SS} (typically ground).

1.1.1 Function table

inputs				channel ON
$\bar{E}$	A_2	A_1	A_0	
L	L	L	L	Y_0-Z
L	L	L	H	Y_1-Z
L	L	H	L	Y_2-Z
L	L	H	H	Y_3-Z
L	H	L	L	Y_4-Z
L	H	L	H	Y_5-Z
L	H	H	L	Y_6-Z
L	H	H	H	Y_7-Z
H	X	X	X	none

H = HIGH state (the more positive voltage)

L = LOW state (the less positive voltage)

X = state is immaterial



Nederlands Elektrotechnisch Comité
Postbox 5059
2600 GB Delft

This specification is also available from
Nederlandse Philips Bedrijven B.V.

Page 3

CECC 90 104-039

of 14

ISSUE 3

1.1.2 Functional diagram

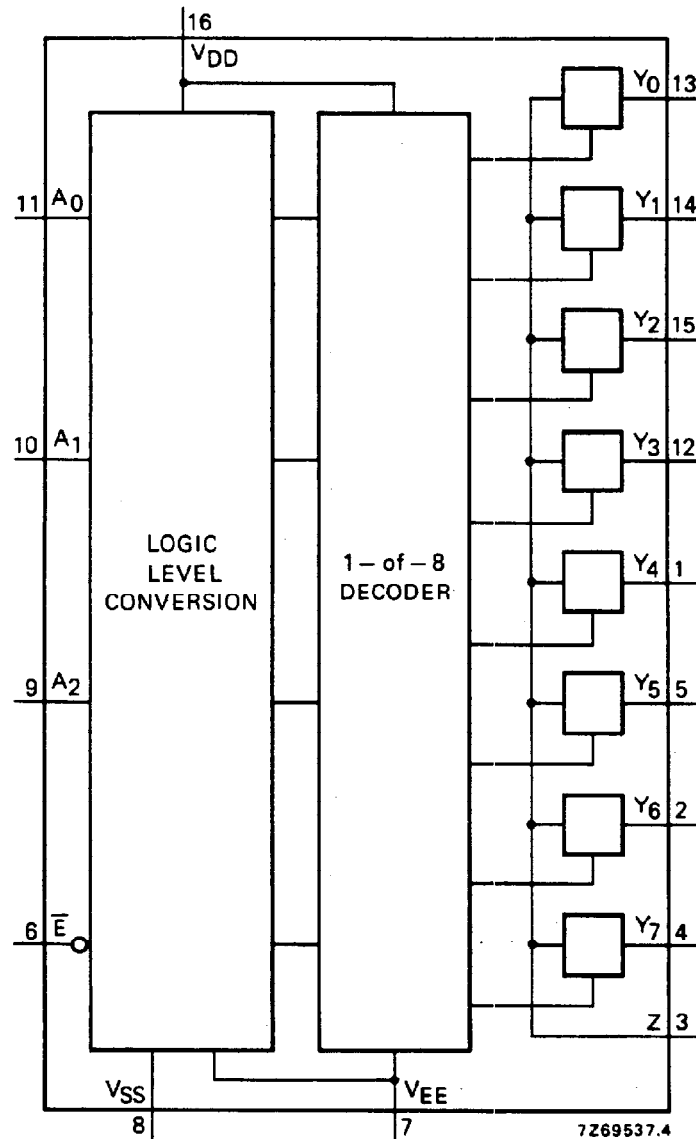


Fig. 1 Functional diagram.

Nederlands Elektrotechnisch Comité Postbox 5059 2600 GB Delft This specification is also available from Nederlandse Philips Bedrijven B.V.	Page 4 of 14	CECC 90 104-039 ISSUE 3
--	----------------------------	---------------------------------------

1.1.3 Pinning information

Y₀ to Y₇ independent inputs/outputs
A₀ to A₂ address inputs
 $\bar{E}$ enable input (active LOW)
Z common input/output

1.2 Schematic diagram

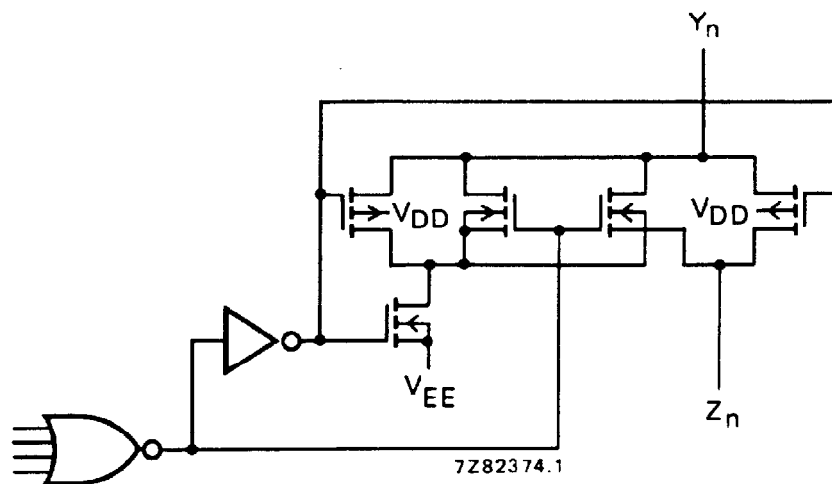


Fig. 2 Schematic diagram (one switch).

Nederlands Elektrotechnisch Comité
Postbox 5059
2600 GB Delft

This specification is also available from
Nederlandse Philips Bedrijven B.V.

Page 5

CECC 90 104-039

of 14

ISSUE 3

1.3 Logic diagram

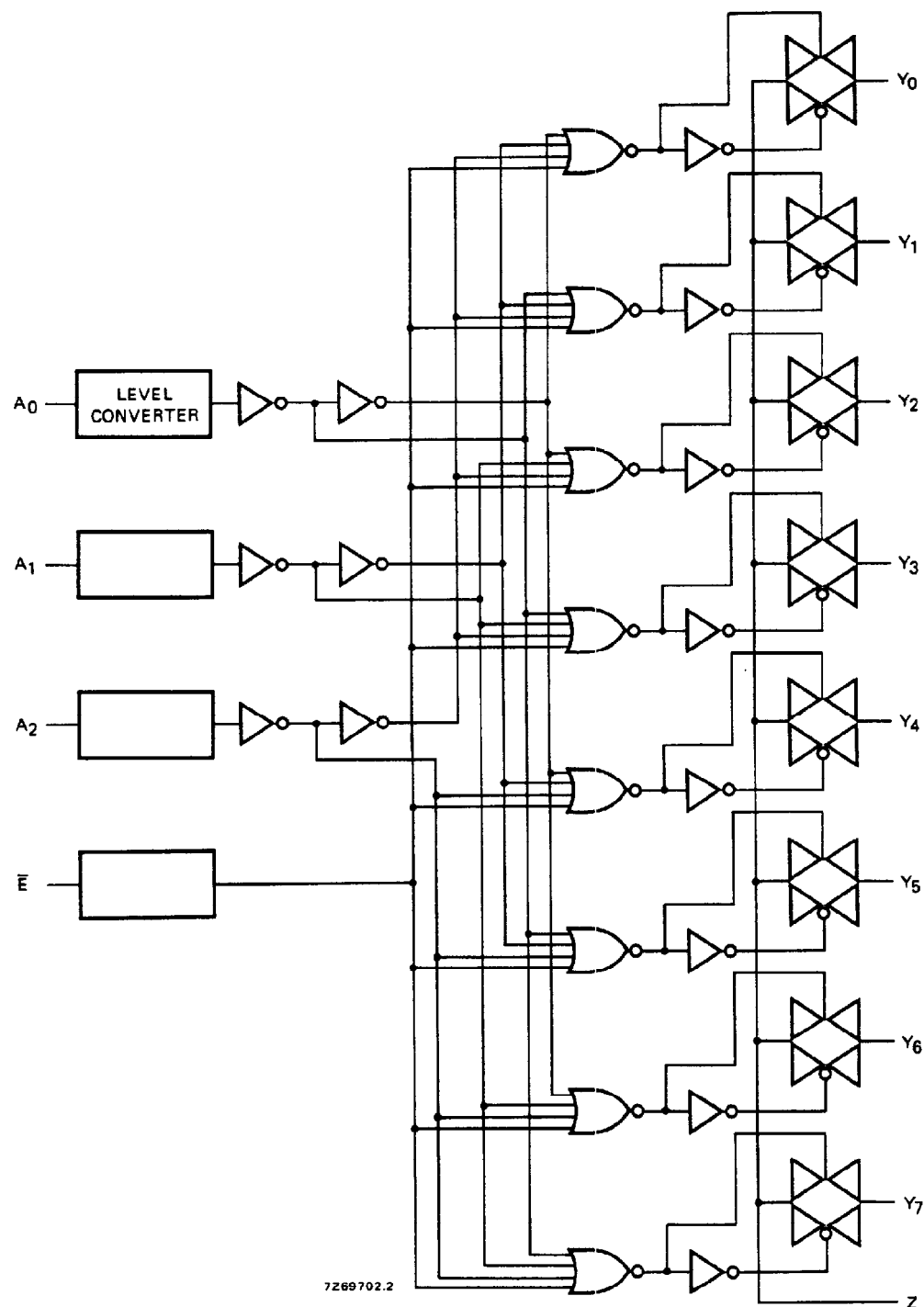


Fig. 3 Logic diagram.