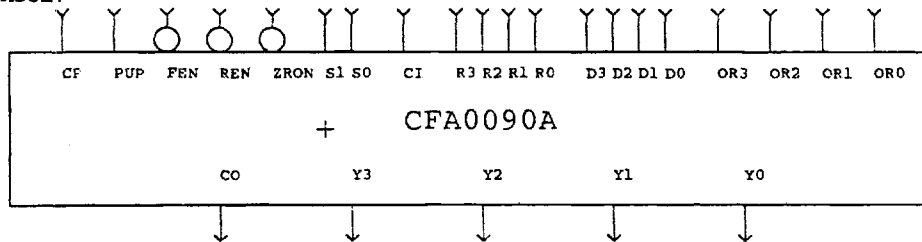


CFA0090A 4-bit Microprogram Sequence

FEATURES: \*Directly cascadable  
 \*4x4 stack with push pop control  
 \*Zero input to keep outputs at low  
 \*Individual OR input for each bit for branching

DESCRIPTION: CFA0090A is a 4-bit wide address controller which arranges in sequence a series of micro-instructions. It is designed to be fully compatible with the AM2909 except for the absence of the output enable control, which can be easily implemented by adding a tristate buffer to each Y output.

LOGIC SYMBOL:



PIN DESCRIPTION:

CP	CLOCK INPUT TO THE AR AND UPC REGISTER AND PUSH-POP STACK
PUP FEN	CONTROL LINES FOR PUSH/POP STACK
REN	ENABLE LINE FOR INTERNAL ADDRESS REGISTER
ZRON	LOGIC 'AND' INPUT ON THE OUTPUT LINES
S1, S0	CONTROL LINES FOR ADDRESS SOURCE SELECTION
CI	CARRY-IN TO THE INCREMENTER
R3:0	INPUTS TO THE INTERNAL ADDRESS REGISTER
D3:0	DIRECT INPUTS TO MULTIPLEXER
OR3:0	LOGIC 'OR' INPUTS ON EACH ADDRESS OUTPUT LINE
CO	CARRY OUT FROM THE INCREMENTER
Y3:0	ADDRESS OUTPUTS FROM GFA0110A (ADDRESS INPUT TO CONTROL MEMORY)

INPUTS (LOADING IN TRANSISTOR PAIRS):

CP(24), PUP(22), FEN(3), REN(2), ZRON(4), S1(4), S0(3), CI(10),  
 R3(1), R2(1), R1(1), R0(1), D3(4.5), D2(4.5), D1(4.5), D0(4.5)  
 OR3(1), OR2(1), OR1(1), OR0(1)

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

CO(2,2), Y3(2,2), Y2(2,2), Y1(2,2), Y0(2,2)

GATE COUNT:

GATE USED = 366  
 AREA USED = 375