

NEDERLANDS ELEKTROTECHNISCH
COMITE
POSTBOX 5059
2600 GB DELFT

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

CECC 90 104-041



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 90 104-041

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/HEF4053B

Triple 2-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}) $V_{EE} = -18$ to $+0,5$ 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 This specification is also available from Nederlandse Philips Bedrijven B.V.	Page 2 of 14	CECC 90 104-041 ISSUE 3
--	-------------------------	------------------------------------

1 TYPE DESCRIPTION

1.1 Function

The HEC/HEF4053B are triple 2-channel analogue multiplexers/demultiplexers with a common enable input ($\bar{E}$). Each multiplexer/demultiplexer has two independent inputs/outputs (Y_0 and Y_1), a common input/output (Z), and select inputs (S_n). Each also contains two-bidirectional analogue switches, each with one side connected to an independent input/output (Y_0 and Y_1) and the other side connected to a common input/output (Z).

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

V_{DD} and V_{SS} are the supply voltage connections for the digital control inputs (S_A to S_C and $\bar{E}$). The V_{DD} to V_{SS} range is 3 to 15 V. The analogue inputs/outputs (Y_0 , Y_1 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
$\bar{E}$	S_n	
L	L	$Y_{0n}-Z_n$
L	H	$Y_{1n}-Z_n$
H	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 90 104-041

of 14

ISSUE 3

1.1.2 Functional diagram

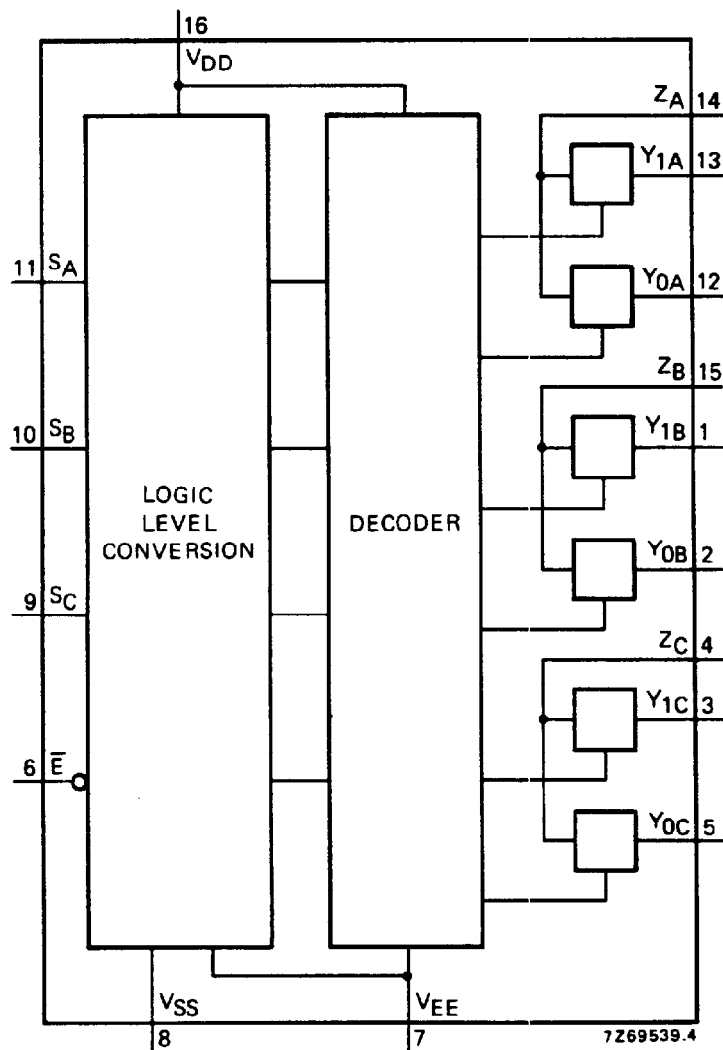


Fig. 1 Functional diagram.

Nederlands Elektrotechnisch Comité Postbox 5059 2600 GB Delft This specification is also available from Nederlandse Philips Bedrijven B.V.	Page 4 of 14	CECC 90 104-041 ISSUE 3
--	----------------------------	---------------------------------------

1.1.3 Pinning information

Y_{0A} to Y_{0C}	independent inputs/outputs
Y_{1A} to Y_{1C}	independent inputs/outputs
S_A to S_C	select inputs
$\bar{E}$	enable input (active LOW)
Z_A to Z_C	common inputs/outputs

1.2 Schematic diagram

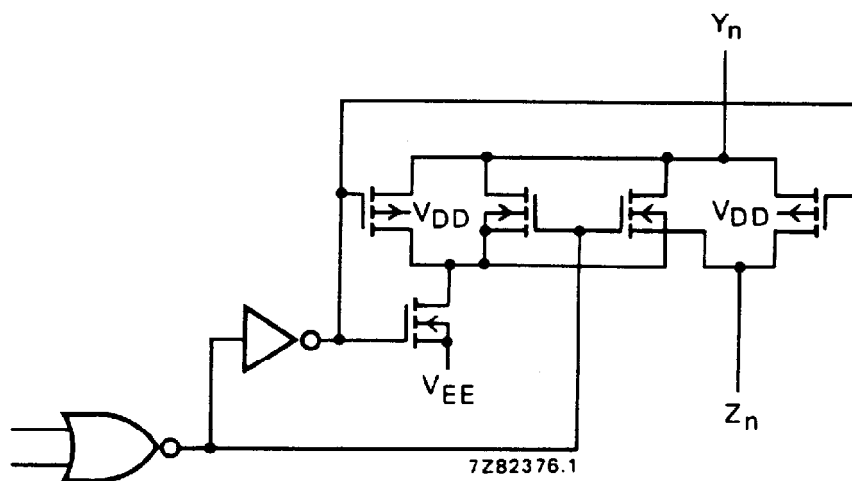


Fig. 2 Schematic diagram (one switch).

Nederlands Elektrotechnisch Comité
Postbox 5059
2600 GB Delft

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

Page 5

CECC 90 104-041

of 14

ISSUE 3

1.3 Logic diagram

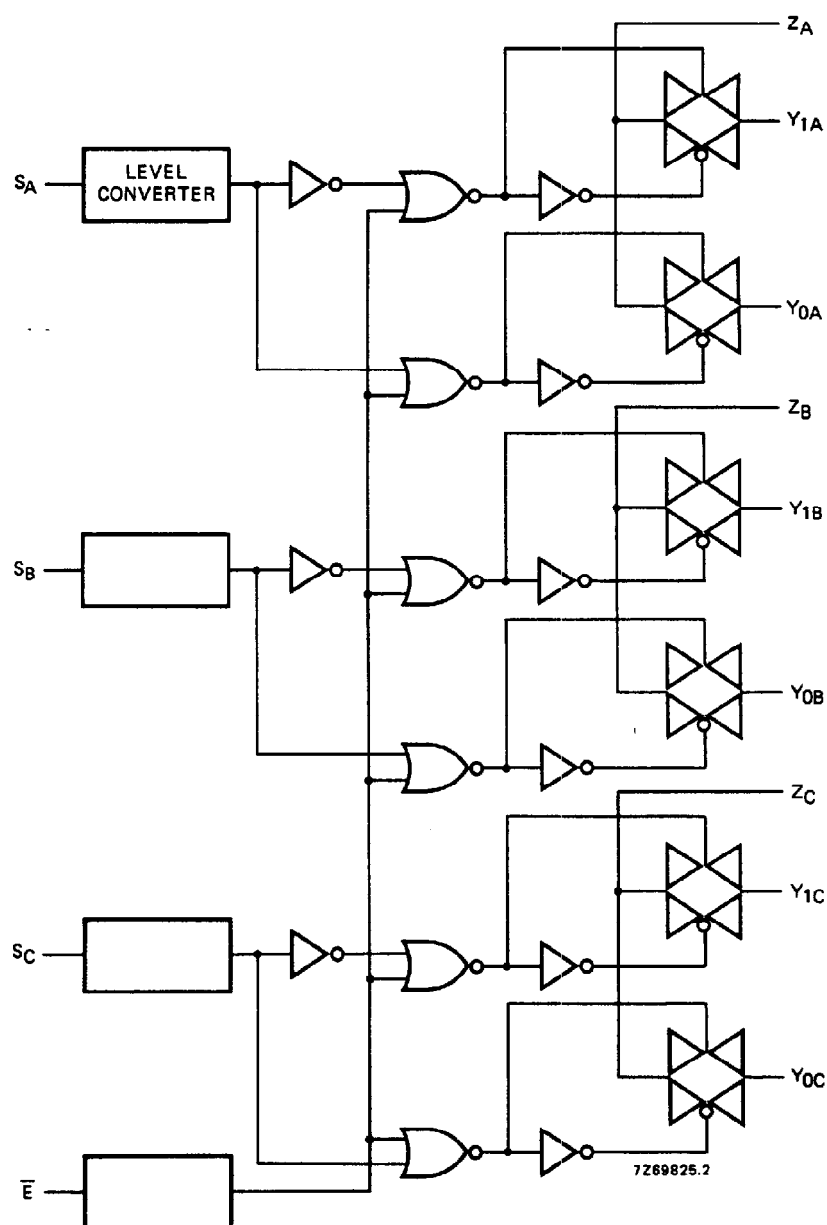


Fig. 3 Logic diagram.