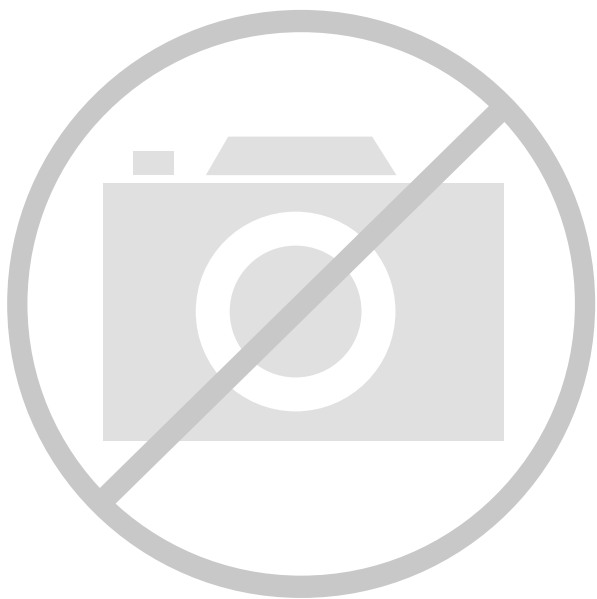




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### Understanding [Embedded - FPGAs \(Field Programmable Gate Array\)](#)

Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling customized functionality tailored to specific applications. This reprogrammability allows developers to iterate designs quickly and implement complex functions without the need for custom hardware.

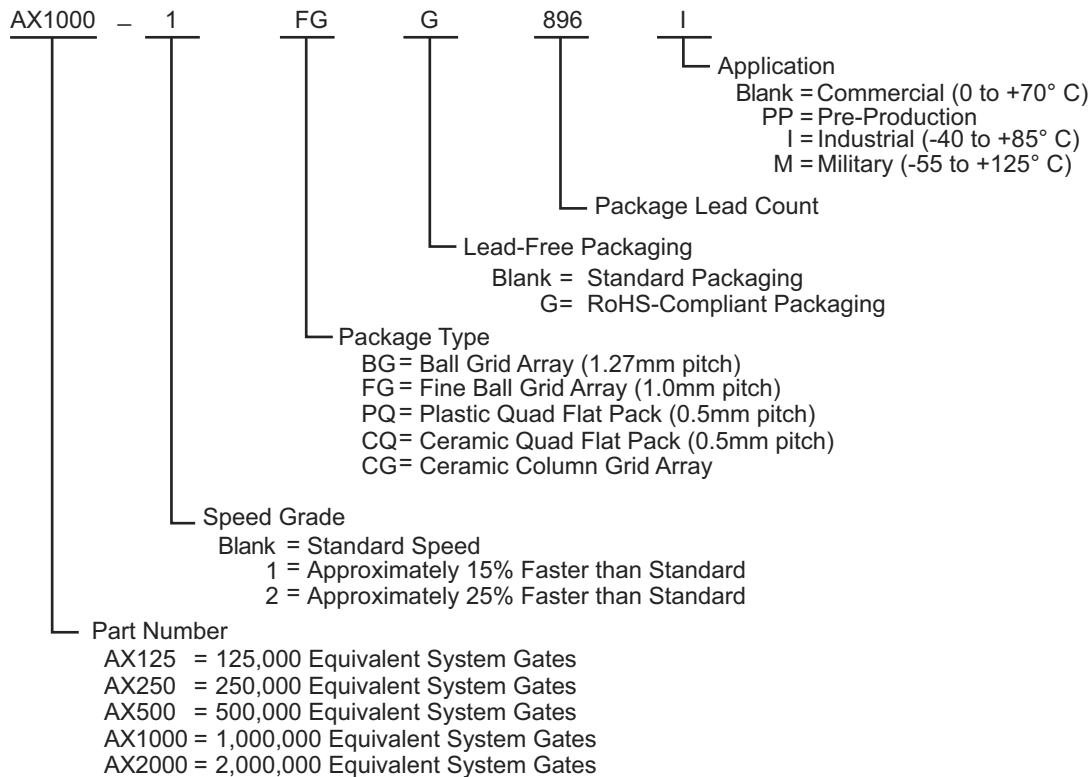
### Applications of Embedded - FPGAs

The versatility of Embedded - FPGAs makes them indispensable in numerous fields. In telecommunications.

#### Details

|                                |                                                                                                                                                               |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Status                 | Active                                                                                                                                                        |
| Number of LABs/CLBs            | 18144                                                                                                                                                         |
| Number of Logic Elements/Cells | -                                                                                                                                                             |
| Total RAM Bits                 | 165888                                                                                                                                                        |
| Number of I/O                  | 516                                                                                                                                                           |
| Number of Gates                | 1000000                                                                                                                                                       |
| Voltage - Supply               | 1.425V ~ 1.575V                                                                                                                                               |
| Mounting Type                  | Surface Mount                                                                                                                                                 |
| Operating Temperature          | 0°C ~ 70°C (TA)                                                                                                                                               |
| Package / Case                 | 729-BBGA                                                                                                                                                      |
| Supplier Device Package        | 729-PBGA (35x35)                                                                                                                                              |
| Purchase URL                   | <a href="https://www.e-xfl.com/product-detail/microchip-technology/ax1000-bgg729">https://www.e-xfl.com/product-detail/microchip-technology/ax1000-bgg729</a> |

## Ordering Information



## Device Resources

| User I/Os (Including Clock Buffers) |       |       |       |        |        |
|-------------------------------------|-------|-------|-------|--------|--------|
| Package                             | AX125 | AX250 | AX500 | AX1000 | AX2000 |
| PQ208                               | –     | 115   | 115   | –      | –      |
| CQ208                               | –     | 115   | 115   | –      | –      |
| CQ256                               | –     | –     | –     | –      | 136    |
| FG256                               | 138   | 138   | –     | –      | –      |
| FG324                               | 168   | –     | –     | –      | –      |
| CQ352                               | –     | 198   | 198   | 198    | 198    |
| FG484                               | –     | 248   | 317   | 317    | –      |
| CG624                               | –     | –     | –     | 418    | 418    |
| FG676                               | –     | –     | 336   | 418    | –      |
| BG729                               | –     | –     | –     | 516    | –      |
| FG896                               | –     | –     | –     | 516    | 586    |
| FG1152                              | –     | –     | –     | –      | 684    |

*Note: The FG256, FG324, and FG484 are footprint compatible with one another. The FG676, FG896, and FG1152 are also footprint compatible with one another.*

## Axcelerator Family Device Status

| Axcelerator® Devices | Status     |
|----------------------|------------|
| AX125                | Production |
| AX250                | Production |
| AX500                | Production |
| AX1000               | Production |
| AX2000               | Production |

## Temperature Grade Offerings

| Package | AX125 | AX250   | AX500   | AX1000  | AX2000  |
|---------|-------|---------|---------|---------|---------|
| PQ208   | –     | C, I, M | C, I, M | –       | –       |
| CQ208   | –     | M       | M       | –       | –       |
| CQ256   | –     | –       | –       | –       | M       |
| FG256   | C, I  | C, I, M | –       | –       | –       |
| FG324   | C, I  | –       | –       | –       | –       |
| CQ352   | –     | M       | M       | M       | M       |
| FG484   | –     | C, I, M | C, I, M | C, I, M | –       |
| CG624   | –     | –       | –       | M       | M       |
| FG676   | –     | –       | C, I, M | C, I, M | –       |
| BG729   | –     | –       | –       | C, I, M | –       |
| FG896   | –     | –       | –       | C, I, M | C, I, M |
| FG1152  | –     | –       | –       | –       | C, I, M |

*C = Commercial*

*I = Industrial*

*M = Military*

## Speed Grade and Temperature Grade Matrix

| Temperature Grade | Std | –1 | –2 |
|-------------------|-----|----|----|
| C                 | ✓   | ✓  | ✓  |
| I                 | ✓   | ✓  | ✓  |
| M                 | ✓   | ✓  | –  |

*C = Commercial*

*I = Industrial*

*M = Military*

**Table 2-22 • 3.3 V LVTTTL I/O Module**

**Worst-Case Commercial Conditions VCCA = 1.425 V, VCCI = 3.0 V, T<sub>J</sub> = 70°C (continued)**

|                                                         |                                                                           | –2 Speed |       | –1 Speed |       | Std Speed |       |       |
|---------------------------------------------------------|---------------------------------------------------------------------------|----------|-------|----------|-------|-----------|-------|-------|
| Parameter                                               | Description                                                               | Min.     | Max.  | Min.     | Max.  | Min.      | Max.  | Units |
| LVTTTL Output Drive Strength =3 (16 mA) / Low Slew Rate |                                                                           |          |       |          |       |           |       |       |
| t <sub>DP</sub>                                         | Input Buffer                                                              |          | 1.68  |          | 1.92  |           | 2.26  | ns    |
| t <sub>PY</sub>                                         | Output Buffer                                                             |          | 11.03 |          | 12.56 |           | 14.77 | ns    |
| t <sub>ENZL</sub>                                       | Enable to Pad Delay through the Output Buffer—Z to Low                    |          | 11.42 |          | 13.01 |           | 15.29 | ns    |
| t <sub>ENZH</sub>                                       | Enable to Pad Delay through the Output Buffer—Z to High                   |          | 11.04 |          | 12.58 |           | 14.79 | ns    |
| t <sub>ENLZ</sub>                                       | Enable to Pad Delay through the Output Buffer—Low to Z                    |          | 1.86  |          | 1.88  |           | 1.88  | ns    |
| t <sub>ENHZ</sub>                                       | Enable to Pad Delay through the Output Buffer—High to Z                   |          | 2.50  |          | 2.51  |           | 2.52  | ns    |
| t <sub>IOCLKQ</sub>                                     | Sequential Clock-to-Q for the I/O Input Register                          |          | 0.67  |          | 0.77  |           | 0.90  | ns    |
| t <sub>IOCLKY</sub>                                     | Clock-to-output Y for the I/O Output Register and the I/O Enable Register |          | 0.67  |          | 0.77  |           | 0.90  | ns    |
| t <sub>SUD</sub>                                        | Data Input Set-Up                                                         |          | 0.23  |          | 0.27  |           | 0.31  | ns    |
| t <sub>SUE</sub>                                        | Enable Input Set-Up                                                       |          | 0.26  |          | 0.30  |           | 0.35  | ns    |
| t <sub>HD</sub>                                         | Data Input Hold                                                           |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>HE</sub>                                         | Enable Input Hold                                                         |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>CPWHL</sub>                                      | Clock Pulse Width High to Low                                             | 0.39     |       | 0.39     |       | 0.39      |       | ns    |
| t <sub>CPWLH</sub>                                      | Clock Pulse Width Low to High                                             | 0.39     |       | 0.39     |       | 0.39      |       | ns    |
| t <sub>WASYN</sub>                                      | Asynchronous Pulse Width                                                  | 0.37     |       | 0.37     |       | 0.37      |       | ns    |
| t <sub>REASYN</sub>                                     | Asynchronous Recovery Time                                                |          | 0.13  |          | 0.15  |           | 0.17  | ns    |
| t <sub>HASYN</sub>                                      | Asynchronous Removal Time                                                 |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>CLR</sub>                                        | Asynchronous Clear-to-Q                                                   |          | 0.23  |          | 0.27  |           | 0.31  | ns    |
| t <sub>PRESET</sub>                                     | Asynchronous Preset-to-Q                                                  |          | 0.23  |          | 0.27  |           | 0.31  | ns    |

The ClockTileDist Cluster contains an HCLKMux (HM) module for each of the four HCLK trees and a CLKMux (CM) module for each of the CLK trees. The HCLK branches then propagate horizontally through the middle of the core tile to HCLKColDist (HD) modules in every SuperCluster column. The CLK branches propagate vertically through the center of the core tile to CLKRowDist (RD) modules in every SuperCluster row. Together, the HCLK and CLK branches provide for a low-skew global fanout within the core tile (Figure 2-40 and Figure 2-41).

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**Figure 2-40 • CTD, CD, and HD Module Layout**

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**Figure 2-41 • HCLK and CLK Distribution within a Core Tile**

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## Timing Characteristics

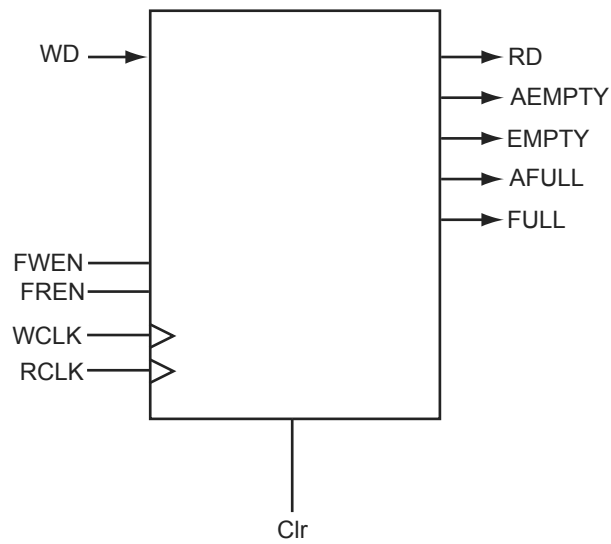


Figure 2-66 • FIFO Model

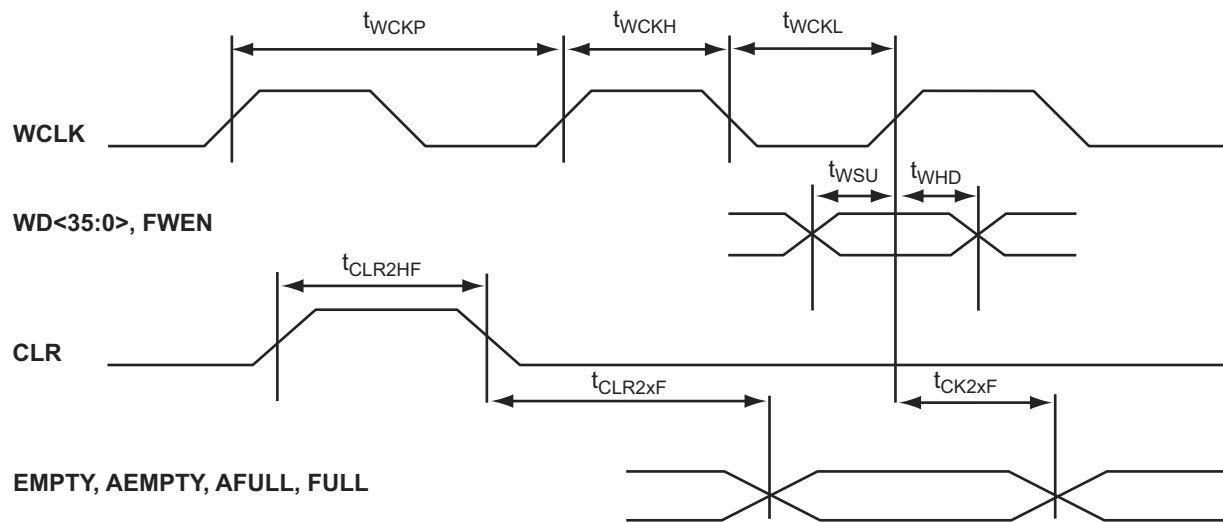


Figure 2-67 • FIFO Write Timing

**Table 2-98 • One FIFO Block**
**Worst-Case Commercial Conditions VCCA = 1.425 V, VCCI = 3.0 V, T<sub>J</sub> = 70°C**

|                      |                              | –2 Speed |       | –1 Speed |       | Std Speed |       | Units |
|----------------------|------------------------------|----------|-------|----------|-------|-----------|-------|-------|
| Parameter            | Description                  | Min.     | Max.  | Min.     | Max.  | Min.      | Max.  |       |
| FIFO Module Timing   |                              |          |       |          |       |           |       |       |
| t <sub>WSU</sub>     | Write Setup                  |          | 11.40 |          | 12.98 |           | 15.26 | ns    |
| t <sub>WHD</sub>     | Write Hold                   |          | 0.22  |          | 0.25  |           | 0.30  | ns    |
| t <sub>WCKH</sub>    | WCLK High                    |          | 0.75  |          | 0.75  |           | 0.75  | ns    |
| t <sub>WCKL</sub>    | WCLK Low                     |          | 0.88  |          | 0.88  |           | 0.88  | ns    |
| t <sub>WCKP</sub>    | Minimum WCLK Period          | 1.63     |       | 1.63     |       | 1.63      |       | ns    |
| t <sub>RSU</sub>     | Read Setup                   |          | 11.63 |          | 13.25 |           | 15.58 | ns    |
| t <sub>RHD</sub>     | Read Hold                    |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>RCKH</sub>    | RCLK High                    |          | 0.77  |          | 0.77  |           | 0.77  | ns    |
| t <sub>RCKL</sub>    | RCLK Low                     |          | 0.93  |          | 0.93  |           | 0.93  | ns    |
| t <sub>RCKP</sub>    | Minimum RCLK period          | 1.70     |       | 1.70     |       | 1.70      |       | ns    |
| t <sub>CLRHF</sub>   | Clear High                   |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>CLR2FF</sub>  | Clear-to-flag (EMPTY/FULL)   |          | 1.92  |          | 2.18  |           | 2.57  | ns    |
| t <sub>CLR2AF</sub>  | Clear-to-flag (AEMPTY/AFULL) |          | 4.39  |          | 5.00  |           | 5.88  | ns    |
| t <sub>CK2FF</sub>   | Clock-to-flag (EMPTY/FULL)   |          | 2.13  |          | 2.42  |           | 2.85  | ns    |
| t <sub>CK2AF</sub>   | Clock-to-flag (AEMPTY/AFULL) |          | 5.04  |          | 5.75  |           | 6.75  | ns    |
| t <sub>RCK2RD1</sub> | RCLK-To-OUT (Pipelined)      |          | 1.32  |          | 1.51  |           | 1.77  | ns    |
| t <sub>RCK2RD2</sub> | RCLK-To-OUT (Non-Pipelined)  |          | 2.16  |          | 2.46  |           | 2.90  | ns    |

*Note: Timing data for this single block FIFO has a depth of 4,096. For all other combinations, use Microsemi's timing software.*

**Table 2-100 • Four FIFO Blocks Cascaded**  
**Worst-Case Commercial Conditions VCCA = 1.425 V, VCCI = 3.0 V, T<sub>J</sub> = 70°C**

|                      |                              | –2 Speed |       | –1 Speed |       | Std Speed |       | Units |
|----------------------|------------------------------|----------|-------|----------|-------|-----------|-------|-------|
| Parameter            | Description                  | Min.     | Max.  | Min.     | Max.  | Min.      | Max.  |       |
| FIFO Module Timing   |                              |          |       |          |       |           |       |       |
| t <sub>WSU</sub>     | Write Setup                  |          | 14.60 |          | 16.63 |           | 19.55 | ns    |
| t <sub>WHD</sub>     | Write Hold                   |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>WCKH</sub>    | WCLK High                    |          | 0.75  |          | 0.75  |           | 0.75  | ns    |
| t <sub>WCKL</sub>    | WCLK Low                     |          | 2.51  |          | 2.51  |           | 2.51  | ns    |
| t <sub>WCKP</sub>    | Minimum WCLK Period          | 3.26     |       | 3.26     |       | 3.26      |       | ns    |
| t <sub>RSU</sub>     | Read Setup                   |          | 15.27 |          | 17.39 |           | 20.44 | ns    |
| t <sub>RHD</sub>     | Read Hold                    |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>RCKH</sub>    | RCLK High                    |          | 0.73  |          | 0.73  |           | 0.73  | ns    |
| t <sub>RCKL</sub>    | RCLK Low                     |          | 2.96  |          | 2.96  |           | 2.96  | ns    |
| t <sub>RCKP</sub>    | Minimum RCLK period          | 3.69     |       | 3.69     |       | 3.69      |       | ns    |
| t <sub>CLRHF</sub>   | Clear High                   |          | 0.00  |          | 0.00  |           | 0.00  | ns    |
| t <sub>CLR2FF</sub>  | Clear-to-flag (EMPTY/FULL)   |          | 1.92  |          | 2.18  |           | 2.57  | ns    |
| t <sub>CLR2AF</sub>  | Clear-to-flag (AEMPTY/AFULL) |          | 4.39  |          | 5.00  |           | 5.88  | ns    |
| t <sub>CK2FF</sub>   | Clock-to-flag (EMPTY/FULL)   |          | 2.13  |          | 2.42  |           | 2.85  | ns    |
| t <sub>CK2AF</sub>   | Clock-to-flag (AEMPTY/AFULL) |          | 5.04  |          | 5.75  |           | 6.75  | ns    |
| t <sub>RCK2RD1</sub> | RCLK-To-OUT (Pipelined)      |          | 2.36  |          | 2.69  |           | 3.16  | ns    |
| t <sub>RCK2RD2</sub> | RCLK-To-OUT (Nonpipelined)   |          | 2.83  |          | 3.23  |           | 3.79  | ns    |

*Note: Timing data for these four cascaded FIFO blocks uses a depth of 16,384. For all other combinations, use Microsemi's timing software.*

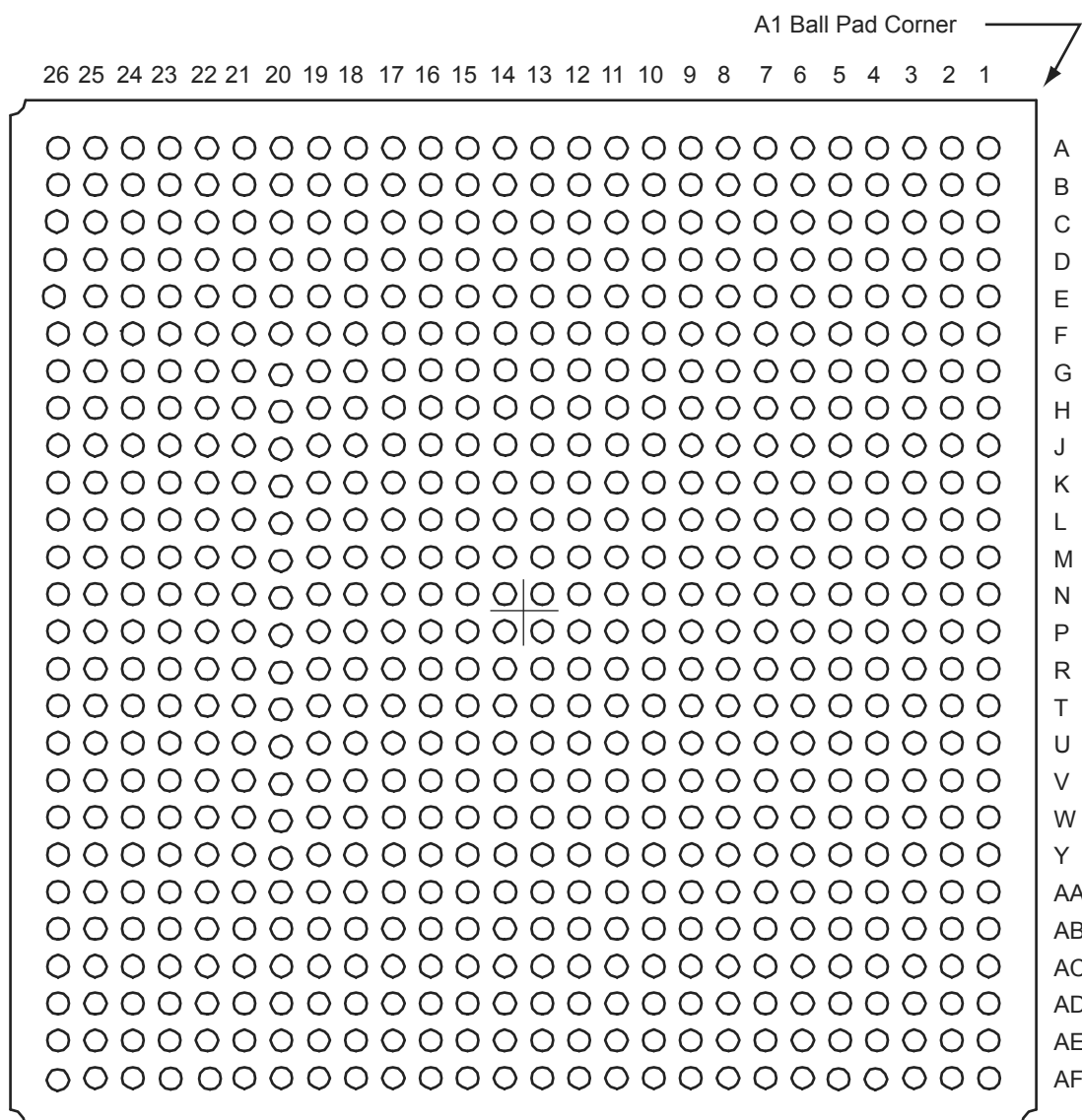
| FG484          |            | FG484          |            |
|----------------|------------|----------------|------------|
| AX250 Function | Pin Number | AX250 Function | Pin Number |
| VCCPLH         | T10        | VCCIB4         | R14        |
| VCCDA          | D14        | VCCIB5         | AA3        |
| VCCDA          | D5         | VCCIB5         | AB3        |
| VCCDA          | F16        | VCCIB5         | R10        |
| VCCDA          | G12        | VCCIB5         | R11        |
| VCCDA          | L4         | VCCIB5         | R9         |
| VCCDA          | M18        | VCCIB6         | M8         |
| VCCDA          | T11        | VCCIB6         | N8         |
| VCCDA          | T17        | VCCIB6         | P8         |
| VCCDA          | U7         | VCCIB6         | Y1         |
| VCCDA          | V14        | VCCIB6         | Y2         |
| VCCDA          | V8         | VCCIB7         | C1         |
| VCCIB0         | A3         | VCCIB7         | C2         |
| VCCIB0         | B3         | VCCIB7         | J8         |
| VCCIB0         | H10        | VCCIB7         | K8         |
| VCCIB0         | H11        | VCCIB7         | L8         |
| VCCIB0         | H9         | VCOMPLA        | D10        |
| VCCIB1         | A20        | VCOMPLB        | G10        |
| VCCIB1         | B20        | VCOMPLC        | E12        |
| VCCIB1         | H12        | VCOMPLD        | G14        |
| VCCIB1         | H13        | VCOMPLE        | W13        |
| VCCIB1         | H14        | VCOMPLF        | T13        |
| VCCIB2         | C21        | VCOMPLG        | V11        |
| VCCIB2         | C22        | VCOMPLH        | T9         |
| VCCIB2         | J15        | VPUMP          | D17        |
| VCCIB2         | K15        |                |            |
| VCCIB2         | L15        |                |            |
| VCCIB3         | M15        |                |            |
| VCCIB3         | N15        |                |            |
| VCCIB3         | P15        |                |            |
| VCCIB3         | Y21        |                |            |
| VCCIB3         | Y22        |                |            |
| VCCIB4         | AA20       |                |            |
| VCCIB4         | AB20       |                |            |
| VCCIB4         | R12        |                |            |
| VCCIB4         | R13        |                |            |

| FG484          |            |
|----------------|------------|
| AX500 Function | Pin Number |
| VCCA           | P11        |
| VCCA           | P12        |
| VCCA           | P13        |
| VCCA           | T6         |
| VCCA           | U17        |
| VCCPLA         | F10        |
| VCCPLB         | G9         |
| VCCPLC         | D13        |
| VCCPLD         | G13        |
| VCCPLE         | U13        |
| VCCPLF         | T14        |
| VCCPLG         | W10        |
| VCCPLH         | T10        |
| VCCDA          | D14        |
| VCCDA          | D5         |
| VCCDA          | F16        |
| VCCDA          | G12        |
| VCCDA          | L4         |
| VCCDA          | M18        |
| VCCDA          | T11        |
| VCCDA          | T17        |
| VCCDA          | U7         |
| VCCDA          | V14        |
| VCCDA          | V8         |
| VCCIB0         | A3         |
| VCCIB0         | B3         |
| VCCIB0         | H10        |
| VCCIB0         | H11        |
| VCCIB0         | H9         |
| VCCIB1         | A20        |
| VCCIB1         | B20        |
| VCCIB1         | H12        |
| VCCIB1         | H13        |
| VCCIB1         | H14        |
| VCCIB2         | C21        |

| FG484          |            |
|----------------|------------|
| AX500 Function | Pin Number |
| VCCIB2         | C22        |
| VCCIB2         | J15        |
| VCCIB2         | K15        |
| VCCIB2         | L15        |
| VCCIB3         | M15        |
| VCCIB3         | N15        |
| VCCIB3         | P15        |
| VCCIB3         | Y21        |
| VCCIB3         | Y22        |
| VCCIB4         | AA20       |
| VCCIB4         | AB20       |
| VCCIB4         | R12        |
| VCCIB4         | R13        |
| VCCIB4         | R14        |
| VCCIB5         | AA3        |
| VCCIB5         | AB3        |
| VCCIB5         | R10        |
| VCCIB5         | R11        |
| VCCIB5         | R9         |
| VCCIB6         | M8         |
| VCCIB6         | N8         |
| VCCIB6         | P8         |
| VCCIB6         | Y1         |
| VCCIB6         | Y2         |
| VCCIB7         | C1         |
| VCCIB7         | C2         |
| VCCIB7         | J8         |
| VCCIB7         | K8         |
| VCCIB7         | L8         |
| VCOMPLA        | D10        |
| VCOMPLB        | G10        |
| VCOMPLC        | E12        |
| VCOMPLD        | G14        |
| VCOMPLE        | W13        |
| VCOMPLF        | T13        |

| FG484          |            |
|----------------|------------|
| AX500 Function | Pin Number |
| VCOMPLG        | V11        |
| VCOMPLH        | T9         |
| VPUMP          | D17        |

## FG676



### Note

For Package Manufacturing and Environmental information, visit Resource center at <http://www.microsemi.com/soc/products/rescenter/package/index.html>.

| FG896           |            |
|-----------------|------------|
| AX1000 Function | Pin Number |
| GND             | A13        |
| GND             | A18        |
| GND             | A2         |
| GND             | A23        |
| GND             | A29        |
| GND             | A8         |
| GND             | AA10       |
| GND             | AA21       |
| GND             | AA28       |
| GND             | AA3        |
| GND             | AB2        |
| GND             | AB22       |
| GND             | AB29       |
| GND             | AB9        |
| GND             | AC1        |
| GND             | AC30       |
| GND             | AE25       |
| GND             | AE6        |
| GND             | AF26       |
| GND             | AF5        |
| GND             | AG27       |
| GND             | AG4        |
| GND             | AH10       |
| GND             | AH15       |
| GND             | AH16       |
| GND             | AH21       |
| GND             | AH28       |
| GND             | AH3        |
| GND             | AJ1        |
| GND             | AJ2        |
| GND             | AJ22       |
| GND             | AJ29       |
| GND             | AJ30       |
| GND             | AJ9        |
| GND             | AK13       |

| FG896           |            |
|-----------------|------------|
| AX1000 Function | Pin Number |
| GND             | AK18       |
| GND             | AK2        |
| GND             | AK23       |
| GND             | AK29       |
| GND             | AK8        |
| GND             | B1         |
| GND             | B2         |
| GND             | B22        |
| GND             | B29        |
| GND             | B30        |
| GND             | B9         |
| GND             | C10        |
| GND             | C15        |
| GND             | C16        |
| GND             | C21        |
| GND             | C28        |
| GND             | C3         |
| GND             | D27        |
| GND             | D28        |
| GND             | D4         |
| GND             | E26        |
| GND             | E5         |
| GND             | H1         |
| GND             | H30        |
| GND             | J2         |
| GND             | J22        |
| GND             | J29        |
| GND             | J9         |
| GND             | K10        |
| GND             | K21        |
| GND             | K28        |
| GND             | K3         |
| GND             | L11        |
| GND             | L20        |
| GND             | M12        |

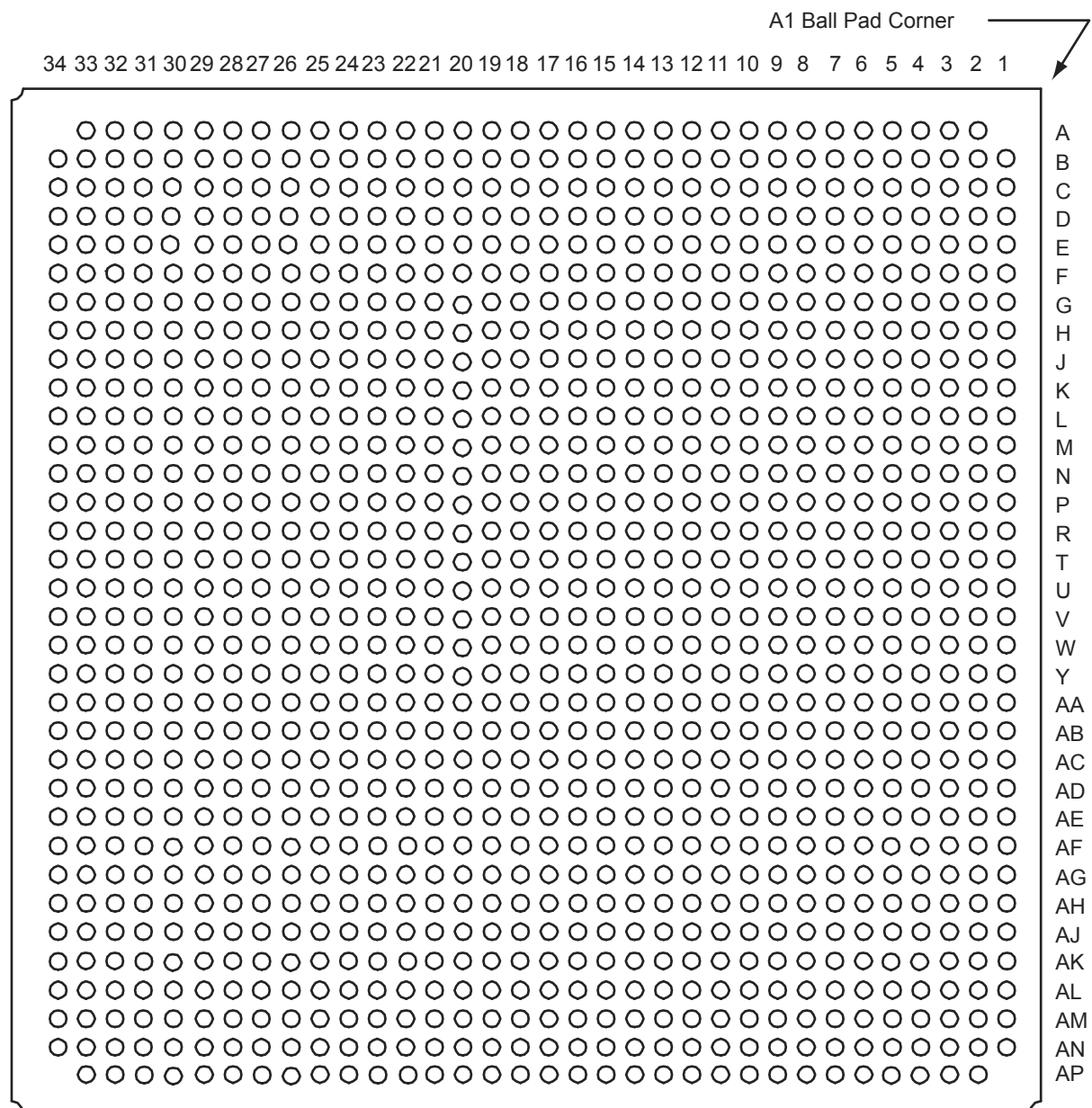
| FG896           |            |
|-----------------|------------|
| AX1000 Function | Pin Number |
| GND             | M13        |
| GND             | M14        |
| GND             | M15        |
| GND             | M16        |
| GND             | M17        |
| GND             | M18        |
| GND             | M19        |
| GND             | N1         |
| GND             | N12        |
| GND             | N13        |
| GND             | N14        |
| GND             | N15        |
| GND             | N16        |
| GND             | N17        |
| GND             | N18        |
| GND             | N19        |
| GND             | N30        |
| GND             | P12        |
| GND             | P13        |
| GND             | P14        |
| GND             | P15        |
| GND             | P16        |
| GND             | P17        |
| GND             | P18        |
| GND             | P19        |
| GND             | R12        |
| GND             | R13        |
| GND             | R14        |
| GND             | R15        |
| GND             | R16        |
| GND             | R17        |
| GND             | R18        |
| GND             | R19        |
| GND             | R28        |
| GND             | R3         |

| FG896           |            |
|-----------------|------------|
| AX2000 Function | Pin Number |
| <b>Bank 0</b>   |            |
| IO00NB0F0       | B4         |
| IO00PB0F0       | A4         |
| IO01NB0F0       | F8         |
| IO01PB0F0       | F7         |
| IO02NB0F0       | D6         |
| IO02PB0F0       | E6         |
| IO04NB0F0       | A5         |
| IO04PB0F0       | B5         |
| IO05NB0F0       | H8         |
| IO05PB0F0       | G8         |
| IO06NB0F0       | D7         |
| IO06PB0F0       | E7         |
| IO07NB0F0       | D8         |
| IO07PB0F0       | E8         |
| IO08NB0F0       | C7         |
| IO08PB0F0       | C6         |
| IO09NB0F0       | G9         |
| IO09PB0F0       | H9         |
| IO10NB0F0       | A6         |
| IO10PB0F0       | B6         |
| IO11NB0F0       | H10        |
| IO11PB0F0       | G10        |
| IO12NB0F1       | E9         |
| IO12PB0F1       | F9         |
| IO13NB0F1       | E10        |
| IO13PB0F1       | F10        |
| IO15NB0F1       | F11        |
| IO15PB0F1       | G11        |
| IO16NB0F1       | A7         |
| IO16PB0F1       | B7         |
| IO17NB0F1       | D10        |
| IO17PB0F1       | D9         |
| IO18NB0F1       | C9         |
| IO18PB0F1       | C8         |

| FG896            |            |
|------------------|------------|
| AX2000 Function  | Pin Number |
| IO19NB0F1        | D11        |
| IO19PB0F1        | E11        |
| IO20PB0F1        | B8         |
| IO21NB0F1        | H12        |
| IO21PB0F1        | H11        |
| IO23NB0F2        | A10        |
| IO23PB0F2        | A9         |
| IO25NB0F2        | F12        |
| IO25PB0F2        | G12        |
| IO26NB0F2        | B11        |
| IO26PB0F2        | B10        |
| IO27NB0F2        | D12        |
| IO27PB0F2        | E12        |
| IO28NB0F2        | C12        |
| IO28PB0F2        | C11        |
| IO30NB0F2        | A12        |
| IO30PB0F2        | A11        |
| IO31NB0F2        | F13        |
| IO31PB0F2        | G13        |
| IO33NB0F2        | H13        |
| IO33PB0F2        | J13        |
| IO34NB0F3        | B13        |
| IO34PB0F3        | B12        |
| IO37NB0F3        | E14        |
| IO37PB0F3        | E13        |
| IO38NB0F3        | B14        |
| IO38PB0F3        | A14        |
| IO39NB0F3        | H14        |
| IO39PB0F3        | J14        |
| IO40NB0F3        | B15        |
| IO40PB0F3        | A15        |
| IO41NB0F3/HCLKAN | C14        |
| IO41PB0F3/HCLKAP | D14        |
| IO42NB0F3/HCLKBN | E15        |
| IO42PB0F3/HCLKBP | D15        |

| FG896            |            |
|------------------|------------|
| AX2000 Function  | Pin Number |
| <b>Bank 1</b>    |            |
| IO43NB1F4/HCLKCN | E17        |
| IO43PB1F4/HCLKCP | E16        |
| IO44NB1F4/HCLKDN | C17        |
| IO44PB1F4/HCLKDP | D17        |
| IO45NB1F4        | A16        |
| IO45PB1F4        | B16        |
| IO47NB1F4        | H17        |
| IO47PB1F4        | J17        |
| IO48NB1F4        | A17        |
| IO48PB1F4        | B17        |
| IO49NB1F4        | H18        |
| IO49PB1F4        | J18        |
| IO51NB1F4        | F18        |
| IO51PB1F4        | G18        |
| IO52NB1F4        | B18        |
| IO53NB1F4        | D18        |
| IO53PB1F4        | C18        |
| IO55NB1F5        | H19        |
| IO55PB1F5        | G19        |
| IO56NB1F5        | B19        |
| IO56PB1F5        | A19        |
| IO57NB1F5        | E20        |
| IO57PB1F5        | E19        |
| IO58NB1F5        | C20        |
| IO58PB1F5        | C19        |
| IO59NB1F5        | B20        |
| IO59PB1F5        | A20        |
| IO61NB1F5        | F20        |
| IO61PB1F5        | F19        |
| IO62NB1F5        | A22        |
| IO62PB1F5        | A21        |
| IO63NB1F5        | D21        |
| IO63PB1F5        | D20        |
| IO65NB1F6        | G20        |

## FG1152

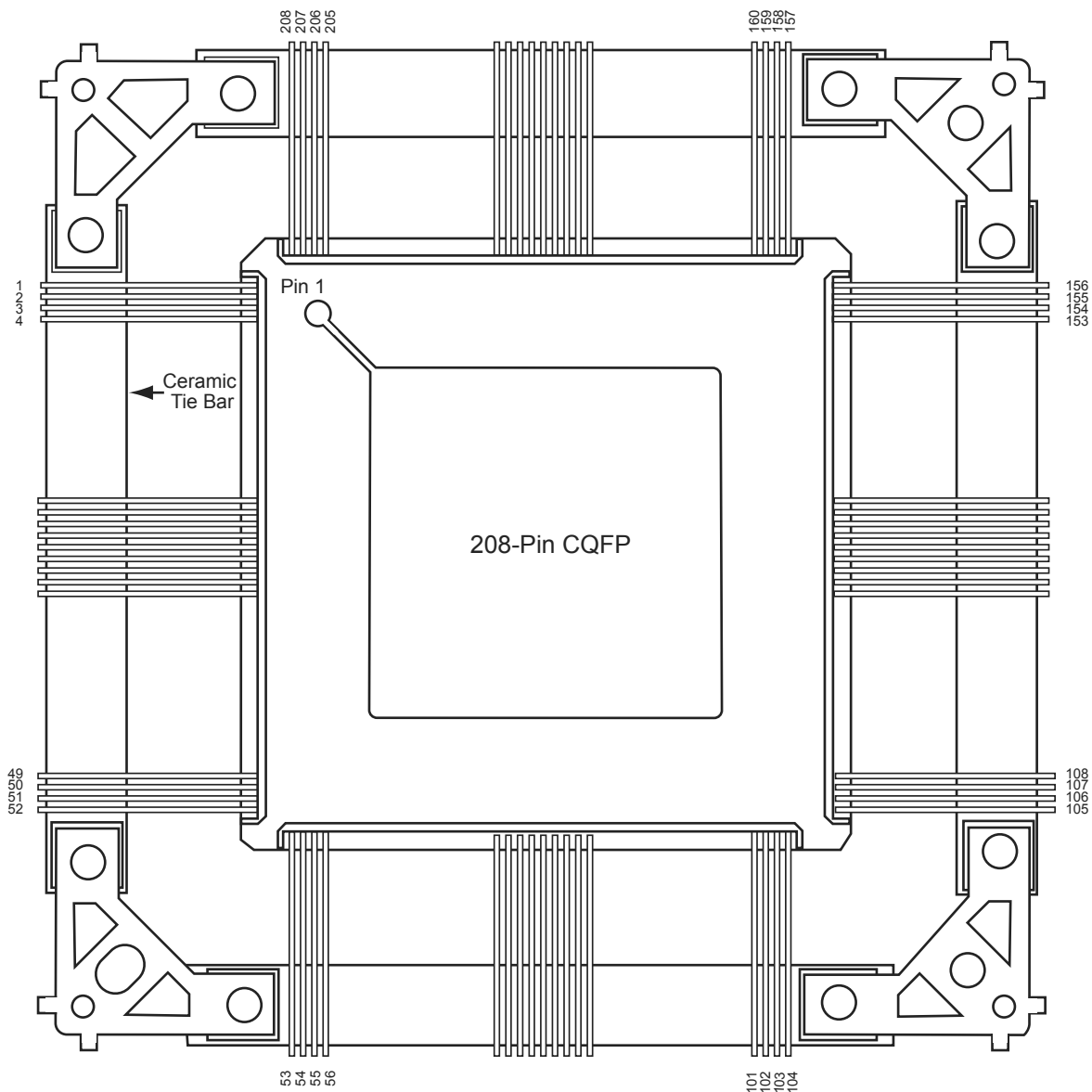


### Note

For Package Manufacturing and Environmental information, visit Resource center at <http://www.microsemi.com/soc/products/rescenter/package/index.html>.

| FG1152          |            | FG1152          |            | FG1152          |            |
|-----------------|------------|-----------------|------------|-----------------|------------|
| AX2000 Function | Pin Number | AX2000 Function | Pin Number | AX2000 Function | Pin Number |
| IO103PB2F9      | M28        | IO121NB2F11     | T27        | IO138NB3F12     | Y29        |
| IO104NB2F9      | M34        | IO121PB2F11     | T26        | IO138PB3F12     | W29        |
| IO104PB2F9      | L34        | IO122NB2F11     | T30        | IO139NB3F13     | Y27        |
| IO105NB2F9      | P27        | IO122PB2F11     | T29        | IO139PB3F13     | W27        |
| IO105PB2F9      | N27        | IO123NB2F11     | U28        | IO140NB3F13     | AA33       |
| IO106NB2F9      | M32        | IO123PB2F11     | T28        | IO140PB3F13     | Y33        |
| IO106PB2F9      | M31        | IO124NB2F11     | T31        | IO141NB3F13     | Y25        |
| IO107NB2F10     | P25        | IO124PB2F11     | T32        | IO141PB3F13     | Y24        |
| IO107PB2F10     | P26        | IO125NB2F11     | U24        | IO142NB3F13     | AA31       |
| IO108NB2F10     | N33        | IO125PB2F11     | U25        | IO142PB3F13     | Y31        |
| IO108PB2F10     | M33        | IO126NB2F11     | U33        | IO143NB3F13     | AA28       |
| IO109NB2F10     | P29        | IO126PB2F11     | U34        | IO143PB3F13     | Y28        |
| IO109PB2F10     | N29        | IO127NB2F11     | U26        | IO144NB3F13     | AA34       |
| IO110NB2F10     | P30        | IO127PB2F11     | U27        | IO144PB3F13     | Y34        |
| IO110PB2F10     | N30        | IO128NB2F11     | U31        | IO145NB3F13     | AA26       |
| IO111NB2F10     | R24        | IO128PB2F11     | U32        | IO145PB3F13     | Y26        |
| IO111PB2F10     | R25        | <b>Bank 3</b>   |            | IO146NB3F13     | AA29       |
| IO112NB2F10     | P31        | IO129NB3F12     | V29        | IO146PB3F13     | AA30       |
| IO112PB2F10     | N31        | IO129PB3F12     | U29        | IO147NB3F13     | AB30       |
| IO113NB2F10     | R28        | IO130NB3F12     | V31        | IO147PB3F13     | AB29       |
| IO113PB2F10     | P28        | IO130PB3F12     | V32        | IO148NB3F13     | AB32       |
| IO114NB2F10     | P32        | IO131NB3F12     | V24        | IO148PB3F13     | AA32       |
| IO114PB2F10     | N32        | IO131PB3F12     | V25        | IO149NB3F13     | AB27       |
| IO115NB2F10     | R30        | IO132NB3F12     | W28        | IO149PB3F13     | AA27       |
| IO115PB2F10     | R29        | IO132PB3F12     | V28        | IO150NB3F14     | AC31       |
| IO116NB2F10     | P34        | IO133NB3F12     | W26        | IO150PB3F14     | AB31       |
| IO116PB2F10     | P33        | IO133PB3F12     | V26        | IO151NB3F14     | AD33       |
| IO117NB2F10     | R27        | IO134NB3F12     | W33        | IO151PB3F14     | AC33       |
| IO117PB2F10     | R26        | IO134PB3F12     | V33        | IO152NB3F14     | AC28       |
| IO118NB2F11     | R34        | IO135NB3F12     | W25        | IO152PB3F14     | AB28       |
| IO118PB2F11     | R33        | IO135PB3F12     | W24        | IO153NB3F14     | AB25       |
| IO119NB2F11     | T24        | IO136NB3F12     | W31        | IO153PB3F14     | AA25       |
| IO119PB2F11     | T25        | IO136PB3F12     | W32        | IO154NB3F14     | AD32       |
| IO120NB2F11     | T33        | IO137NB3F12     | Y30        | IO154PB3F14     | AC32       |
| IO120PB2F11     | T34        | IO137PB3F12     | W30        | IO155NB3F14     | AD29       |

## CQ208



### Note

For Package Manufacturing and Environmental information, visit Resource center at <http://www.microsemi.com/soc/products/rescenter/package/index.html>.

| CQ352          |            |
|----------------|------------|
| AX500 Function | Pin Number |
| VCCDA          | 346        |
| VCCIB0         | 321        |
| VCCIB0         | 333        |
| VCCIB0         | 344        |
| VCCIB1         | 273        |
| VCCIB1         | 285        |
| VCCIB1         | 297        |
| VCCIB2         | 227        |
| VCCIB2         | 239        |
| VCCIB2         | 245        |
| VCCIB2         | 257        |
| VCCIB3         | 185        |
| VCCIB3         | 197        |
| VCCIB3         | 203        |
| VCCIB3         | 215        |
| VCCIB4         | 144        |
| VCCIB4         | 156        |
| VCCIB4         | 168        |
| VCCIB5         | 96         |
| VCCIB5         | 108        |
| VCCIB5         | 120        |
| VCCIB6         | 50         |
| VCCIB6         | 62         |
| VCCIB6         | 68         |
| VCCIB6         | 80         |
| VCCIB7         | 8          |
| VCCIB7         | 20         |
| VCCIB7         | 26         |
| VCCIB7         | 38         |
| VCCPLA         | 317        |
| VCCPLB         | 315        |
| VCCPLC         | 303        |
| VCCPLD         | 301        |
| VCCPLE         | 140        |
| VCCPLF         | 138        |

| CQ352          |            |
|----------------|------------|
| AX500 Function | Pin Number |
| VCCPLG         | 126        |
| VCCPLH         | 124        |
| VCOMPLA        | 318        |
| VCOMPLB        | 316        |
| VCOMPLC        | 304        |
| VCOMPLD        | 302        |
| VCOMPLE        | 141        |
| VCOMPLF        | 139        |
| VCOMPLG        | 127        |
| VCOMPLH        | 125        |
| VPUMP          | 267        |

| CQ352             |            |
|-------------------|------------|
| AX2000 Function   | Pin Number |
| IO182PB4F17       | 171        |
| IO183NB4F17       | 166        |
| IO183PB4F17       | 167        |
| IO184NB4F17       | 164        |
| IO184PB4F17       | 165        |
| IO185NB4F17       | 160        |
| IO185PB4F17       | 161        |
| IO190NB4F17       | 158        |
| IO190PB4F17       | 159        |
| IO191NB4F17       | 154        |
| IO191PB4F17       | 155        |
| IO192NB4F17       | 152        |
| IO192PB4F17       | 153        |
| IO207NB4F19       | 146        |
| IO207PB4F19       | 147        |
| IO212NB4F19/CLKEN | 142        |
| IO212PB4F19/CLKEP | 143        |
| IO213NB4F19/CLKFN | 136        |
| IO213PB4F19/CLKFP | 137        |
| <b>Bank 5</b>     |            |
| IO214NB5F20/CLKGN | 128        |
| IO214PB5F20/CLKGP | 129        |
| IO215NB5F20/CLKHN | 122        |
| IO215PB5F20/CLKHP | 123        |
| IO217NB5F20       | 118        |
| IO217PB5F20       | 119        |
| IO236NB5F22       | 110        |
| IO236PB5F22       | 111        |
| IO237NB5F22       | 112        |
| IO237PB5F22       | 113        |
| IO238NB5F22       | 104        |
| IO238PB5F22       | 105        |
| IO239NB5F22       | 106        |
| IO239PB5F22       | 107        |
| IO240NB5F22       | 100        |

| CQ352           |            |
|-----------------|------------|
| AX2000 Function | Pin Number |
| IO240PB5F22     | 101        |
| IO242NB5F22     | 94         |
| IO242PB5F22     | 95         |
| IO243NB5F22     | 98         |
| IO243PB5F22     | 99         |
| IO244NB5F22     | 92         |
| IO244PB5F22     | 93         |
| <b>Bank 6</b>   |            |
| IO257PB6F24     | 86         |
| IO258NB6F24     | 84         |
| IO258PB6F24     | 85         |
| IO261NB6F24     | 82         |
| IO261PB6F24     | 83         |
| IO262NB6F24     | 78         |
| IO262PB6F24     | 79         |
| IO265NB6F24     | 76         |
| IO265PB6F24     | 77         |
| IO279NB6F26     | 72         |
| IO279PB6F26     | 73         |
| IO280NB6F26     | 70         |
| IO280PB6F26     | 71         |
| IO281NB6F26     | 66         |
| IO281PB6F26     | 67         |
| IO282NB6F26     | 64         |
| IO282PB6F26     | 65         |
| IO284NB6F26     | 60         |
| IO284PB6F26     | 61         |
| IO285NB6F26     | 58         |
| IO285PB6F26     | 59         |
| IO286NB6F26     | 54         |
| IO286PB6F26     | 55         |
| IO287NB6F26     | 52         |
| IO287PB6F26     | 53         |
| IO294NB6F27     | 48         |
| IO294PB6F27     | 49         |

| CQ352                |            |
|----------------------|------------|
| AX2000 Function      | Pin Number |
| IO296NB6F27          | 46         |
| IO296PB6F27          | 47         |
| <b>Bank 7</b>        |            |
| IO300NB7F28          | 42         |
| IO300PB7F28          | 43         |
| IO303NB7F28          | 40         |
| IO303PB7F28          | 41         |
| IO310NB7F29          | 34         |
| IO310PB7F29          | 35         |
| IO311NB7F29          | 36         |
| IO311PB7F29          | 37         |
| IO312NB7F29          | 28         |
| IO312PB7F29          | 29         |
| IO315NB7F29          | 30         |
| IO315PB7F29          | 31         |
| IO316NB7F29          | 22         |
| IO316PB7F29          | 23         |
| IO317NB7F29          | 24         |
| IO317PB7F29          | 25         |
| IO318NB7F29          | 18         |
| IO318PB7F29          | 19         |
| IO320NB7F29          | 16         |
| IO320PB7F29          | 17         |
| IO334NB7F31          | 10         |
| IO334PB7F31          | 11         |
| IO335NB7F31          | 12         |
| IO335PB7F31          | 13         |
| IO338NB7F31          | 6          |
| IO338PB7F31          | 7          |
| IO341NB7F31          | 4          |
| IO341PB7F31          | 5          |
| <b>Dedicated I/O</b> |            |
| GND                  | 1          |
| GND                  | 9          |
| GND                  | 15         |

| CG624           |            | CG624            |            | CG624           |            |
|-----------------|------------|------------------|------------|-----------------|------------|
| AX1000 Function | Pin Number | AX1000 Function  | Pin Number | AX1000 Function | Pin Number |
| <b>Bank 0</b>   |            |                  |            |                 |            |
| IO00NB0F0       | F8         | IO23NB0F2        | E11        | IO42NB1F4       | G21        |
| IO00PB0F0       | F7         | IO23PB0F2        | F11        | IO42PB1F4       | G20        |
| IO02NB0F0       | G7         | IO24NB0F2        | D7         | IO43NB1F4       | A16        |
| IO02PB0F0       | G6         | IO24PB0F2        | E7         | IO43PB1F4       | A15        |
| IO04NB0F0       | E9         | IO25PB0F2        | B12        | IO44NB1F4       | A20        |
| IO04PB0F0       | D8         | IO26NB0F2        | H11        | IO44PB1F4       | A19        |
| IO06NB0F0       | G9         | IO26PB0F2        | G11        | IO45NB1F4       | B17        |
| IO06PB0F0       | G8         | IO27NB0F2        | C11        | IO45PB1F4       | B16        |
| IO07PB0F0       | B6         | IO27PB0F2        | B8         | IO46NB1F4       | G17        |
| IO08NB0F0       | F10        | IO28NB0F2        | J13        | IO46PB1F4       | H17        |
| IO08PB0F0       | F9         | IO28PB0F2        | K13        | IO47NB1F4       | A17        |
| IO09PB0F0       | C7         | IO29NB0F2        | J8         | IO48NB1F4       | C19        |
| IO10NB0F0       | H8         | IO29PB0F2        | J7         | IO48PB1F4       | C18        |
| IO10PB0F0       | H7         | IO30NB0F2/HCLKAN | G13        | IO49NB1F4       | B20        |
| IO11NB0F0       | D10        | IO30PB0F2/HCLKAP | G12        | IO49PB1F4       | B19        |
| IO11PB0F0       | D9         | IO31NB0F2/HCLKBN | C13        | IO50NB1F4       | H20        |
| IO12NB0F1       | B5         | IO31PB0F2/HCLKBP | C12        | IO50PB1F4       | H19        |
| IO12PB0F1       | B4         | <b>Bank 1</b>    |            | IO51NB1F4       | A22        |
| IO13NB0F1       | A7         | IO32NB1F3/HCLKCN | G15        | IO51PB1F4       | A21        |
| IO13PB0F1       | A6         | IO32PB1F3/HCLKCP | G14        | IO52NB1F4       | C21        |
| IO14NB0F1       | C9         | IO33NB1F3/HCLKDN | B14        | IO52PB1F4       | C20        |
| IO14PB0F1       | C8         | IO33PB1F3/HCLKDP | B13        | IO53NB1F4       | B22        |
| IO15PB0F1       | B7         | IO34NB1F3        | G16        | IO53PB1F4       | B21        |
| IO16NB0F1       | A5         | IO34PB1F3        | H16        | IO54NB1F5       | J18        |
| IO16PB0F1       | A4         | IO35NB1F3        | C17        | IO54PB1F5       | J19        |
| IO17NB0F1       | A9         | IO35PB1F3        | B18        | IO55NB1F5       | D18        |
| IO17PB0F1       | B9         | IO36NB1F3        | H18        | IO55PB1F5       | D17        |
| IO18NB0F1       | D12        | IO36PB1F3        | H15        | IO56NB1F5       | F20        |
| IO18PB0F1       | D11        | IO37NB1F3        | H13        | IO56PB1F5       | F19        |
| IO20NB0F1       | B11        | IO38NB1F3        | E15        | IO58NB1F5       | E17        |
| IO20PB0F1       | B10        | IO38PB1F3        | F15        | IO58PB1F5       | F17        |
| IO21NB0F1       | A11        | IO39NB1F3        | D14        | IO60NB1F5       | D20        |
| IO21PB0F1       | A10        | IO39PB1F3        | C14        | IO60PB1F5       | D19        |
| IO22NB0F2       | H10        | IO40NB1F3        | D16        | IO62NB1F5       | E18        |
| IO22PB0F2       | H9         | IO40PB1F3        | D15        | IO62PB1F5       | F18        |
|                 |            | IO41NB1F4        | F16        | IO63NB1F5       | G19        |

| CG624           |            | CG624           |            | CG624           |            |
|-----------------|------------|-----------------|------------|-----------------|------------|
| AX1000 Function | Pin Number | AX1000 Function | Pin Number | AX1000 Function | Pin Number |
| IO63PB1F5       | G18        | IO84NB2F7       | M20        | IO105NB3F9      | R23        |
| <b>Bank 2</b>   |            | IO84PB2F7       | M21        | IO105PB3F9      | P23        |
| IO64NB2F6       | M17        | IO86NB2F8       | E25        | IO106NB3F9      | R19        |
| IO64PB2F6       | G22        | IO86PB2F8       | D25        | IO106PB3F9      | R20        |
| IO65NB2F6       | J21        | IO87NB2F8       | L24        | IO107NB3F10     | AB24       |
| IO65PB2F6       | J20        | IO87PB2F8       | K24        | IO108NB3F10     | R25        |
| IO66NB2F6       | L23        | IO88NB2F8       | G24        | IO108PB3F10     | P25        |
| IO66PB2F6       | K20        | IO88PB2F8       | F24        | IO109NB3F10     | U25        |
| IO67NB2F6       | F23        | IO89NB2F8       | J25        | IO109PB3F10     | T25        |
| IO67PB2F6       | E23        | IO90NB2F8       | G25        | IO110NB3F10     | U24        |
| IO68NB2F6       | L18        | IO90PB2F8       | F25        | IO110PB3F10     | U23        |
| IO68PB2F6       | K18        | IO91NB2F8       | L25        | IO112NB3F10     | T24        |
| IO70NB2F6       | E24        | IO91PB2F8       | K25        | IO112PB3F10     | R24        |
| IO70PB2F6       | D24        | IO92NB2F8       | J24        | IO113NB3F10     | Y25        |
| IO71NB2F6       | H23        | IO92PB2F8       | H24        | IO113PB3F10     | W25        |
| IO71PB2F6       | G23        | IO93PB2F8       | J23        | IO114NB3F10     | V23        |
| IO72NB2F6       | L19        | IO94NB2F8       | N24        | IO114PB3F10     | V24        |
| IO72PB2F6       | K19        | IO94PB2F8       | M24        | IO116NB3F10     | AA24       |
| IO74NB2F7       | J22        | IO95NB2F8       | N25        | IO116PB3F10     | Y24        |
| IO74PB2F7       | H22        | IO95PB2F8       | M25        | IO117NB3F10     | AB25       |
| IO75NB2F7       | N23        | <b>Bank 3</b>   |            | IO117PB3F10     | AA25       |
| IO75PB2F7       | M23        | IO96NB3F9       | T18        | IO118NB3F11     | T20        |
| IO76NB2F7       | N17        | IO96PB3F9       | R18        | IO118PB3F11     | R21        |
| IO76PB2F7       | N16        | IO97NB3F9       | N20        | IO120NB3F11     | W22        |
| IO77NB2F7       | L22        | IO97PB3F9       | P24        | IO120PB3F11     | W23        |
| IO77PB2F7       | K22        | IO98NB3F9       | P20        | IO122NB3F11     | V22        |
| IO78NB2F7       | M19        | IO98PB3F9       | P19        | IO122PB3F11     | U22        |
| IO78PB2F7       | M18        | IO99NB3F9       | P21        | IO124NB3F11     | Y23        |
| IO79NB2F7       | N19        | IO100NB3F9      | T22        | IO124PB3F11     | AA23       |
| IO79PB2F7       | N18        | IO100PB3F9      | W24        | IO126NB3F11     | V21        |
| IO80NB2F7       | L21        | IO101NB3F9      | R22        | IO126PB3F11     | U21        |
| IO80PB2F7       | L20        | IO101PB3F9      | P22        | IO128NB3F11     | Y22        |
| IO82NB2F7       | P18        | IO102NB3F9      | U19        | IO128PB3F11     | Y21        |
| IO82PB2F7       | P17        | IO102PB3F9      | T19        | <b>Bank 4</b>   |            |
| IO83NB2F7       | N22        | IO104NB3F9      | V20        | IO129NB4F12     | W20        |
| IO83PB2F7       | M22        | IO104PB3F9      | U20        | IO129PB4F12     | Y20        |

| CG624           |            | CG624           |            | CG624           |            |
|-----------------|------------|-----------------|------------|-----------------|------------|
| AX1000 Function | Pin Number | AX1000 Function | Pin Number | AX1000 Function | Pin Number |
| VCCA            | U17        | VCCIB2          | D23        | VCCIB7          | E4         |
| VCCA            | U9         | VCCIB2          | E22        | VCCIB7          | K9         |
| VCCA            | Y4         | VCCIB2          | K17        | VCCIB7          | L9         |
| VCCDA           | A12        | VCCIB2          | L17        | VCCIB7          | M10        |
| VCCDA           | AA13       | VCCIB2          | M16        | VCCPLA          | E12        |
| VCCDA           | AA15       | VCCIB3          | AA22       | VCCPLB          | J12        |
| VCCDA           | AA7        | VCCIB3          | AB23       | VCCPLC          | E14        |
| VCCDA           | AC11       | VCCIB3          | AC24       | VCCPLD          | H14        |
| VCCDA           | AD11       | VCCIB3          | AC25       | VCCPLE          | Y14        |
| VCCDA           | AE17       | VCCIB3          | P16        | VCCPLF          | U14        |
| VCCDA           | B15        | VCCIB3          | R17        | VCCPLG          | Y12        |
| VCCDA           | C15        | VCCIB3          | T17        | VCCPLH          | U12        |
| VCCDA           | C6         | VCCIB4          | AB21       | VCOMPLA         | F12        |
| VCCDA           | D13        | VCCIB4          | AC22       | VCOMPLB         | H12        |
| VCCDA           | E13        | VCCIB4          | AD23       | VCOMPLC         | F14        |
| VCCDA           | E19        | VCCIB4          | AE23       | VCOMPLD         | J14        |
| VCCDA           | G5         | VCCIB4          | T14        | VCOMPLE         | AA14       |
| VCCDA           | N21        | VCCIB4          | U15        | VCOMPLF         | V14        |
| VCCDA           | N5         | VCCIB4          | U16        | VCOMPLG         | AA12       |
| VCCDA           | W21        | VCCIB5          | AB5        | VCOMPLH         | V12        |
| VCCIB0          | A3         | VCCIB5          | AC4        | VPUMP           | E20        |
| VCCIB0          | B3         | VCCIB5          | AD3        |                 |            |
| VCCIB0          | C4         | VCCIB5          | AE3        |                 |            |
| VCCIB0          | D5         | VCCIB5          | T12        |                 |            |
| VCCIB0          | J10        | VCCIB5          | U10        |                 |            |
| VCCIB0          | J11        | VCCIB5          | U11        |                 |            |
| VCCIB0          | K12        | VCCIB6          | AA4        |                 |            |
| VCCIB1          | A23        | VCCIB6          | AB3        |                 |            |
| VCCIB1          | B23        | VCCIB6          | AC1        |                 |            |
| VCCIB1          | C22        | VCCIB6          | AC2        |                 |            |
| VCCIB1          | D21        | VCCIB6          | P10        |                 |            |
| VCCIB1          | J15        | VCCIB6          | R9         |                 |            |
| VCCIB1          | J16        | VCCIB6          | T9         |                 |            |
| VCCIB1          | K14        | VCCIB7          | C1         |                 |            |
| VCCIB2          | C24        | VCCIB7          | C2         |                 |            |
| VCCIB2          | C25        | VCCIB7          | D3         |                 |            |