

XCR Series CPLDs — 3 V and 5 V Fast Zero Power CoolRunner™ Devices (Continued)

XPLA3 CoolRunner CPLD Family (Continued)

| Mfr.'s Type |                    |                    | Spd. Grd. PD (ns) | No. of Lds. | No. of Macrocells | No. of Fncn. Blks. | No. of Reg. | No. of I/O |
|-------------|--------------------|--------------------|-------------------|-------------|-------------------|--------------------|-------------|------------|
| PLCC        | QFP                | BGA                |                   |             |                   |                    |             |            |
| —           | XCR3128XL-7TQ144C  | XCR3128XL-7CS144C  | 7.5               | 144         | 128               | 8                  | 128         | 108        |
| —           | XCR3128XL-10TQ144C | XCR3128XL-10CS144C | 10.0              | 144         | 128               | 8                  | 128         | 108        |
| —           | XCR3256XL-7TQ144C  | —                  | 7.5               | 144         | 256               | 16                 | 256         | 120        |
| —           | XCR3256XL-10TQ144C | —                  | 10.0              | 144         | 256               | 16                 | 256         | 120        |
| —           | XCR3256XL-12TQ144C | —                  | 12.0              | 144         | 256               | 16                 | 256         | 120        |
| —           | XCR3256XL-7PQ208C  | —                  | 7.5               | 208         | 256               | 16                 | 256         | 164        |
| —           | XCR3256XL-10PQ208C | —                  | 10.0              | 208         | 256               | 16                 | 256         | 164        |
| —           | XCR3256XL-12PQ208C | —                  | 12.0              | 208         | 256               | 16                 | 256         | 164        |
| —           | —                  | XCR3256XL-7CS280C  | 7.5               | 280         | 256               | 16                 | 256         | 164        |
| —           | —                  | XCR3256XL-10CS280C | 10.0              | 280         | 256               | 16                 | 256         | 164        |
| —           | —                  | XCR3256XL-12CS280C | 12.0              | 280         | 256               | 16                 | 256         | 164        |
| —           | XCR3384XL-7PQ208C  | —                  | 7.5               | 208         | 384               | 24                 | 384         | 164        |
| —           | XCR3384XL-10PQ208C | —                  | 10.0              | 208         | 384               | 24                 | 384         | 164        |
| —           | XCR3384X-12PQ208C  | —                  | 12.0              | 208         | 384               | 24                 | 384         | 164        |
| —           | —                  | XCR3384XL-7FG256C  | 7.5               | 256         | 384               | 24                 | 384         | 212        |
| —           | —                  | XCR3384XL-10FG256C | 10.0              | 256         | 384               | 24                 | 384         | 212        |
| —           | —                  | XCR3384X-12FG256C  | 12.0              | 256         | 384               | 24                 | 384         | 212        |
| —           | —                  | XCR3384XL-7CS280C  | 7.5               | 280         | 384               | 24                 | 384         | 220        |
| —           | —                  | XCR3384XL-10CS280C | 10.0              | 280         | 384               | 24                 | 384         | 220        |
| —           | —                  | XCR3384XL-12CS280C | 12.0              | 280         | 384               | 24                 | 384         | 220        |

XC9500 and XC9500XL CPLDs — 3.3 V and 5 V In-System Programmable, High Performance

XC9500/XL CMOS CPLDs  
Features and Performance

|                        | XC9536/XL | XC9572/XL | XC95108/XL | XC95144/XL | XC95216/XL | XC95288/XL |
|------------------------|-----------|-----------|------------|------------|------------|------------|
| Output Drive (mA)      | 24        | 24        | 24         | 24         | 24         | 24         |
| UTAG (IEEE 1149.1)     | Y         | Y         | Y          | Y          | Y          | Y          |
| Dedicated Arithmetic   | N         | N         | N          | N          | N          | N          |
| Quiescent Current (mA) | 30        | 65        | 100        | 200        | 200        | 300        |
| Fastest Speed Grade    | –5        | –7        | –7         | –7         | –10        | –15        |

XC9500/XL CMOS CPLD Family

| Mfr.'s Type      |                    |                    |                    | Speed Grade Tpid (ns) | No. of Leads | No. of Macrocells | No. of Function Blocks | No. of Registers | No of I/O |
|------------------|--------------------|--------------------|--------------------|-----------------------|--------------|-------------------|------------------------|------------------|-----------|
| PLCC             | QFP                | BGA                | CSP                |                       |              |                   |                        |                  |           |
| XC95108-7PC84C   | XC95108-7PQ100C    | —                  | —                  | 7.5                   | 84/100       | 108               | 6                      | 108              | 69/81     |
| XC95108-10PC84C  | XC95108-10PQ100C   | —                  | —                  | 10.0                  | 84/100       | 108               | 6                      | 108              | 69/81     |
| XC95108-15PC84C  | XC95108-15PQ100C   | —                  | —                  | 15.0                  | 84/100       | 108               | 6                      | 108              | 69/81     |
| XC95108-20PC84C  | XC95108-20PQ100C   | —                  | —                  | 20.0                  | 84/100       | 108               | 6                      | 108              | 69/81     |
| —                | XC95108-7TQ100C    | —                  | —                  | 7.5                   | 100          | 108               | 6                      | 108              | 81        |
| —                | XC95108-10TQ100C   | —                  | —                  | 10.0                  | 100          | 108               | 6                      | 108              | 81        |
| —                | XC95108-15TQ100C   | —                  | —                  | 15.0                  | 100          | 108               | 6                      | 108              | 81        |
| —                | XC95108-20TQ100C   | —                  | —                  | 20.0                  | 100          | 108               | 6                      | 108              | 81        |
| —                | XC95108-7PQ160C    | —                  | —                  | 7.5                   | 160          | 108               | 6                      | 108              | 108       |
| —                | XC95108-10PQ160C   | —                  | —                  | 10.0                  | 160          | 108               | 6                      | 108              | 108       |
| —                | XC95108-15PQ160C   | —                  | —                  | 15.0                  | 160          | 108               | 6                      | 108              | 108       |
| —                | XC95108-20PQ160C   | —                  | —                  | 20.0                  | 160          | 108               | 6                      | 108              | 108       |
| —                | XC95144-7PQ100C    | —                  | —                  | 7.5                   | 100          | 144               | 8                      | 144              | 81        |
| —                | XC95144-10PQ100C   | —                  | —                  | 10.0                  | 100          | 144               | 8                      | 144              | 81        |
| —                | XC95144-15PQ100C   | —                  | —                  | 15.0                  | 100          | 144               | 8                      | 144              | 81        |
| —                | XC95144-20PQ100C   | —                  | —                  | 20.0                  | 100          | 144               | 8                      | 144              | 81        |
| —                | XC95144-7PQ160C    | —                  | —                  | 7.5                   | 160          | 144               | 8                      | 144              | 133       |
| —                | XC95144-10PQ160C   | —                  | —                  | 10.0                  | 160          | 144               | 8                      | 144              | 133       |
| —                | XC95144-15PQ160C   | —                  | —                  | 15.0                  | 160          | 144               | 8                      | 144              | 133       |
| —                | XC95144-20PQ160C   | —                  | —                  | 20.0                  | 160          | 144               | 8                      | 144              | 133       |
| —                | XC95216-10PQ160C   | XC95216-10BG352C   | —                  | 10.0                  | 160/352      | 216               | 12                     | 216              | 133/166   |
| —                | XC95216-15PQ160C   | XC95216-15BG352C   | —                  | 15.0                  | 160/352      | 216               | 12                     | 216              | 133/166   |
| —                | XC95216-20PQ160C   | XC95216-20BG352C   | —                  | 20.0                  | 160/352      | 216               | 12                     | 216              | 133/166   |
| —                | XC95216-10HQ208C   | —                  | —                  | 10.0                  | 208          | 216               | 12                     | 216              | 166       |
| —                | XC95216-15HQ208C   | —                  | —                  | 15.0                  | 208          | 216               | 12                     | 216              | 166       |
| —                | XC95216-20HQ208C   | —                  | —                  | 20.0                  | 208          | 216               | 12                     | 216              | 166       |
| —                | XC95288-15HQ208C   | XC95288-15BG352C   | —                  | 15.0                  | 208/352      | 288               | 16                     | 288              | 168/192   |
| —                | XC95288-20HQ208C   | XC95288-20BG352    | —                  | 20.0                  | 208/352      | 288               | 16                     | 288              | 168/192   |
| XC9536-5PC44C    | XC9536-5VQ44C      | —                  | XC9536-5CS48C      | 5.0                   | 44           | 36                | 2                      | 36               | 34        |
| XC9536-7PC44C    | XC9536-7VQ44C      | —                  | XC9536-7CS48C      | 7.5                   | 44           | 36                | 2                      | 36               | 34        |
| XC9536-10PC44C   | XC9536-10VQ44C     | —                  | XC9536-10CS48C     | 10.0                  | 44           | 36                | 2                      | 36               | 34        |
| XC9536-15PC44C   | XC9536-15VQ44C     | —                  | —                  | 15.0                  | 44           | 36                | 2                      | 36               | 34        |
| XC9572-7PC44C    | XC9572-7PQ100C     | —                  | —                  | 7.0                   | 44/100       | 72                | 4                      | 72               | 34/72     |
| XC9572-10PC44C   | XC9572-10PQ100C    | —                  | —                  | 10.0                  | 44/100       | 72                | 4                      | 72               | 34/72     |
| XC9572-15PC44C   | XC9572-15PQ100C    | —                  | —                  | 15.0                  | 44/100       | 72                | 4                      | 72               | 34/72     |
| XC9572-7PC84C    | XC9572-7TQ100C     | —                  | —                  | 7.5                   | 84/100       | 72                | 4                      | 72               | 69/72     |
| XC9572-10PC84C   | XC9572-10TQ100C    | —                  | —                  | 10.0                  | 84/100       | 72                | 4                      | 72               | 69/72     |
| XC9572-15PC84C   | XC9572-15TQ100C    | —                  | —                  | 15.0                  | 84/100       | 72                | 4                      | 72               | 69/72     |
| XC9536XL-4PC44C  | XC9536XL-4VQ64C    | —                  | XC9536XL-5CS48C    | 10.0                  | 44/64        | 36                | 2                      | 36               | 34/36     |
| XC9536XL-5PC44C  | XC9536XL-5VQ64C    | —                  | XC9536XL-5VQ64C    | 15.0                  | 44/64/48     | 36                | 2                      | 36               | 34/36     |
| XC9536XL-7PC44C  | XC9536XL-7VQ64C    | —                  | XC9536XL-7CS48C    | 7.5                   | 44/64/48     | 36                | 2                      | 36               | 34/36     |
| XC9536XL-10PC44C | XC9536XL-10VQ64C   | —                  | —                  | 10.0                  | 44/64        | 36                | 2                      | 36               | 34/36     |
| XC9572XL-5PC44C  | XC9572XL-5VQ64C    | —                  | —                  | 5.0                   | 44/64        | 72                | 4                      | 72               | 34/52     |
| XC9572XL-7PC44C  | XC9572XL-7VQ64C    | —                  | —                  | 7.5                   | 44/64        | 72                | 4                      | 72               | 34/53     |
| XC9572XL-10PC44C | XC9572XL-10VQ64C   | —                  | —                  | 10.0                  | 44/64        | 72                | 4                      | 72               | 34/54     |
| —                | XC9572XL-5TQ100C   | —                  | —                  | 5.0                   | 100          | 72                | 4                      | 72               | 72        |
| —                | XC9572XL-7TQ100C   | —                  | XC9572XL-7CS48C    | 7.5                   | 100/48       | 72                | 4                      | 72               | 72/38     |
| —                | XC9572XL-10TQ100C  | —                  | XC9572XL-10CS48C   | 10.0                  | 100/48       | 72                | 4                      | 72               | 72/38     |
| —                | XC95144XL-5TQ100C  | —                  | —                  | 5.0                   | 100          | 144               | 8                      | 144              | 81/117    |
| —                | XC95144XL-7TQ100C  | —                  | —                  | 7.5                   | 100          | 144               | 8                      | 144              | 81/117    |
| —                | XC95144XL-10TQ100C | —                  | —                  | 10.0                  | 100          | 144               | 8                      | 144              | 81/117    |
| —                | XC95144XL-5TQ144C  | —                  | —                  | 5.0                   | 144          | 144               | 8                      | 144              | 117       |
| —                | XC95144XL-7TQ144C  | —                  | XC95144XL-7CS144C  | 7.5                   | 144          | 144               | 8                      | 144              | 117       |
| —                | XC95144XL-10TQ144C | —                  | XC95144XL-10CS144C | 10.0                  | 144          | 144               | 8                      | 144              | 117       |
| —                | XC95288XL-6TQ144C  | XC95288XL-6BG256C  | —                  | 6.0                   | 144/256      | 144               | 16                     | 288              | 117/192   |
| —                | XC95288XL-7TQ144C  | XC95288XL-7BG256C  | XC95288XL-7CS280C  | 7.5                   | 144/256/280  | 144               | 16                     | 288              | 117/192   |
| —                | XC95288XL-10TQ144C | XC95288XL-10BG256C | XC95288XL-10CS280C | 10.0                  | 144/256/280  | 144               | 16                     | 288              | 117/192   |
| —                | XC95288XL-6PQ208C  | —                  | —                  | 6.0                   | 208          | 208               | 16                     | 288              | 168       |
| —                | XC95288XL-7PQ208C  | —                  | —                  | 7.5                   | 208          | 208               | 16                     | 288              | 168       |
| —                | XC95288XL-10PQ208C | —                  | —                  | 10.0                  | 208          | 208               | 16                     | 288              | 168       |