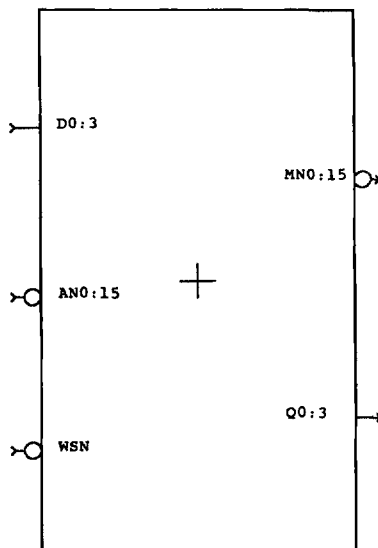GFS2020A   16 X 4 CAM WITHOUT MASK

GENERAL DESCRIPTION:

THE GFS2020A MEGAFUNCTION IS A 16-WORD BY 4-BIT CONTENT ADDRESSABLE MEMORY (CAM).
THIS MEGAFUNCTION IS FUNCTIONALLY IDENTICAL TO THE FAIRCHILD 100142 EXCEPT THAT
IT HAS SIXTEEN WORDS INSTEAD OF FOUR AND IT HAS NO MASK FUNCTION. FOR A DETAILED
FUNCTIONAL DESCRIPTION, SEE THE FAIRCHILD DATA BOOK.

PIN DIAGRAM:

GFS2020A

- GATES USED – 578

- AREA USED – 610 GATE
  LOCATIONS

- LL7000 SERIES COMPATIBLE

- LSA2000 SERIES COMPATIBLE

DO:3

MN0:15

AN0:15

Q0:3

WSN

INPUT LOADING: (LOADING IN TRANSISTOR PAIRS)

DO:3 – 4   AN0:15 – 2   WSN – 4

OUTPUT DRIVE: (DRIVE IN (#P,#N))

MN0:15 – (1,0.25)   Q0:3 – (1,1)

NDL SYNTAX:

Z(MN0,MN1,MN2,MN3,MN4,MN5,MN6,MN7,MN8,MN9,MN10,MN11,MN12,MN13,MN14,MN15,
Q0,Q1,Q2,Q3)

=GFS2020A (D0,D1,D2,D3,AN0,AN1,AN2,AN3,AN4,AN5,AN6,AN7,AN8,AN9,AN10,AN11,AN12,
AN13,AN14,AN15,WSN)$

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FUNCTIONAL INFORMATION:

EACH WORD LOCATION OF THE GFS2020A MEGAFUNCTION HAS ITS OWN ACTIVE-LOW
ADDRESS SELECT LINE. IN THE READ MODE, DATA FROM THE ADDRESSED LOCATION
APPEARS AT THE DATA OUTPUT (Q0:3). IN THE WRITE MODE, WHEN THE WRITE STROBE
(WSN) IS LOW, DATA IS STORED IN THE SELECTED LOCATION. MATCH COMPARISONS
ARE ALWAYS MADE BETWEEN INPUT DATA AND ALL THE WORDS IN THE CAM. NO CONTROL
SIGNAL IS REQUIRED FOR THE MATCH FUNCTION. IF A MATCH COMPARE RESULTS IN A
MATCH, THE MATCH OUTPUT (MN0:15) GOES LOW.

AC CHARACTERISTICS:

PROPAGATION DELAY*:

INPUT \ OUTPUT	Q0:3 NS	MN0:15 NS
AN0:15	7.7	12.2
D0:3	13.3	8.3
WSN	15.6	12.8

* 7K NOMINAL

SET—UP AND HOLD TIMES*:

FROM INPUT	SET—UP TIME NS	HOLD TIME NS
AN0:15	0	5.4
D0:3	1.3	1.8

* MINIMUM WSN WIDTH: 5.0 NS