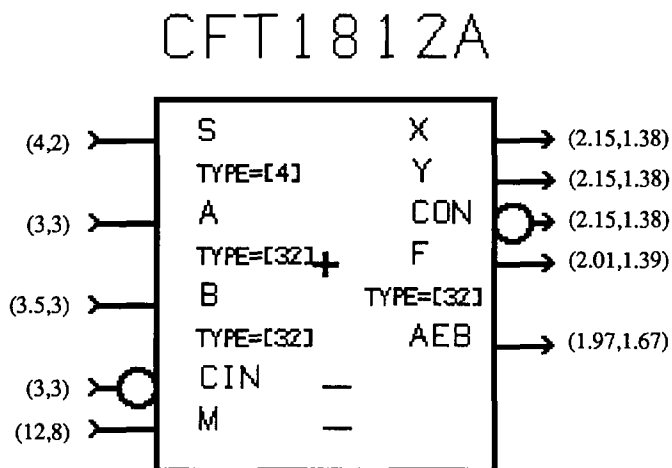


**GENERAL DESCRIPTION: 32-BIT 74181 TYPE ALU, USING CLA**

CFT1812A is logically identical to the TI74181, except it operates on two 32-bit words instead of two 4-bit words. The CFT1812A Arithmetic Logic Unit (ALU) performs 32 logical and 32 binary arithmetic operations on two 32-bit words (a31:0 and b31:0). These operations are selected by the four function-select lines (s3, s2, s1, s0) and the M input signal. For a detailed functional description, see the TI data book.

**PIN CONNECTION DIAGRAM:****FEATURES:**

- Fun lookahead for high-speed operations
- Arithmetic operating modes: Addition, Subtraction, Shift operand A one position, Magnitude comparison operations, plus twelve other arithmetic operations
- Logic function modes: Exclusive-OR, Comparator, AND, NAND, OR, NOR, plus ten other logic operations

**EQUIVALENT USED GATES: 1089 GATES**  
(for rough area estimates)

**THIS MEGAFUNCTION CONSISTS OF :**  
1089 soft-coded gates.

**POWER: NOT AVAILABLE.**

**FAULT COVERAGE(%): 100%**

This megafunction was designed to be 100% functionally compatible as specified in the vendor's data book. However, LSI LOGIC makes no warranty that this megafunction behaves identically to the standard part. It is the user's responsibility to assure that the megafunction operates correctly in his/her ASIC design and meets desired system requirements.

## PIN DESCRIPTION:

S3:0      FUNCTION SELECT LINES.  
A31:0     A OPERAND.  
B31:0     B OPERAND.  
CIN       CARRY-IN.  
M         MODE SELECT LINE.  
X         CARRY PROPAGATE OUTPUT.  
Y         CARRY GENERATE OUTPUT.  
CON       CARRY-OUT.  
F31:0     FUNCTION OUTPUTS.  
AEB       A OPERAND EQUALS B OPERAND.

## AC CHARACTERISTICS:

(Nominal case, output loading is 2, delay predicted by LPACE)

From	To	10K Typical Delay (ns)	LCA100K Typ. Delay (ns)
anyA	AEB	20.4	14.1
anyB	AEB	21.2	14.5
anyS	AEB	22.0	15
CIN	AEB	13.6	10.7
ARITHMETIC OPERATION			
anyA	CON	11.7	7.6
anyA	F	16.8	11.1
anyA	X	10.3	6.2
anyA	Y	12.1	7.7
anyB	CON	12.4	8
anyB	F	17.5	11.5
anyB	X	11.0	6.7
anyB	Y	12.7	8.2
anyS	CON	13.2	8.5
anyS	F	18.3	12

CFT1812A

ALU

CFT1812A

anyS	X	11.8	7.1
anyS	Y	13.4	8.7
CIN	CON	4.1	3
CIN	F	10.0	7.1
M	F	5.7	4.6