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/* File name SCLib.yal */

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/* */
/* Library: SCLib.yal */
/* */
/* Technology: Standard cell, 2-metal routing. */
/* */
/* Design rules: Metal width, 4u, both levels. */
/* Via size = 4u. */
/* Via oversize = 1u */
/* Metal spacing = 5u (both levels). */
/* */
/* Routing grid: 10u on both levels. Horizontally and */
/* vertically adjacent vias NOT allowed, */
/* but diagonally adjacent vias OK. */
/* */
/* Cell characteristics: */
/* Cell placements can abut, but not */
/* overlap. The legal orientations for */
/* internal cell placements are normal */
/* (RFLNONE ROT0) and reflected about Y */
/* (RFLY ROT0). */
/* */
/* Over-cell feedthru paths are provided */
/* in the cell definitions. You should */
/* indicate in your results whether or */
/* not your system can make use of them. */
/* */
/* Feedthrus external to cells must be */
/* centered at least 5u from the near- */
/* cell boundary. A feedthru cell, */
/* which can be abutted to cells is */
/* provided in case your system re- */
/* quires it. */
/* */
/* Pad cells are placed at 300u */
/* increments. Pad cell orientations */
/* are: right side - RFLNONE ROT0 */
/* left side - RFLY ROT0 */
/* top - RFLY ROT270 */
/* bottom - RFLNONE ROT270 */
/* */
/* */
/* Cell FEED. Feedthrough cell. */
/* */
MODULE FEED;
  TYPE FEEDTHROUGH;
  WIDTH 10;
  HEIGHT 150;
  IOLIST;
    F1 F BOTTOM 5 4 METAL2;
    F1 F TOP 5 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/* */
/* */
/* Cell G11. Combinational gate, 1 input, 1 output. */
/* */
MODULE G11;
  TYPE STANDARD;
  WIDTH 30;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM 5 4 METAL2;
    I1 I TOP 5 4 METAL2;
    O1 O BOTTOM 15 4 METAL2;

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    O1 O TOP    15 4 METAL2;
    F1 F BOTTOM 25 4 METAL2;
    F1 F TOP    25 4 METAL2;
ENDIOLIST;
ENDMODULE;
/*                                                    */
/*                                                    */
/* Cell G21.  Combinational gate, 2 inputs, 1 output.  */
/*                                                    */
MODULE G21;
  TYPE STANDARD;
  WIDTH 50;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM  5 4 METAL2;
    I1 I TOP    5 4 METAL2;
    I2 I BOTTOM 25 4 METAL2;
    I2 I TOP   25 4 METAL2;
    O1 O BOTTOM 35 4 METAL2;
    O1 O TOP   35 4 METAL2;
    F2 F BOTTOM 15 4 METAL2;
    F2 F TOP   15 4 METAL2;
    F3 F BOTTOM 45 4 METAL2;
    F3 F TOP   45 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/*                                                    */
/*                                                    */
/* Cell G31.  Combinational gate, 3 inputs, 1 output.  */
/*                                                    */
MODULE G31;
  TYPE STANDARD;
  WIDTH 60;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM  5 4 METAL2;
    I1 I TOP    5 4 METAL2;
    I2 I BOTTOM 15 4 METAL2;
    I2 I TOP   15 4 METAL2;
    I3 I BOTTOM 35 4 METAL2;
    I3 I TOP   35 4 METAL2;
    O1 O BOTTOM 45 4 METAL2;
    O1 O TOP   45 4 METAL2;
    F2 F BOTTOM 55 4 METAL2;
    F2 F TOP   55 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/*                                                    */
/*                                                    */
/* Cell G41.  Combinational gate, 4 inputs, 1 output.  */
/*                                                    */
MODULE G41;
  TYPE STANDARD;
  WIDTH 70;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM  5 4 METAL2;
    I1 I TOP    5 4 METAL2;
    I2 I BOTTOM 15 4 METAL2;
    I2 I TOP   15 4 METAL2;
    I3 I BOTTOM 35 4 METAL2;
    I3 I TOP   35 4 METAL2;
    I4 I BOTTOM 45 4 METAL2;
    I4 I TOP   45 4 METAL2;
    O1 O BOTTOM 55 4 METAL2;
    O1 O TOP   55 4 METAL2;
    F2 F BOTTOM 65 4 METAL2;
    F2 F TOP   65 4 METAL2;
  ENDIOLIST;

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ENDMODULE;
/*
/*
/* Cell G61.  Combinational gate, 6 inputs, 1 output.
/*
/*
MODULE G61;
  TYPE STANDARD;
  WIDTH 100;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM 5 4 METAL2;
    I1 I TOP 5 4 METAL2;
    I2 I BOTTOM 15 4 METAL2;
    I2 I TOP 15 4 METAL2;
    I3 I BOTTOM 35 4 METAL2;
    I3 I TOP 35 4 METAL2;
    I4 I BOTTOM 45 4 METAL2;
    I4 I TOP 45 4 METAL2;
    I5 I BOTTOM 65 4 METAL2;
    I5 I TOP 65 4 METAL2;
    I6 I BOTTOM 75 4 METAL2;
    I6 I TOP 75 4 METAL2;
    O1 O BOTTOM 85 4 METAL2;
    O1 O TOP 85 4 METAL2;
    F1 F BOTTOM 25 4 METAL2;
    F1 F TOP 25 4 METAL2;
    F2 F BOTTOM 95 4 METAL2;
    F2 F TOP 95 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/*
/*
/* Cell G81.  Combinational gate, 8 inputs, 1 output.
/*
/*
MODULE G81;
  TYPE STANDARD;
  WIDTH 160;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM 5 4 METAL2;
    I1 I TOP 5 4 METAL2;
    I2 I BOTTOM 15 4 METAL2;
    I2 I TOP 15 4 METAL2;
    I3 I BOTTOM 25 4 METAL2;
    I3 I TOP 25 4 METAL2;
    I4 I BOTTOM 35 4 METAL2;
    I4 I TOP 35 4 METAL2;
    I5 I BOTTOM 115 4 METAL2;
    I5 I TOP 115 4 METAL2;
    I6 I BOTTOM 125 4 METAL2;
    I6 I TOP 125 4 METAL2;
    I7 I BOTTOM 135 4 METAL2;
    I7 I TOP 135 4 METAL2;
    I8 I BOTTOM 145 4 METAL2;
    I8 I TOP 145 4 METAL2;
    O1 O BOTTOM 75 4 METAL2;
    O1 O TOP 75 4 METAL2;
    F1 F BOTTOM 45 4 METAL2;
    F1 F TOP 45 4 METAL2;
    F2 F BOTTOM 55 4 METAL2;
    F2 F TOP 55 4 METAL2;
    F3 F BOTTOM 85 4 METAL2;
    F3 F TOP 85 4 METAL2;
    F4 F BOTTOM 155 4 METAL2;
    F4 F TOP 155 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/*
/*
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/* Cell G12. Combinational gate, 1 input, 2 outputs. */
/* */
MODULE G12;
  TYPE STANDARD;
  WIDTH 60;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM 5 4 METAL2;
    I1 I TOP 5 4 METAL2;
    O1 O BOTTOM 35 4 METAL2;
    O1 O TOP 35 4 METAL2;
    O2 O BOTTOM 45 4 METAL2;
    O2 O TOP 45 4 METAL2;
    F1 F BOTTOM 15 4 METAL2;
    F1 F TOP 15 4 METAL2;
    F2 F BOTTOM 55 4 METAL2;
    F2 F TOP 55 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/* */
/* */
/* Cell F22. Sequential function 2 inputs, 2 outputs. */
/* */
MODULE F22;
  TYPE STANDARD;
  WIDTH 140;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM 15 4 METAL2;
    I1 I TOP 15 4 METAL2;
    I2 I BOTTOM 45 4 METAL2;
    I2 I TOP 45 4 METAL2;
    O1 O BOTTOM 105 4 METAL2;
    O1 O TOP 105 4 METAL2;
    O2 O BOTTOM 125 4 METAL2;
    O2 O TOP 125 4 METAL2;
    F1 F BOTTOM 5 4 METAL2;
    F1 F TOP 5 4 METAL2;
    F2 F BOTTOM 35 4 METAL2;
    F2 F TOP 35 4 METAL2;
    F3 F BOTTOM 75 4 METAL2;
    F3 F TOP 75 4 METAL2;
    F4 F BOTTOM 95 4 METAL2;
    F4 F TOP 95 4 METAL2;
    F5 F BOTTOM 115 4 METAL2;
    F5 F TOP 115 4 METAL2;
    F6 F BOTTOM 135 4 METAL2;
    F6 F TOP 135 4 METAL2;
  ENDIOLIST;
ENDMODULE;
/* */
/* */
/* Cell F32. Sequential function 3 inputs, 2 outputs. */
/* */
MODULE F32;
  TYPE STANDARD;
  WIDTH 200;
  HEIGHT 150;
  IOLIST;
    I1 I BOTTOM 15 4 METAL2;
    I1 I TOP 15 4 METAL2;
    I2 I BOTTOM 55 4 METAL2;
    I2 I TOP 55 4 METAL2;
    I3 I BOTTOM 95 4 METAL2;
    I3 I TOP 95 4 METAL2;
    O1 O BOTTOM 155 4 METAL2;
    O1 O TOP 155 4 METAL2;
    O2 O BOTTOM 175 4 METAL2;
    O2 O TOP 175 4 METAL2;
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F1 F BOTTOM 5 4 METAL2;
F1 F TOP 5 4 METAL2;
F2 F BOTTOM 35 4 METAL2;
F2 F TOP 35 4 METAL2;
F3 F BOTTOM 65 4 METAL2;
F3 F TOP 65 4 METAL2;
F4 F BOTTOM 85 4 METAL2;
F4 F TOP 85 4 METAL2;
F5 F BOTTOM 115 4 METAL2;
F5 F TOP 115 4 METAL2;
F6 F BOTTOM 135 4 METAL2;
F6 F TOP 135 4 METAL2;
F7 F BOTTOM 195 4 METAL2;
F7 F TOP 195 4 METAL2;
ENDIOLIST;
ENDMODULE;
/* */
/* */
/* Cell F42. Sequential function 4 inputs, 2 outputs. */
/* */
MODULE F42;
TYPE STANDARD;
WIDTH 200;
HEIGHT 150;
IOLIST;
I1 I BOTTOM 15 4 METAL2;
I1 I TOP 15 4 METAL2;
I2 I BOTTOM 55 4 METAL2;
I2 I TOP 55 4 METAL2;
I3 I BOTTOM 95 4 METAL2;
I3 I TOP 95 4 METAL2;
I4 I BOTTOM 125 4 METAL2;
I4 I TOP 125 4 METAL2;
O1 O BOTTOM 155 4 METAL2;
O1 O TOP 155 4 METAL2;
O2 O BOTTOM 175 4 METAL2;
O2 O TOP 175 4 METAL2;
F1 F BOTTOM 5 4 METAL2;
F1 F TOP 5 4 METAL2;
F2 F BOTTOM 35 4 METAL2;
F2 F TOP 35 4 METAL2;
F3 F BOTTOM 85 4 METAL2;
F3 F TOP 85 4 METAL2;
F4 F BOTTOM 115 4 METAL2;
F4 F TOP 115 4 METAL2;
F5 F BOTTOM 135 4 METAL2;
F5 F TOP 135 4 METAL2;
F6 F BOTTOM 165 4 METAL2;
F6 F TOP 165 4 METAL2;
F7 F BOTTOM 195 4 METAL2;
F7 F TOP 195 4 METAL2;
ENDIOLIST;
ENDMODULE;
/* */
/* */
/* Cell I1. Input pad cell, 1 output. */
/* */
MODULE I1;
TYPE PAD;
WIDTH 600;
HEIGHT 300;
IOLIST;
I1 PI RIGHT 150 0 METAL2;
O1 O LEFT 155 4 METAL1;
ENDIOLIST;
ENDMODULE;
/* */
/* */
/* Cell I2. Input pad cell, 2 outputs. */
/* */

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/*
MODULE I2;
  TYPE PAD;
  WIDTH 600;
  HEIGHT 300;
  IOLIST;
    I1 PI RIGHT 150 0 METAL2;
    O1 O  LEFT  145 4 METAL1;
    O2 O  LEFT  165 4 METAL1;
  ENDIOLIST;
ENDMODULE;
/*
/*
/* Cell 01.  Output pad cell, 1 input.
/*
MODULE 01;
  TYPE PAD;
  WIDTH 600;
  HEIGHT 300;
  IOLIST;
    I1 I  LEFT  155 4 METAL1;
    O1 PO RIGHT 150 0 METAL2;
  ENDIOLIST;
ENDMODULE;
/*
/*
/* Cell 02.  Output pad cell, 2 inputs.
/*
MODULE 02;
  TYPE PAD;
  WIDTH 600;
  HEIGHT 300;
  IOLIST;
    I1 I  LEFT  145 4 METAL1;
    I2 I  LEFT  165 4 METAL1;
    O1 PO RIGHT 150 0 METAL2;
  ENDIOLIST;
ENDMODULE;
/*
/*
/* Cell B21.  Bidirectional pad cell, 2 inputs, 1 output.
/*
MODULE B21;
  TYPE PAD;
  WIDTH 600;
  HEIGHT 300;
  IOLIST;
    I1 I  LEFT  145 4 METAL1;
    I2 I  LEFT  155 4 METAL1;
    O1 O  LEFT  165 4 METAL1;
    B1 PB RIGHT 150 0 METAL2;
  ENDIOLIST;
ENDMODULE;
```