Digital Component: C430

Product Description

The C430 Digital Component is a Gate function customizable to be OR or AND with inverting options on all pins. Combine the C430 component with other Power Components to create a custom-defined, AnDAPT AmP on-demand power management device.

Features

- OR or AND, 6 inputs
- Inverting options on all pins

Block Diagram

Figure 1 provides a block diagram of the C430 component which can be integrated with system power rails on the AmP device for additional logic and state machine solutions.

Figure 1a. C430 block diagram configured as OR

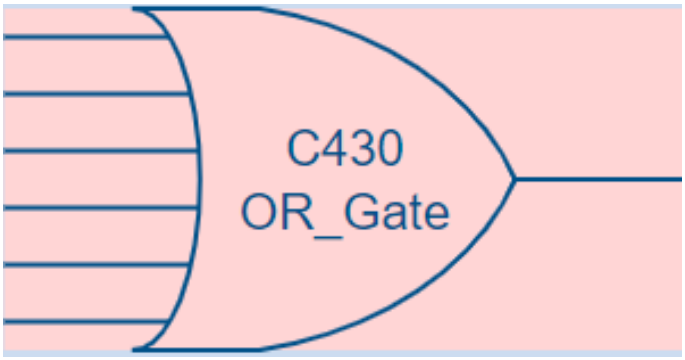
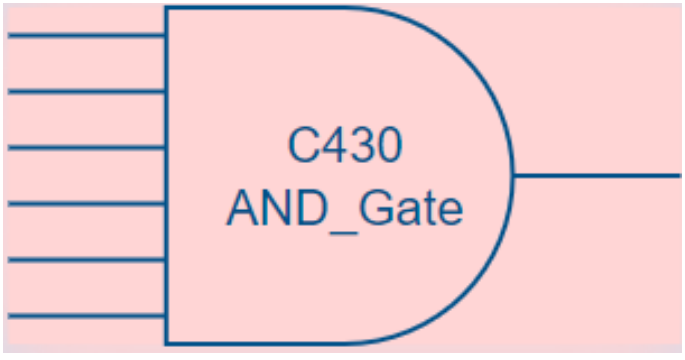


Figure 2b. C430 block diagram configured as AND



Product Detail

The C430 component provides customizable features described in detailed functionality Verilog Code below.

Verilog Code

```
module C430_Gate_B_1_0 (input F1, F2, F3, F4, F5, F6,
                        output F);

parameter OR_gate = 1'b1;
parameter OUT_INV = 1'b0;
parameter F1_INV = 1'b0;
parameter F2_INV = 1'b0;
parameter F3_INV = 1'b0;
parameter F4_INV = 1'b0;
parameter F5_INV = 1'b0;
parameter F6_INV = 1'b0;

parameter F1_DEL = 1'b0;
parameter F2_DEL = 1'b0;
parameter F3_DEL = 1'b0;
parameter F4_DEL = 1'b0;
parameter F5_DEL = 1'b0;
parameter F6_DEL = 1'b0;

assign F = OR_gate ^ OUT_INV ^ (
   ((OR_gate ^ F1_INV ^ F1) | F1_DEL )  &
   ((OR_gate ^ F2_INV ^ F2) | F2_DEL )  &
   ((OR_gate ^ F3_INV ^ F3) | F3_DEL )  &
   ((OR_gate ^ F4_INV ^ F4) | F4_DEL )  &
   ((OR_gate ^ F5_INV ^ F5) | F5_DEL )  &
   ((OR_gate ^ F6_INV ^ F6) | F6_DEL )          ) ;

endmodule
```