```
MODULE a2s;
  TYPE STANDARD;
  DIMENSIONS 31 -1 31 57 -1 57 -1 -1;
  IOLIST;
    a I 2.5 -1 3 METAL2;
    a I 2.5 57 3 METAL2;
    b I 10.5 57 3 METAL2;
    b I 10.5 -1 3 METAL2;
    q O 26.5 57 3 METAL2;
    q O 26.5 -1 3 METAL2;
    u1 F 18.5 57 3 METAL2;
    u1 F 18.5 -1 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE ai2s;
  TYPE STANDARD;
  DIMENSIONS 23 -1 23 57 -1 57 -1 -1;
  IOLIST;
    a I 2.5 -1 3 METAL2;
    a I 2.5 57 3 METAL2;
    b I 10.5 -1 3 METAL2;
    b I 10.5 57 3 METAL2;
    q O 18.5 -1 3 METAL2;
    q O 18.5 57 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE ai3s;
  TYPE STANDARD;
  DIMENSIONS 31 -1 31 57 -1 57 -1 -1;
  IOLIST;
    a I 2.5 57 3 METAL2;
    a I 2.5 -1 3 METAL2;
    b I 10.5 -1 3 METAL2;
    b I 10.5 57 3 METAL2;
    c I 18.5 -1 3 METAL2;
    c I 18.5 57 3 METAL2;
    q O 26.5 -1 3 METAL2;
    q O 26.5 57 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE ai4s;
  TYPE STANDARD;
  DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
  IOLIST;
    a I 2.5 -1 3 METAL2;
    a I 2.5 57 3 METAL2;
    b I 10.5 -1 3 METAL2;
    b I 10.5 57 3 METAL2;
    c I 18.5 -1 3 METAL2;
    c I 18.5 57 3 METAL2;
    d I 26.5 -1 3 METAL2;
    d I 26.5 57 3 METAL2;
    q O 34.5 -1 3 METAL2;
    q O 34.5 57 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE aoi211s;
  TYPE STANDARD;
  DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
  IOLIST;
    a1 B 2.5 57 3 METAL2;
    a1 B 2.5 -1 3 METAL2;
    a2 I 10.5 -1 3 METAL2;
    a2 I 10.5 57 3 METAL2;
    b I 18.5 -1 3 METAL2;
    b I 18.5 57 3 METAL2;
    c I 26.5 -1 3 METAL2;
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    c I 26.5 57 3 METAL2;
    q O 34.5 57 3 METAL2;
    q O 34.5 -1 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE aoi21s;
  TYPE STANDARD;
  DIMENSIONS 31 -1 31 57 -1 57 -1 -1;
  IOLIST;
    a1 I 2.5 -1 3 METAL2;
    a1 I 2.5 57 3 METAL2;
    a2 I 10.5 57 3 METAL2;
    a2 I 10.5 -1 3 METAL2;
    b I 18.5 -1 3 METAL2;
    b I 18.5 57 3 METAL2;
    q O 26.5 -1 3 METAL2;
    q O 26.5 57 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE aoi221s;
  TYPE STANDARD;
  DIMENSIONS 47 -1 47 57 -1 57 -1 -1;
  IOLIST;
    a1 I 2.5 57 3 METAL2;
    a1 I 2.5 -1 3 METAL2;
    a2 I 10.5 57 3 METAL2;
    a2 I 10.5 -1 3 METAL2;
    b1 I 26.5 -1 3 METAL2;
    b1 I 26.5 57 3 METAL2;
    b2 I 34.5 57 3 METAL2;
    b2 I 34.5 -1 3 METAL2;
    c I 18.5 57 3 METAL2;
    c I 18.5 -1 3 METAL2;
    q O 42.5 -1 3 METAL2;
    q O 42.5 57 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE aoi31s;
  TYPE STANDARD;
  DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
  IOLIST;
    a1 I 2.5 -1 3 METAL2;
    a1 I 2.5 57 3 METAL2;
    a2 I 10.5 57 3 METAL2;
    a2 I 10.5 -1 3 METAL2;
    a3 I 18.5 57 3 METAL2;
    a3 I 18.5 -1 3 METAL2;
    b I 26.5 57 3 METAL2;
    b I 26.5 -1 3 METAL2;
    q O 34.5 57 3 METAL2;
    q O 34.5 -1 3 METAL2;
  ENDIOLIST;
ENDMODULE;
MODULE aoi32s;
  TYPE STANDARD;
  DIMENSIONS 47 -1 47 57 -1 57 -1 -1;
  IOLIST;
    a1 I 2.5 -1 3 METAL2;
    a1 I 2.5 57 3 METAL2;
    a2 I 10.5 -1 3 METAL2;
    a2 I 10.5 57 3 METAL2;
    a3 I 18.5 -1 3 METAL2;
    a3 I 18.5 57 3 METAL2;
    b1 I 26.5 57 3 METAL2;
    b1 I 26.5 -1 3 METAL2;
    b2 I 34.5 -1 3 METAL2;
    b2 I 34.5 57 3 METAL2;
    q O 42.5 57 3 METAL2;
    q O 42.5 -1 3 METAL2;
```

```
    ENDIOLIST;
  ENDMODULE;
  MODULE aoi33s;
    TYPE STANDARD;
    DIMENSIONS 55 -1 55 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      a3 I 18.5 -1 3 METAL2;
      a3 I 18.5 57 3 METAL2;
      b1 I 26.5 57 3 METAL2;
      b1 I 26.5 -1 3 METAL2;
      b2 I 34.5 -1 3 METAL2;
      b2 I 34.5 57 3 METAL2;
      b3 I 42.5 -1 3 METAL2;
      b3 I 42.5 57 3 METAL2;
      q O 50.5 -1 3 METAL2;
      q O 50.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE dr2s;
    TYPE STANDARD;
    DIMENSIONS 63 -1 63 57 -1 57 -1 -1;
    IOLIST;
      d I 2.5 57 3 METAL2;
      d I 2.5 -1 3 METAL2;
      reset I 18.5 -1 3 METAL2;
      reset I 18.5 57 3 METAL2;
      ck1 I 10.5 -1 3 METAL2;
      ck1 I 10.5 57 3 METAL2;
      ck2 I 42.5 -1 3 METAL2;
      ck2 I 42.5 57 3 METAL2;
      qb O 50.5 -1 3 METAL2;
      qb O 50.5 57 3 METAL2;
      q O 58.5 -1 3 METAL2;
      q O 58.5 57 3 METAL2;
      u1 F 26.5 -1 3 METAL2;
      u1 F 26.5 57 3 METAL2;
      u2 F 34.5 -1 3 METAL2;
      u2 F 34.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE dsr2s;
    TYPE STANDARD;
    DIMENSIONS 71 -1 71 57 -1 57 -1 -1;
    IOLIST;
      d I 10.5 57 3 METAL2;
      d I 10.5 -1 3 METAL2;
      scanin I 26.5 -1 3 METAL2;
      scanin I 26.5 57 3 METAL2;
      reset I 34.5 -1 3 METAL2;
      reset I 34.5 57 3 METAL2;
      ck1 I 2.5 -1 3 METAL2;
      ck1 I 2.5 57 3 METAL2;
      scan_clk I 18.5 -1 3 METAL2;
      scan_clk I 18.5 57 3 METAL2;
      ck2 I 50.5 -1 3 METAL2;
      ck2 I 50.5 57 3 METAL2;
      qb O 58.5 -1 3 METAL2;
      qb O 58.5 57 3 METAL2;
      q O 66.5 -1 3 METAL2;
      q O 66.5 57 3 METAL2;
      u1 F 42.5 -1 3 METAL2;
      u1 F 42.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE i1s;
```

```
    TYPE STANDARD;
    DIMENSIONS 15 -1 15 57 -1 57 -1 -1;
    IOLIST;
      a I 2.5 -1 3 METAL2;
      a I 2.5 57 3 METAL2;
      q O 10.5 -1 3 METAL2;
      q O 10.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE i2s;
    TYPE STANDARD;
    DIMENSIONS 15 -1 15 57 -1 57 -1 -1;
    IOLIST;
      a I 2.5 -1 3 METAL2;
      a I 2.5 57 3 METAL2;
      q O 10.5 -1 3 METAL2;
      q O 10.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai211s;
    TYPE STANDARD;
    DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      b I 18.5 -1 3 METAL2;
      b I 18.5 57 3 METAL2;
      c I 26.5 -1 3 METAL2;
      c I 26.5 57 3 METAL2;
      q O 34.5 57 3 METAL2;
      q O 34.5 -1 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai21s;
    TYPE STANDARD;
    DIMENSIONS 31 -1 31 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      b I 18.5 -1 3 METAL2;
      b I 18.5 57 3 METAL2;
      q O 26.5 -1 3 METAL2;
      q O 26.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai221s;
    TYPE STANDARD;
    DIMENSIONS 47 -1 47 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      b1 I 26.5 -1 3 METAL2;
      b1 I 26.5 57 3 METAL2;
      b2 I 42.5 -1 3 METAL2;
      b2 I 42.5 57 3 METAL2;
      c I 18.5 57 3 METAL2;
      c I 18.5 -1 3 METAL2;
      q O 34.5 -1 3 METAL2;
      q O 34.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai22s;
    TYPE STANDARD;
```

```
    DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      b1 I 34.5 57 3 METAL2;
      b1 I 34.5 -1 3 METAL2;
      b2 I 18.5 -1 3 METAL2;
      b2 I 18.5 57 3 METAL2;
      q O 26.5 -1 3 METAL2;
      q O 26.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai31s;
    TYPE STANDARD;
    DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      a3 I 18.5 -1 3 METAL2;
      a3 I 18.5 57 3 METAL2;
      b I 34.5 57 3 METAL2;
      b I 34.5 -1 3 METAL2;
      q O 26.5 -1 3 METAL2;
      q O 26.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai32s;
    TYPE STANDARD;
    DIMENSIONS 47 -1 47 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      a3 I 18.5 -1 3 METAL2;
      a3 I 18.5 57 3 METAL2;
      b1 I 34.5 -1 3 METAL2;
      b1 I 34.5 57 3 METAL2;
      b2 I 42.5 -1 3 METAL2;
      b2 I 42.5 57 3 METAL2;
      q O 26.5 -1 3 METAL2;
      q O 26.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oai33s;
    TYPE STANDARD;
    DIMENSIONS 55 -1 55 57 -1 57 -1 -1;
    IOLIST;
      a1 I 2.5 -1 3 METAL2;
      a1 I 2.5 57 3 METAL2;
      a2 I 10.5 -1 3 METAL2;
      a2 I 10.5 57 3 METAL2;
      a3 I 18.5 -1 3 METAL2;
      a3 I 18.5 57 3 METAL2;
      b1 I 34.5 -1 3 METAL2;
      b1 I 34.5 57 3 METAL2;
      b2 I 42.5 -1 3 METAL2;
      b2 I 42.5 57 3 METAL2;
      b3 I 50.5 -1 3 METAL2;
      b3 I 50.5 57 3 METAL2;
      q O 26.5 -1 3 METAL2;
      q O 26.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oi2s;
```

```
    TYPE STANDARD;
    DIMENSIONS 23 -1 23 57 -1 57 -1 -1;
    IOLIST;
      a I 18.5 -1 3 METAL2;
      a I 18.5 57 3 METAL2;
      b I 2.5 -1 3 METAL2;
      b I 2.5 57 3 METAL2;
      q O 10.5 -1 3 METAL2;
      q O 10.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oi3s;
    TYPE STANDARD;
    DIMENSIONS 31 -1 31 57 -1 57 -1 -1;
    IOLIST;
      a I 2.5 -1 3 METAL2;
      a I 2.5 57 3 METAL2;
      b I 10.5 -1 3 METAL2;
      b I 10.5 57 3 METAL2;
      c I 26.5 -1 3 METAL2;
      c I 26.5 57 3 METAL2;
      q O 18.5 -1 3 METAL2;
      q O 18.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE oi4s;
    TYPE STANDARD;
    DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
    IOLIST;
      a I 2.5 -1 3 METAL2;
      a I 2.5 57 3 METAL2;
      b I 10.5 -1 3 METAL2;
      b I 10.5 57 3 METAL2;
      c I 26.5 -1 3 METAL2;
      c I 26.5 57 3 METAL2;
      d I 34.5 -1 3 METAL2;
      d I 34.5 57 3 METAL2;
      q O 18.5 -1 3 METAL2;
      q O 18.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE tsbuffs;
    TYPE STANDARD;
    DIMENSIONS 63 -1 63 57 -1 57 -1 -1;
    IOLIST;
      data I 26.5 57 3 METAL2;
      data I 26.5 -1 3 METAL2;
      enable I 10.5 57 3 METAL2;
      enable I 10.5 -1 3 METAL2;
      q O 58.5 57 3 METAL2;
      q O 58.5 -1 3 METAL2;
      u1 F 2.5 -1 3 METAL2;
      u1 F 2.5 57 3 METAL2;
      u2 F 18.5 57 3 METAL2;
      u2 F 18.5 -1 3 METAL2;
      u3 F 34.5 -1 3 METAL2;
      u3 F 34.5 57 3 METAL2;
      u4 F 42.5 -1 3 METAL2;
      u4 F 42.5 57 3 METAL2;
      u5 F 50.5 -1 3 METAL2;
      u5 F 50.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE tscons0s;
    TYPE STANDARD;
    DIMENSIONS 63 -1 63 57 -1 57 -1 -1;
    IOLIST;
      enable I 10.5 57 3 METAL2;
      enable I 10.5 -1 3 METAL2;
```

```
      q O 58.5 57 3 METAL2;
      q O 58.5 -1 3 METAL2;
      u1 F 2.5 -1 3 METAL2;
      u1 F 2.5 57 3 METAL2;
      u2 F 18.5 57 3 METAL2;
      u2 F 18.5 -1 3 METAL2;
      u3 F 26.5 -1 3 METAL2;
      u3 F 26.5 57 3 METAL2;
      u4 F 34.5 -1 3 METAL2;
      u4 F 34.5 57 3 METAL2;
      u5 F 42.5 -1 3 METAL2;
      u5 F 42.5 57 3 METAL2;
      u6 F 50.5 -1 3 METAL2;
      u6 F 50.5 57 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
  MODULE xors;
    TYPE STANDARD;
    DIMENSIONS 39 -1 39 57 -1 57 -1 -1;
    IOLIST;
      a I 2.5 57 3 METAL2;
      a I 2.5 -1 3 METAL2;
      b I 10.5 -1 3 METAL2;
      b I 10.5 57 3 METAL2;
      q O 34.5 57 3 METAL2;
      q O 34.5 -1 3 METAL2;
      u1 F 18.5 -1 3 METAL2;
      u1 F 18.5 57 3 METAL2;
      u2 F 26.5 57 3 METAL2;
      u2 F 26.5 -1 3 METAL2;
    ENDIOLIST;
  ENDMODULE;
```