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--BSDL model for ISSI's IS61LPS/LPD/VPS/VPD/VF/LF51218 Sync. SRAM SRAM
--  Author: S.J. Jang
--  Revision History: Rev0.0 (9/6/05)
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----------------------------------------------------------------------

entity IS61LXXVXX51218 is

    generic (PHYSICAL_PIN_MAP : string := "BGA_11x15");

    port (   A   :   in      bit_vector(0 to 18);
       ADV_b   :   in      bit;
       ADSP_b  :   in      bit;
       ADSC_b  :   in      bit;
       GW_b    :   in      bit;
       BW_A_b:   in      bit;
       BW_B_b:   in      bit;
       CLK   :   in      bit;
       DP_A  :   in      bit;
       DP_B  :   in      bit;
       DQ_A  :   in      bit_vector(0 to 7);
       DQ_B  :   in      bit_vector(0 to 7);
       CE_b  :   in      bit;
       CE2   :   in      bit;
       CE2_b :   in      bit;
       TCK   :   in      bit;
       TDI   :   in      bit;
       TDO   :   out     bit;
       TMS   :   in      bit;
       MODE  :   in      bit;
       OE_b  :   in      bit;
       BWE_b :   in      bit;
       NC    :   linkage bit_vector(0 to 36);
       Vdd   :   linkage bit_vector(0 to 17);
       Vddq  :   linkage bit_vector(0 to 19);
       Vss   :   linkage bit_vector(0 to 34);
       ZZ    :   in      bit);

    use STD_1149_1_1994.all;

    attribute COMPONENT_CONFORMANCE of IS61LXXVXX51218: entity is
"STD_1149_1_1993";

    attribute PIN_MAP of IS61LXXVXX51218: entity is PHYSICAL_PIN_MAP;

    constant BGA_11x15: PIN_MAP_STRING :=

    " A      : (R6, P6, P4, R4, R3, A10, R11, R10, P10, P9, R9, R8, P8," &
    "                P3, A2, P11, B2, B10, A11),          " &
    " ADV_b:    A9,                       " &
    " ADSP_b:   B9,                       " &
    " ADSC_b:   A8,                       " &
    " GW_b:     B7,                       " &
    " BWE_b:    A7,                       " &
    " BW_A_b  :    B5,                      " &
    " BW_B_b  :    A4,                      " &
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"  CLK       :     B6,                          " &
"  DP_A      :     C11,                         " &
"  DP_B      :     N1,                          " &
"  DQ_A      :     (D11, E11, F11, G11, J10, K10, L10, M10), " &
"  DQ_B      :     (M1, L1, K1, J1, G2, F2, E2, D2),        " &
"  CE_b      :     A3,                          " &
"  CE2       :     B3,                          " &
"  CE2_b     :     A6,                          " &
"  TCK       :     R7,                          " &
"  TDI       :     P5,                          " &
"  TDO       :     P7,                          " &
"  TMS       :     R5,                          " &
"  MODE      :     R1,                          " &
"  OE_b      :     B8,                          " &
"  NC  :     (A1, B1, C1, D1, E1, F1, G1, H1, P1, C2, J2, K2, L2,    " &
"            M2, N2, P2, R2, H3, B4, A5, N5, N6, N7, H9, C10, D10,   " &
"            E10, F10, G10, H10, N10, B11, J11, K11, L11, M11,       " &
"            N11),                                                   " &
"  Vdd :     (D4, E4, F4, G4, H4, J4, K4, L4, M4, D8, E8, F8, G8,    " &
"            H8, J8, K8, L8, M8),                                    " &
"  Vddq:     (C3, D3, E3, F3, G3, J3, K3, L3, M3, N3, C9, D9, E9,    " &
"            F9, G9, J9, K9, L9, M9, N9),                            " &
"  Vss :     (H2, C4, N4, C5, D5, E5, F5, G5, H5, J5, K5, L5, M5, C6, " &
"            D6, E6, F6, G6, H6, J6, K6, L6, M6, C7, D7, E7, F7,      " &
"            G7, H7, J7, K7, L7, M7, C8, N8),                        " &
"  ZZ        :     H11                          " ;

    attribute TAP_SCAN_IN       of   TDI : signal is true;
    attribute TAP_SCAN_OUT      of   TDO : signal is true;
    attribute TAP_SCAN_MODE     of   TMS : signal is true;
    attribute TAP_SCAN_CLOCK    of   TCK : signal is (100.0e6, BOTH);

    attribute INSTRUCTION_LENGTH   of   IS61LXXVXX51218 : entity is 3;

    attribute INSTRUCTION_OPCODE   of   IS61LXXVXX51218 : entity is
        "EXTEST     (000),   " &
        "IDCODE     (001),   " &
        "SAMPLEZ    (010),   " &
        "SAMPLE     (100),   " &
        "BYPASS     (111)    " ;

    attribute INSTRUCTION_CAPTURE   of   IS61LXXVXX51218 : entity is "001";

    attribute IDCODE_REGISTER   of   IS61LXXVXX51218 : entity is
        "0000"            &   -- Revision Number
        "0100000011"      &   -- Part configuration
        "000000"          &   -- ISSI Device ID
        "00011010101"     &   -- ISSI JEDEC ID
        "1"               ;   -- Presence Register

    attribute REGISTER_ACCESS    of   IS61LXXVXX51218 : entity is
        "BOUNDARY   (EXTEST, SAMPLEZ, SAMPLE),   " &
        "BYPASS     (BYPASS)            " ;

    attribute BOUNDARY_LENGTH   of   IS61LXXVXX51218 :   entity is 75;

    attribute BOUNDARY_REGISTER   of   IS61LXXVXX51218 : entity is
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"0    (BC_4,   MODE,    input,      X),    " &
"1    (BC_4,   *,       internal,   X),    " &
"2    (BC_4,   A(15),   input,      X),    " &
"3    (BC_4,   A(12),   input,      X),    " &
"4    (BC_4,   A(11),   input,      X),    " &
"5    (BC_4,   A(10),   input,      X),    " &
"6    (BC_4,   A(9),    input,      X),    " &
"7    (BC_4,   A(8),    input,      X),    " &
"8    (BC_4,   A(7),    input,      X),    " &
"9    (BC_4,   A(6),    input,      X),    " &
"10   (BC_4,   ZZ,      input,      X),    " &
"11   (BC_4,   *,       internal,   X),    " &
"12   (BC_4,   *,       internal,   X),    " &
"13   (BC_4,   *,       internal,   X),    " &
"14   (BC_4,   *,       internal,   X),    " &
"15   (BC_4,   *,       internal,   X),    " &
"16   (BC_4,   DQ_A(7),input,       X),    " &
"17   (BC_4,   DQ_A(6),input,       X),    " &
"18   (BC_4,   DQ_A(5),input,       X),    " &
"19   (BC_4,   DQ_A(4),input,       X),    " &
"20   (BC_4,   DQ_A(3),input,       X),    " &
"21   (BC_4,   DQ_A(2),input,       X),    " &
"22   (BC_4,   DQ_A(1),input,       X),    " &
"23   (BC_4,   DQ_A(0),input,       X),    " &
"24   (BC_4,   DP_A,    input,      X),    " &
"25   (BC_4,   *,       internal,   X),    " &
"26   (BC_4,   *,       internal,   X),    " &
"27   (BC_4,   *,       internal,   X),    " &
"28   (BC_4,   *,       internal,   X),    " &
"29   (BC_4,   A(18),   input,      X),    " &
"30   (BC_4,   A(5),    input,      X),    " &
"31   (BC_4,   A(17),   input,      X),    " &
"32   (BC_4,   ADV_b,   input,      X),    " &
"33   (BC_4,   ADSP_b,  input,      X),    " &
"34   (BC_4,   ADSC_b,  input,      X),    " &
"35   (BC_4,   OE_b,    input,      X),    " &
"36   (BC_4,   BWE_b,   input,      X),    " &
"37   (BC_4,   GW_b,    input,      X),    " &
"38   (BC_4,   CLK,     input,      X),    " &
"39   (BC_4,   *,       internal,   X),    " &
"40   (BC_4,   *,       internal,   X),    " &
"41   (BC_4,   CE2_b,   input,      X),    " &
"42   (BC_4,   BW_A_b,  input,      X),    " &
"43   (BC_4,   *,       internal,   X),    " &
"44   (BC_4,   BW_B_b,  input,      X),    " &
"45   (BC_4,   *,       internal,   X),    " &
"46   (BC_4,   CE2,     input,      X),    " &
"47   (BC_4,   CE_b,    input,      X),    " &
"48   (BC_4,   A(14),   input,      X),    " &
"49   (BC_4,   A(16),   input,      X),    " &
"50   (BC_4,   *,       internal,   X),    " &
"51   (BC_4,   *,       internal,   X),    " &
"52   (BC_4,   *,       internal,   X),    " &
"53   (BC_4,   *,       internal,   X),    " &
"54   (BC_4,   *,       internal,   X),    " &
"55   (BC_4,   *,       internal,   X),    " &
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"56    (BC_4,   DQ_B(7),input,       X),    " &
"57    (BC_4,   DQ_B(6),input,       X),    " &
"58    (BC_4,   DQ_B(5),input,       X),    " &
"59    (BC_4,   DQ_B(4),input,       X),    " &
"60    (BC_4,   DQ_B(3),input,       X),    " &
"61    (BC_4,   DQ_B(2),input,       X),    " &
"62    (BC_4,   DQ_B(1),input,       X),    " &
"63    (BC_4,   DQ_B(0),input,       X),    " &
"64    (BC_4,   DP_B,   input,       X),    " &
"65    (BC_4,   *,       internal,   X),    " &
"66    (BC_4,   *,       internal,   X),    " &
"67    (BC_4,   *,       internal,   X),    " &
"68    (BC_4,   *,       internal,   X),    " &
"69    (BC_4,   A(13),   input,      X),    " &
"70    (BC_4,   A(4),    input,      X),    " &
"71    (BC_4,   A(3),    input,      X),    " &
"72    (BC_4,   A(2),    input,      X),    " &
"73    (BC_4,   A(1),    input,      X),    " &
"74    (BC_4,   A(0),    input,      X)     " ;

    attribute DESIGN_WARNING of IS61LXXVXX51218:entity is
     "WARNING: THIS DEVICE OPERATES ON A SUBSET OF IEEE STANDARD 1149.1, "&
     "THE JTAG INSTRUCTIONS EXTEST IS NOT 1149.1 COMPLIANT.";

end IS61LXXVXX51218;
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