



**THE DATASHEET OF  
PA-T100/5256VE**



**Lattice Socket Products**

The following hardware can be used to program loose, unsoldered devices off-board. Consult the lists below to determine which best suits your needs.

**Smart Sockets**

Lattice Smart Sockets are an all-in-one desktop programming solution for the latest Lattice products. The top of each Smart Socket includes a socket for the target device / package type. Smart Sockets require only a single connection to the PC for power and programming control. No other hardware is required. Programming is controlled with the Diamond Programmer software.

| Product Family       | Device | Package Type         | Smart Socket Part Number | ROHS Compliant | Notes |
|----------------------|--------|----------------------|--------------------------|----------------|-------|
| ASC10                | All    | 48-pin QFN           | PSSN-S48-ASC10           | Y              |       |
| Crosslink            | All    | 81-ball csfBGA       | PSSN-M81-LIF-MD          | Y              |       |
| Crosslink            | All    | 80-ball ctfBGA       | PSSN-JM80-LIF-MD         | Y              |       |
| Crosslink            | All    | 64-ball ucFBGA       | PSSN-UM64-LIF-MD         | Y              |       |
| Crosslink            | All    | 36-ball WLCSP        | PSSN-UW36-LIF-MD         | Y              |       |
| ECP5                 | All    | 381-ball caBGA       | PSSN-B381-LFE5           | Y              |       |
| ECP5                 | All    | 756-ball caBGA       | PSSN-B756-LFE5           | Y              |       |
| ECP5                 | All    | 285-ball csfBGA      | PSSN-M285-LFE5           | Y              |       |
| ECP5                 | All    | 554-ball caBGA       | PSSN-B554-LFE5           | Y              |       |
| iCE40HX              | All    | 121-ball caBGA       | PSSN-B121-ICE40HX        | Y              |       |
| iCE40 Ultra (iCE5LP) | All    | 36-ball WLCSP (0.35) | PSSN-SW36-ICE5LP         | Y              |       |
| iCE40 Ultra (iCE5LP) | All    | 48-pin QFN           | PSSN-S48-ICE5LP          | Y              |       |
| iCE40 Ultra (iCE5LP) | All    | 36-ball ucFBGA (0.4) | PSSN-CM36-ICE5LP         | Y              |       |
| iCE40 UltraLite      | All    | 16-ball WLCSP        | PSSN-SWG16-ICE40UL       | Y              |       |
| iCE40 UltraLite      | All    | 36-ball ucBGA        | PSSN-CM36A-ICE40UL       | Y              |       |
| iCE40 UltraPlus      | All    | 48-pin QFN           | PSSN-S48-ICE40UP         | Y              |       |
| iCE40 UltraPlus      | All    | 30-ball WLCSP        | PSSN-UW30-ICE40UP        | Y              |       |
| MachXO2              | All    | 84-pin QFN           | PSSN-QN84-LCMXO2         | Y              |       |
| MachXO2              | All    | 48-pin QFN           | PSSN-SG48-LCMXO2         | Y              |       |
| MachXO2              | All    | 256-ball ftBGA       | PSSN-FT256-LCMXO2        | Y              |       |
| MachXO3 / MachXO3L   | All    | 256-ball caBGA       | PSSN-B256-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 400-ball caBGA       | PSSN-B400-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 256-ball csfBGA      | PSSN-M256-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 324-ball csfBGA      | PSSN-M324-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 121-ball csfBGA      | PSSN-M121-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 81-ball WLCSP        | PSSN-UW81-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 324-ball caBGA       | PSSN-B324-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 484-ball caBGA       | PSSN-B484-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 49-ball WLCSP (0.4)  | PSSN-UW49-LCMXO3         | Y              |       |
| MachXO3 / MachXO3L   | All    | 36-ball WLCSP (0.4)  | PSSN-UW36-LCMXO3         | Y              |       |

**Lattice Desktop Programmers**

The Lattice Model 300 Desktop Programmer enables programming of all Lattice families except iCE. The Model 300 is supported by the Lattice Programming Cable (included with the Model 300). To program a specific Lattice device, an appropriate Lattice Socket Adapter must be installed on the Model 300 Desktop Programmer.

The iCEprog Desktop Programmer supported all iCE products, and requires an iCE socket adapter for the device/package you wish to program. It is supported with the Lattice Programming Cable (included with the iCEprog) and the Diamond Programmer software.

| Lattice Programmers | Device Support                  | Vcc Support | Ordering Part Number |
|---------------------|---------------------------------|-------------|----------------------|
| Model 300           | All Lattice products except iCE | 1.8V - 5.0V | pDS4102-PM300N       |
| Model 100           | Lattice products with 5.0V Vcc  | 5.0V        | Not Available        |
| iCEprog             | All iCE products                |             | ICEPROGM1050-01      |

**Lattice 28-pin Converter**

The Lattice 28-pin Converter can allow use of a Lattice Socket Adapter with some 3rd party programmers. Consult with your 3rd party programmer to determine if the 28-pin Converter is suitable for use in your programming environment.

| Device                            | Ordering Part Number |
|-----------------------------------|----------------------|
| 28-pin Converter (RoHS Compliant) | pDS4102N-28P2SAB     |

**Lattice Socket Adapters**

Socket Adapters are the interface between the desktop programmer (Model 300 or iCEprog) and Lattice programmable devices. This document shows which Lattice Socket Adapters support which Lattice programmable products. Lattice Socket Adapters are device and package specific, however some Socket Adapters support multiple Lattice products. Use the tables on the following pages to determine which socket adapter you require.

| Product Family | Device      | Package Type   | Socket Adapter Part Number | ROHS Compliant | Notes  |
|----------------|-------------|----------------|----------------------------|----------------|--|
| iCE65          | All         | 81-ball csBGA  | ICESABCB81-01              | Y              | 3  |
| iCE65          | All         | 121-ball csBGA | ICESABCB121-01             | Y              | 3  |
| iCE65          | All         | 132-ball csBGA | ICESABCB132/196-01         | Y              | 3  |
| iCE65          | All         | CB196          | ICESABCB132/196-01         | Y              | 3  |
| iCE65          | All         | CB284          | ICESABCB284-01             | Y              | 3  |
| iCE65          | All         | 84-pin QFNS    | ICESABQN84-01              | Y              | 3  |
| iCE65          | All         | 100-pin TQFP   | ICESABVQ100-01             | Y              | 3  |
| iCE40 LP/HX    | All         | 81-ball csBGA  | ICESABCB81-01              | Y              | 3  |
| iCE40 LP/HX    | All         | 121-ball csBGA | ICESABCB121-01             | Y              | 3  |
| iCE40 LP/HX    | All         | 225-ball ucBGA | ICESABCM225-01             | Y              | 3  |
| iCE40 LP/HX    | All         | 84-pin QFNS    | ICESABQN84-01              | Y              | 3  |
| iCE40 LP/HX    | All         | 132-ball csBGA | ICESABCB132/196-01         | Y              | 3  |
| iCE40 LP/HX    | All         | 100-pin TQFP   | ICESABVQ100-01             | Y              | 3  |
| iCE40 LP/HX    | All         | 36-ball ucBGA  | ICESABCM36-01              | Y              | 3  |
| iCE40 LP/HX    | All         | 49-ball ucBGA  | ICESABCM49-01              | Y              | 3  |
| iCE40 LP/HX    | All         | 81-ball ucBGA  | ICESABCM81-01              | Y              | 3  |
| iCE40 LP/HX    | All         | 144-pin TQFP   | ICESABTQ144-01             | Y              | 3  |
| iCE40 LP/HX    | All         | 256-ball caBGA | ICESABFT256-01             | Y              | 3  |
| iCE40 LP/HX    | All         | 32-pin QFN     | ICESABQN32-01              | Y              | 3  |
| iCE40 LP/HX    | ICE40-4K/8K | 121-ball ucBGA | ICESABCM121-01             | Y              | 3  |
| LatticeECP3    | LFE3-17EA   | 256 ftBGA      | PN-FT256-E3                | Y              | No longer available - part number is for reference only. |
| LatticeECP3    | LFE3-17EA   | 484 fpBGA      | PN-F484-E3                 | Y              |  |
| LatticeECP3    | LFE3-17EA   | 328 csBGA      | PN-M328-E3                 | Y              |  |

| Product Family | Device      | Package Type    | Socket Adapter Part Number | ROHS Compliant | Notes   |
|----------------|-------------|-----------------|----------------------------|----------------|---|
| LatticeECP3    | LFE3-35EA   | 256 ftBGA       | PN-FT256-E3                | Y              | No longer available - part number is for reference only.    |
| LatticeECP3    | LFE3-35EA   | 484 fpBGA       | PN-F484-E3                 | Y              |   |
| LatticeECP3    | LFE3-35EA   | 672 fpBGA       | PN-F672-E3                 | Y              |   |
| LatticeECP3    | LFE3-70EA   | 484 fpBGA       | PN-F484-E3                 | Y              |   |
| LatticeECP3    | LFE3-70EA   | 672 fpBGA       | PN-F672-E3                 | Y              |   |
| LatticeECP3    | LFE3-70EA   | 1156 fpBGA      | PN-F1156-E3                | Y              |   |
| LatticeECP3    | LFE3-95EA   | 484 fpBGA       | PN-F484-E3                 | Y              |   |
| LatticeECP3    | LFE3-95EA   | 672 fpBGA       | PN-F672-E3                 | Y              |   |
| LatticeECP3    | LFE3-95EA   | 1156 fpBGA      | PN-F1156-E3                | Y              |   |
| LatticeECP3    | LFE3-150EA  | 672 fpBGA       | PN-F672-E3                 | Y              |   |
| LatticeECP3    | LFE3-150EA  | 1156 fpBGA      | PN-F1156-E3                | Y              |   |
| LatticeECP2S   | LFE2-6SE    | 144 pin TQFP    | PN-TN144/E2                | Y              |   |
| LatticeECP2S   | LFE2-6SE    | 256 ball fpBGA  | PN-FN256/E2                | Y              |   |
| LatticeECP2S   | LFE2-12SE   | 144 pin TQFP    | PN-TN144/E2                | Y              |   |
| LatticeECP2S   | LFE2-12SE   | 208 pin PQFP    | PN-QN208/E2                | Y              |   |
| LatticeECP2S   | LFE2-12SE   | 256 ball fpBGA  | PN-FN256/E2                | Y              |   |
| LatticeECP2S   | LFE2-12SE   | 484 ball fpBGA  | PN-FN484/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-20SE   | 208 pin PQFP    | PN-QN208/E2                | Y              |   |
| LatticeECP2S   | LFE2-20SE   | 256 ball fpBGA  | PN-FN256/E2                | Y              |   |
| LatticeECP2S   | LFE2-20SE   | 484 ball fpBGA  | PN-FN484/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-20SE   | 672 ball fpBGA  | PN-FN672/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-35SE   | 484 ball fpBGA  | PN-FN484/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-35SE   | 672 ball fpBGA  | PN-FN672/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-50SE   | 484 ball fpBGA  | PN-FN484/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-50SE   | 672 ball fpBGA  | PN-FN672/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-70SE   | 672 ball fpBGA  | PN-FN672/E2                | Y              | No longer available - part number is for reference only.    |
| LatticeECP2S   | LFE2-70SE   | 900 ball fpBGA  | Not Available              |                |   |
| LatticeECP2MS  | LFE2M20SE   | 256 ball fpBGA  | PN-FN256/E2M               | Y              |   |
| LatticeECP2MS  | LFE2M20SE   | 484 ball fpBGA  | PN-FN484/E2M               | Y              | No longer available - part number is for reference only.    |
| LatticeECP2MS  | LFE2M35SE   | 256 ball fpBGA  | PN-FN256/E2M               | Y              |   |
| LatticeECP2MS  | LFE2M35SE   | 484 ball fpBGA  | PN-FN484/E2M               | Y              | No longer available - part number is for reference only.    |
| LatticeECP2MS  | LFE2M35SE   | 672 ball fpBGA  | PN-FN672/E2M               | Y              | No longer available - part number is for reference only.    |
| LatticeECP2MS  | LFE2M50SE   | 484 ball fpBGA  | PN-FN484/E2M               | Y              | No longer available - part number is for reference only.    |
| LatticeECP2MS  | LFE2M50SE   | 672 ball fpBGA  | PN-FN672/E2M               | Y              | No longer available - part number is for reference only.    |
| LatticeECP2MS  | LFE2M50SE   | 900 ball fpBGA  | Not Available              |                |   |
| LatticeECP2MS  | LFE2M70SE   | 900 ball fpBGA  | Not Available              |                |   |
| LatticeECP2MS  | LFE2M70SE   | 1152 ball fpBGA | Not Available              |                |   |
| LatticeECP2MS  | LFE2M100SE  | 900 ball fpBGA  | Not Available              |                |   |
| LatticeECP2MS  | LFE2M100SE  | 1152 ball fpBGA | Not Available              |                |   |
| LatticeECP2MS  | LFE2M100SE  | 1156 ball fpBGA | Not Available              |                |   |
| LatticeXP2     | LFXP2-5E    | 132 ball csBGA  | PN-M132/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-5E    | 144 pin TQFP    | PN-T144/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-5E    | 208 pin PQFP    | PN-Q208/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-5E    | 256 ball ftBGA  | PN-FT256/LFXP2             | Y              | No longer available - part number is for reference only.    |
| LatticeXP2     | LFXP2-8E    | 132 ball csBGA  | PN-M132/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-8E    | 144 pin TQFP    | PN-T144/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-8E    | 208 pin PQFP    | PN-Q208/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-8E    | 256 ball ftBGA  | PN-FT256/LFXP2             | Y              | No longer available - part number is for reference only.    |
| LatticeXP2     | LFXP2-17E   | 208 pin PQFP    | PN-Q208/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-17E   | 256 ball ftBGA  | PN-FT256/LFXP2             | Y              | No longer available - part number is for reference only.    |
| LatticeXP2     | LFXP2-17E   | 484 ball fpBGA  | PN-F484/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-30E   | 256 ball ftBGA  | PN-FT256/LFXP2             | Y              | No longer available - part number is for reference only.    |
| LatticeXP2     | LFXP2-30E   | 484 ball fpBGA  | PN-F484/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-30E   | 672 ball fp BGA | PN-F672/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-40E   | 484 ball fpBGA  | PN-F484/LFXP2              | Y              |   |
| LatticeXP2     | LFXP2-40E   | 672 ball fpBGA  | PN-F672/LFXP2              | Y              |   |
| LatticeXP      | LFXP3C      | 100 pin TQFP    | PN-T100/LFXP3C             | Y              |   |
| LatticeXP      | LFXP3C      | 144 pin TQFP    | PN-T144/LFXP3C             | Y              |   |
| LatticeXP      | LFXP3C      | 208 pin PQFP    | PN-Q208/LFXP3C             | Y              |   |
| LatticeXP      | LFXP3E      | 100 pin TQFP    | PN-T100/LFXP3E             | Y              | 1   |
| LatticeXP      | LFXP3E      | 144 pin TQFP    | PN-T144/LFXP3E             | Y              | 1   |
| LatticeXP      | LFXP3E      | 208 pin PQFP    | PA-Q208/LFXP3E             | Y              | 1   |
| LatticeXP      | LFXP6C      | 144 pin TQFP    | PN-T144/LFXP3C             | Y              |   |
| LatticeXP      | LFXP6C      | 208 pin PQFP    | PN-Q208/LFXP3C             | Y              |   |
| LatticeXP      | LFXP6C      | 256 ball fpBGA  | PN-F256/LFXP10C            | Y              |   |
| LatticeXP      | LFXP6E      | 144 pin TQFP    | PN-T144/LFXP3E             | Y              | 1   |
| LatticeXP      | LFXP6E      | 208 pin PQFP    | PA-Q208/LFXP3E             | Y              | 1   |
| LatticeXP      | LFXP6E      | 256 ball fpBGA  | PN-F256/LFXP10E            | Y              | 1   |
| LatticeXP      | LFXP10C     | 256 ball fpBGA  | PN-F256/LFXP10C            | Y              |   |
| LatticeXP      | LFXP10C     | 388 ball fpBGA  | PN-F388/LFXP10C            | Y              |   |
| LatticeXP      | LFXP10E     | 256 ball fpBGA  | PN-F256/LFXP10E            | Y              | 1   |
| LatticeXP      | LFXP10E     | 388 ball fpBGA  | PN-F388/LFXP10E            | Y              | 1, No longer available - part number is for reference only. |
| LatticeXP      | LFXP15C     | 256 ball fpBGA  | PN-F256/LFXP10C            | Y              |   |
| LatticeXP      | LFXP15C     | 388 ball fpBGA  | PN-F388/LFXP10C            | Y              |   |
| LatticeXP      | LFXP15C     | 484 ball fpBGA  | PN-F484/LFXP20C            | Y              |   |
| LatticeXP      | LFXP15E     | 256 ball fpBGA  | PN-F256/LFXP10E            | Y              | 1   |
| LatticeXP      | LFXP15E     | 388 ball fpBGA  | PN-F388/LFXP10E            | Y              | 1, No longer available - part number is for reference only. |
| LatticeXP      | LFXP15E     | 484 ball fpBGA  | PN-F484/LFXP20E            | Y              | 1   |
| LatticeXP      | LFXP20C     | 256 ball fpBGA  | PN-F256/LFXP10C            | Y              |   |
| LatticeXP      | LFXP20C     | 388 ball fpBGA  | PN-F388/LFXP10C            | Y              |   |
| LatticeXP      | LFXP20C     | 484 ball fpBGA  | PN-F484/LFXP20C            | Y              |   |
| LatticeXP      | LFXP20E     | 256 ball fpBGA  | PN-F256/LFXP10E            | Y              | 1   |
| LatticeXP      | LFXP20E     | 388 ball fpBGA  | PN-F388/LFXP10E            | Y              | 1, No longer available - part number is for reference only. |
| LatticeXP      | LFXP20E     | 484 ball fpBGA  | PN-F484/LFXP20E            | Y              | 1   |
| ispXPGA        | LFX125 B/C  | 256 ball fpBGA  | PN-F256/LFX200             | Y              |   |
| ispXPGA        | LFX125 B/C  | 516 ball fpBGA  | PA-F516/LFX200             | N              |   |
| ispXPGA        | LFX200 B/C  | 256 ball fpBGA  | PN-F256/LFX200             | Y              |   |
| ispXPGA        | LFX200 B/C  | 516 ball fpBGA  | PA-F516/LFX200             | N              |   |
| ispXPGA        | LFX500 B/C  | 516 ball fpBGA  | PA-F516/LFX200             | N              |   |
| ispXPGA        | LFX500 B/C  | 900 ball fpBGA  | PA-F900/LFX1200            | N              |   |
| ispXPGA        | LFX1200 B/C | 680 ball fpBGA  | PA-FE680/LFX1200           | N              |   |
| ispXPGA        | LFX1200 B/C | 900 ball fpBGA  | PA-F900/LFX1200            | N              |   |
| ispXPGA        | LFX125E B/C | 256 ball fpBGA  | PN-F256/LFX200             | Y              |   |
| ispXPGA        | LFX125E B/C | 516 ball fpBGA  | PA-F516/LFX200             | N              |   |
| ispXPGA        | LFX200E B/C | 256 ball fpBGA  | PN-F256/LFX200             | Y              |   |
| ispXPGA        | LFX200E B/C | 516 ball fpBGA  | PA-F516/LFX200             | N              |   |

| Product Family  | Device         | Package Type   | Socket Adapter Part Number    | ROHS Compliant | Notes  |
|-----------------|----------------|----------------|-------------------------------|----------------|--|
| ispXPGA         | LFX500E B/C    | 516 ball fpBGA | PA-F516/LFX200                | N              |  |
| ispXPGA         | LFX500E B/C    | 900 ball fpBGA | PA-F900/LFX1200               | N              |  |
| ispXPGA         | LFX1200E B/C   | 680 ball fpBGA | PA-FE680/LFX1200              | N              |  |
| ispXPGA         | LFX1200E B/C   | 900 ball fpBGA | PA-F900/LFX1200               | N              |  |
| MachXO2         | All            | 332 ball caBGA | PN-B332-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 100 pin TQFP   | PN-T100-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 144 pin TQFP   | PN-T144-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 132 ball csBGA | PN-M132-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 256 ball caBGA | PN-B256-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 256 ball ftBGA | See Smart Sockets for Support | Y              | 2  |
| MachXO2         | All            | 484 ball fpBGA | PN-F484-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 64 ball ucBGA  | PN-UM64-LCMXO2                | Y              | 2  |
| MachXO2         | All            | 32 pin QFN     | PN-S32-LCMXO2                 | Y              | 2  |
| MachXO2         | All            | 184 ball csBGA | PN-M184-LCMXO2                | Y              | 2  |
| MachXO2         | LCMXO2-1200    | 25 ball WL CSP | PN-UWG25-LCMXO2-1200          | Y              | 2  |
| MachXO          | LAMXO256C      | 100 pin TQFP   | PN-T100/LCMXO640C             | Y              |  |
| MachXO          | LAMXO256E      | 100 pin TQFP   | PN-T100/LCMXO640E             | Y              | 1  |
| MachXO          | LAMXO640C      | 100 pin TQFP   | PN-T100/LCMXO640C             | Y              |  |
| MachXO          | LAMXO640E      | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              |  |
| MachXO          | LAMXO640C      | 256 ball ftBGA | PN-FT256/LCMXOC               | Y              |  |
| MachXO          | LAMXO640E      | 100 pin TQFP   | PN-T100/LCMXO640E             | Y              | 1  |
| MachXO          | LAMXO640E      | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              | 1  |
| MachXO          | LAMXO640E      | 256 ball ftBGA | PN-FT256/LCMXOE               | Y              | 1  |
| MachXO          | LAMXO1200E     | 100 pin TQFP   | PN-T100/LCMXO1200E            | Y              | 1  |
| MachXO          | LAMXO1200E     | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              | 1  |
| MachXO          | LAMXO1200E     | 256 ball ftBGA | PN-FT256/LCMXOE               | Y              | 1  |
| MachXO          | LAMXO2280E     | 100 pin TQFP   | PN-T100/LCMXO1200E            | Y              | 1  |
| MachXO          | LAMXO2280E     | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              | 1  |
| MachXO          | LAMXO2280E     | 256 ball ftBGA | PN-FT256/LCMXOE               | Y              | 1  |
| MachXO          | LAMXO2280E     | 324 ball ftBGA | PN-FT324/LCMXOE               | Y              | 1  |
| MachXO          | LCMXO256C      | 100 pin TQFP   | PN-T100/LCMXO640C             | Y              |  |
| MachXO          | LCMXO256E      | 100 ball csBGA | PN-M100/LCMXO640C             | Y              |  |
| MachXO          | LCMXO256E      | 100 pin TQFP   | PN-T100/LCMXO640E (2)         | Y              | 1  |
| MachXO          | LCMXO256E      | 100 ball csBGA | PN-M100/LCMXO640E (2)         | Y              | 1  |
| MachXO          | LCMXO640C      | 100 pin TQFP   | PN-T100/LCMXO640C             | Y              |  |
| MachXO          | LCMXO640C      | 144 pin TQFP   | PN-T144/LCMXO640C             | Y              |  |
| MachXO          | LCMXO640C      | 100 ball csBGA | PN-M100/LCMXO640C             | Y              |  |
| MachXO          | LCMXO640C      | 132 ball csBGA | PN-M132/LCMXO640C             | Y              |  |
| MachXO          | LCMXO640C      | 256 ball ftBGA | PN-FT256/LCMXOC               | Y              |  |
| MachXO          | LCMXO640C      | 256 ball caBGA | PN-B256/LCMXOC                | Y              |  |
| MachXO          | LCMXO640E      | 100 pin TQFP   | PN-T100/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO640E      | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO640E      | 100 ball csBGA | PN-M100/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO640E      | 132 ball csBGA | PN-M132/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO640E      | 256 ball ftBGA | PN-FT256/LCMXOE               | Y              | 1  |
| MachXO          | LCMXO640E      | 256 ball caBGA | PN-B256/LCMXOE                | Y              | 1  |
| MachXO          | LCMXO1200C     | 100 pin TQFP   | PN-T100/LCMXO1200C            | Y              |  |
| MachXO          | LCMXO1200C     | 144 pin TQFP   | PN-T144/LCMXO640C             | Y              |  |
| MachXO          | LCMXO1200C     | 132 ball csBGA | PN-M132/LCMXO640C             | Y              |  |
| MachXO          | LCMXO1200C     | 256 ball ftBGA | PN-FT256/LCMXOC               | Y              |  |
| MachXO          | LCMXO1200C     | 256 ball caBGA | PN-B256/LCMXOC                | Y              |  |
| MachXO          | LCMXO1200E     | 100 pin TQFP   | PN-T100/LCMXO1200E            | Y              | 1  |
| MachXO          | LCMXO1200E     | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO1200E     | 132 ball csBGA | PN-M132/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO1200E     | 256 ball ftBGA | PN-FT256/LCMXOE               | Y              | 1  |
| MachXO          | LCMXO1200E     | 256 ball caBGA | PN-B256/LCMXOE                | Y              | 1  |
| MachXO          | LCMXO2280C     | 100 pin TQFP   | PN-T100/LCMXO1200C            | Y              |  |
| MachXO          | LCMXO2280C     | 144 pin TQFP   | PN-T144/LCMXO640C             | Y              |  |
| MachXO          | LCMXO2280C     | 132 ball csBGA | PN-M132/LCMXO640C             | Y              |  |
| MachXO          | LCMXO2280C     | 256 ball ftBGA | PN-FT256/LCMXOC               | Y              |  |
| MachXO          | LCMXO2280C     | 256 ball caBGA | PN-B256/LCMXOC                | Y              |  |
| MachXO          | LCMXO2280E     | 100 pin TQFP   | PN-T100/LCMXO1200E            | Y              | 1  |
| MachXO          | LCMXO2280E     | 144 pin TQFP   | PN-T144/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO2280E     | 132 ball csBGA | PN-M132/LCMXO640E             | Y              | 1  |
| MachXO          | LCMXO2280E     | 256 ball ftBGA | PN-FT256/LCMXOE               | Y              | 1  |
| MachXO          | LCMXO2280E     | 256 ball caBGA | PN-B256/LCMXOE                | Y              | 1  |
| MachXO          | LCMXO2280E     | 324 ball ftBGA | PN-FT324/LCMXOE               | Y              | 1  |
| ispXPLD         | LC5256M V/B/C  | 256 ball fpBGA | PN-F256/LC5512MX              | Y              |  |
| ispXPLD         | LC5768M V/B/C  | 256 ball fpBGA | PN-F256/LC5512MX              | Y              |  |
| ispXPLD         | LC5768M V/B/C  | 484 ball fpBGA | PA-F484/LC5512MX              | N              | No longer available - part number is for reference only. |
| ispXPLD         | LC5512M V/B/C  | 208 pin PQFP   | PA-Q208/LC5512MX              | N              |  |
| ispXPLD         | LC5512M V/B/C  | 256 ball fpBGA | PN-F256/LC5512MX              | Y              |  |
| ispXPLD         | LC5512M V/B/C  | 484 ball fpBGA | PA-F484/LC5512MX              | N              | No longer available - part number is for reference only. |
| ispXPLD         | LC51024M V/B/C | 484 ball fpBGA | PA-F484/LC5512MX              | N              | No longer available - part number is for reference only. |
| ispXPLD         | LC51024M V/B/C | 672 ball fpBGA | PN-F672/LC51024MX             | Y              |  |
| ispMACH 4000 ZE | LC4032 ZE      | 48 pin TQFP    | PN-T48/LC4032                 | Y              |  |
| ispMACH 4000 ZE | LC4032 ZE      | 64 ball csBGA  | PN-M64/LC4000ZE               | Y              |  |
| ispMACH 4000 ZE | LC4064 ZE      | 48 pin TQFP    | PN-T48/LC4032                 | Y              |  |
| ispMACH 4000 ZE | LC4064 ZE      | 64 ball csBGA  | PN-M64/LC4000ZE               | Y              |  |
| ispMACH 4000 ZE | LC4064 ZE      | 64 ball ucBGA  | PN-UM64/LC4000ZE              | Y              |  |
| ispMACH 4000 ZE | LC4064 ZE      | 100 pin TQFP   | PN-T100/LC4256                | Y              |  |
| ispMACH 4000 ZE | LC4064 ZE      | 144 ball csBGA | PN-M144/LC4000ZE              | Y              |  |
| ispMACH 4000 ZE | LC4128 ZE      | 100 pin TQFP   | PN-T100/LC4256                | Y              |  |
| ispMACH 4000 ZE | LC4128 ZE      | 144 ball csBGA | PN-M144/LC4000ZE              | Y              |  |
| ispMACH 4000 ZE | LC4128 ZE      | 144 pin TQFP   | PN-T144/LC4128V               | Y              |  |
| ispMACH 4000 ZE | LC4256 ZE      | 100 pin TQFP   | PN-T100/LC4256                | Y              |  |
| ispMACH 4000 ZE | LC4256 ZE      | 144 pin TQFP   | PN-T144/LC4128V               | Y              |  |
| ispMACH 4000 ZE | LC4256 ZE      | 144 ball csBGA | PN-M144/LC4000ZE              | Y              |  |
| LA-ispMACH 4000 | LA4032 V       | 44 pin TQFP    | PA-T44/LC4032                 | N              |  |
| LA-ispMACH 4000 | LA4032 V       | 48 pin TQFP    | PN-T48/LC4032                 | Y              |  |
| LA-ispMACH 4000 | LA4032 ZC      | 48 pin TQFP    | PN-T48/LC4032                 | Y              |  |
| LA-ispMACH 4000 | LA4064 V       | 44 pin TQFP    | PA-T44/LC4032                 | N              |  |
| LA-ispMACH 4000 | LA4064 V       | 48 pin TQFP    | PN-T48/LC4032                 | Y              |  |
| LA-ispMACH 4000 | LA4064 V       | 100 pin TQFP   | PN-T100/LC4256                | Y              |  |
| LA-ispMACH 4000 | LA4064 ZC      | 48 pin TQFP    | PN-T48/LC4032                 | Y              |  |

| Product Family   | Device              | Package Type    | Socket Adapter Part Number | ROHS Compliant | Notes  |
|------------------|---------------------|-----------------|----------------------------|----------------|--|
| LA-ispMACH 4000  | LA4064 ZC           | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| LA-ispMACH 4000  | LA4128 V            | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| LA-ispMACH 4000  | LA4128 V            | 128 pin TQFP    | PN-T128/LC4128             | Y              |  |
| LA-ispMACH 4000  | LA4128 V            | 144 pin TQFP    | PN-T144/LC4128V            | Y              |  |
| LA-ispMACH 4000  | LA4128 ZC           | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4032 V/B/C        | 44 pin TQFP     | PA-T44/LC4032              | Y              |  |
| ispMACH 4000     | LC4032 V/B/C        | 48 pin TQFP     | PN-T48/LC4032              | Y              |  |
| ispMACH 4000     | LC4032 ZC           | 48 pin TQFP     | PN-T48/LC4032              | Y              |  |
| ispMACH 4000     | LC4032 ZC           | 56 ball csBGA   | PN-M56/LC4032ZC            | Y              |  |
| ispMACH 4000     | LC4064 V/B/C        | 44 pin TQFP     | PA-T44/LC4032              | Y              |  |
| ispMACH 4000     | LC4064 V/B/C        | 48 pin TQFP     | PN-T48/LC4032              | Y              |  |
| ispMACH 4000     | LC4064 V/B/C        | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4064 ZC           | 48 pin TQFP     | PN-T48/LC4032              | Y              |  |
| ispMACH 4000     | LC4064 ZC           | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4064 ZC           | 56 ball csBGA   | PN-M56/LC4032ZC            | Y              |  |
| ispMACH 4000     | LC4064 ZC           | 132 ball csBGA  | PN-M132/LC4064ZC           | Y              |  |
| ispMACH 4000     | LC4128 V/B/C        | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4128 V/B/C        | 128 pin TQFP    | PN-T128/LC4128             | Y              |  |
| ispMACH 4000     | LC4128 V            | 144 pin TQFP    | PN-T144/LC4128V            | Y              |  |
| ispMACH 4000     | LC4128 ZC           | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4128 ZC           | 132 ball csBGA  | PN-M132/LC4064ZC           | Y              |  |
| ispMACH 4000     | LC4256 V/B/C        | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4256 V/B/C        | 176 pin TQFP    | PN-T176/LC4256             | Y              |  |
| ispMACH 4000     | LC4256 V/B/C        | 256 ball fpBGA  | PN-F256/LC4512             | Y              |  |
| ispMACH 4000     | LC4256 V/B/C        | 256 ball ftBGA  | PN-FT256/LC4000            | Y              |  |
| ispMACH 4000     | LC4256 V            | 144 pin TQFP    | PN-T144/LC4128V            | Y              |  |
| ispMACH 4000     | LC4256 ZC           | 100 pin TQFP    | PN-T100/LC4256             | Y              |  |
| ispMACH 4000     | LC4256 ZC           | 176 pin TQFP    | PN-T176/LC4256             | Y              |  |
| ispMACH 4000     | LC4256 ZC           | 132 ball csBGA  | PN-M132/LC4064ZC           | Y              |  |
| ispMACH 4000     | LC4384 V/B/C        | 176 pin TQFP    | PN-T176/LC4256             | Y              |  |
| ispMACH 4000     | LC4384 V/B/C        | 256 ball fpBGA  | PN-F256/LC4512             | Y              |  |
| ispMACH 4000     | LC4384 V/B/C        | 256 ball ftBGA  | PN-FT256/LC4000            | Y              |  |
| ispMACH 4000     | LC4512 V/B/C        | 176 pin TQFP    | PN-T176/LC4256             | Y              |  |
| ispMACH 4000     | LC4512 V/B/C        | 256 ball fpBGA  | PN-F256/LC4512             | Y              |  |
| ispMACH 4000     | LC4512 V/B/C        | 256 ball ftBGA  | PN-FT256/LC4000            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5304S     | 48 pin TQFP     | PN-T48/CLK5312S            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5308S     | 48 pin TQFP     | PN-T48/CLK5312S            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5312S     | 48 pin TQFP     | PN-T48/CLK5312S            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5316S     | 64 pin TQFP     | PN-T64/CLK5320S            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5320S     | 64 pin TQFP     | PN-T64/CLK5320S            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5610AV    | 48 pin TQFP     | PN-T48/CLK5510V            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5620AV    | 100 pin TQFP    | PN-T100/CLK5520V           | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5406D     | 48 pin QFNS     | PN-Q48/CLK5406D            | Y              |  |
| ispPAC-CLK       | ispPAC-CLK5410D     | 64 pin QFNS     | PN-S64-CLK5410D            | Y              |  |
| Platform Manager | LPTM10-1247         | 128-pin TQFP    | PN-T128-LPTM10             | Y              |  |
| Platform Manager | LPTM10-12107        | 208-ball ftBGA  | PN-FT208-LPTM10            | Y              |  |
| Power Manager II | ispPAC-POWR605      | 24 pin QFN/QFNS | PN-N24/POWR605             | Y              |  |
| Power Manager II | ispPAC-POWR607      | 32 pin QFN/QFNS | PN-N32/POWR607             | Y              |  |
| Power Manager II | ispPAC-POWR6AT6     | 32 pin QFN/QFNS | PN-N32/POWR6AT6            | Y              |  |
| Power Manager II | ispPAC-POWR1014     | 48 pin TQFP     | PN-T48/POWR1014/A          | Y              |  |
| Power Manager II | ispPAC-POWR1014A    | 48 pin TQFP     | PN-T48/POWR1014/A          | Y              |  |
| Power Manager II | ispPAC-POWR1220AT8  | 100 pin TQFP    | PN-T100/POWR1220A          | Y              |  |
| Power Manager    | ispPAC-POWR604      | 44 pin TQFP     | PA-T44/POWR1208            | N              |  |
| Power Manager    | ispPAC-POWR1208     | 44 pin TQFP     | PA-T44/POWR1208            | N              |  |
| Power Manager    | ispPAC-POWR1208P1   | 44 pin TQFP     | PA-T44/POWR1208            | N              |  |
| ispGDX2          | LX64 V/B/C          | 100 ball fpBGA  | PN-F100/LX64               | Y              |  |
| ispGDX2          | LX128 V/B/C         | 208 ball fpBGA  | PN-F208/LX128              | Y              |  |
| ispGDX2          | LX256 V/B/C         | 484 ball fpBGA  | PA-F484/LX256              | N              | No longer available - part number is for reference only. |
| ispGDX2-E        | LX64E V/B/C         | 100 ball fpBGA  | PN-F100/LX64               | Y              |  |
| ispGDX2-E        | LX128E V/B/C        | 208 ball fpBGA  | PN-F208/LX128              | Y              |  |
| ispGDX2-E        | LX256E V/B/C        | 484 ball fpBGA  | PA-F484/LX256              | N              | No longer available - part number is for reference only. |
| ispGAL           | ispGAL 22V10A V/B/C | 28 pin PLCC     | Not Available              |                |  |
| ispGAL           | ispGAL 22V10A V/B/C | 32 pin QFN/QFNS | PA-N32/22V10A              | N              |  |
| ispGAL           | ispGAL 22V10        | 28 pin PLCC     | Not Available              |                |  |
| ispGAL           | ispGAL 22V10        | 28 pin SSOP     | Not Available              |                |  |
| ispGAL           | ispGAL 22LV10       | 28 pin PLCC     | Not Available              |                |  |
| ispGAL           | ispGAL 22LV10       | 28 pin SSOP     | Not Available              |                |  |
| GAL              | GAL 16V8            | 20 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 16VP8           | 20 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 18V10           | 20 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 20V8            | 24 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 20VP8           | 24 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 22V10           | 24 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 6001            | 24 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 6002            | 24 pin PLCC     | Not Available              |                |  |
| GAL              | GAL 26CV12          | 28 pin PLCC     | Not Available              |                |  |
| ispLSI 1000      | isp/pLSI 1016       | 44 pin PLCC     | pDS4102-J44                | N              |  |
| ispLSI 1000      | isp/pLSI 1016       | 44 pin TQFP     | pDS4102-T44/2032VE         | N              |  |
| ispLSI 1000      | isp/pLSI 1016E      | 44 pin PLCC     | pDS4102-J44                | N              |  |
| ispLSI 1000      | isp/pLSI 1016E      | 44 pin TQFP     | pDS4102-T44/2032VE         | N              |  |
| ispLSI 1000      | ispLSI 1016EA       | 44 pin PLCC     | pDS4102-J44/1016EA         | N              |  |
| ispLSI 1000      | ispLSI 1016EA       | 44 pin TQFP     | pDS4102-T44/1016EA         | N              |  |
| ispLSI 1000      | isp/pLSI 1024       | 68 pin PLCC     | pDS4102-J68                | N              | No longer available - part number is for reference only. |
| ispLSI 1000      | isp/pLSI 1024       | 100 pin TQFP    | pDS4102-T100/1024          | N              |  |
| ispLSI 1000      | ispLSI 1024EA       | 100 pin TQFP    | PA-T100/1024EA             | N              |  |
| ispLSI 1000      | isp/pLSI 1032       | 84 pin PLCC     | pDS4102-J84                | N              |  |
| ispLSI 1000      | isp/pLSI 1032       | 84 pin PGA      | Not Available              |                |  |
| ispLSI 1000      | isp/pLSI 1032       | 100 pin TQFP    | pDS4102-T100/2064E         | N              |  |
| ispLSI 1000      | isp/pLSI 1032E      | 84 pin PLCC     | pDS4102-J84                | N              |  |
| ispLSI 1000      | isp/pLSI 1032E      | 100 pin TQFP    | pDS4102-T100/2064E         | N              |  |
| ispLSI 1000      | ispLSI 1032EA       | 100 pin TQFP    | pDS4102-T0/1032EA          | N              |  |
| ispLSI 1000      | isp/pLSI 1048       | 120 pin PQFP    | pDS4102-Q120               | N              |  |
| ispLSI 1000      | isp/pLSI 1048C      | 128 pin PQFP    | pDS4102-Q128               | N              |  |
| ispLSI 1000      | isp/pLSI 1048C      | 133 pin PGA     | Not Available              |                |  |
| ispLSI 1000      | isp/pLSI 1048E      | 128 pin PQFP    | pDS4102-Q128               | N              |  |
| ispLSI 1000      | isp/pLSI 1048E      | 128 pin TQFP    | pDS4102-T128               | N              |  |



| Product Family | Device        | Package Type   | Socket Adapter Part Number            | ROHS Compliant | Notes  |
|----------------|---------------|----------------|---------------------------------------|----------------|--|
| ispLSI 1000    | ispLSI 1048EA | 128 pin PQFP   | PA-Q128/1048EA                        | N              |  |
| ispLSI 1000    | ispLSI 1048EA | 128 pin TQFP   | PA-T128/1048EA                        | N              |  |
| ispLSI 2000    | isp/pLSI 2032 | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | isp/pLSI 2032 | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | isp/pLSI 2032 | 48 pin TQFP    | pDS4102-T48                           | N              |  |
| ispLSI 2000    | ispLSI 2032A  | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2032A  | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2032A  | 48 pin TQFP    | pDS4102-T48                           | N              |  |
| ispLSI 2000    | ispLSI 2032E  | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2032E  | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2032E  | 48 pin TQFP    | pDS4102-T48                           | N              |  |
| ispLSI 2000    | ispLSI 2032LV | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2032LV | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2032V  | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2032V  | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2032VE | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2032VE | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2032VE | 48 pin TQFP    | pDS4102-T48                           | N              |  |
| ispLSI 2000    | ispLSI 2032VE | 49 ball CABGA  | Not Available                         |                |  |
| ispLSI 2000    | ispLSI 2032VL | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2032VL | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2032VL | 48 pin TQFP    | pDS4102-T48                           | N              |  |
| ispLSI 2000    | ispLSI 2032VL | 49 ball CABGA  | Not Available                         |                |  |
| ispLSI 2000    | isp/pLSI 2064 | 84 pin PLCC    | pDS4102-J84                           | N              |  |
| ispLSI 2000    | isp/pLSI 2064 | 100 pin TQFP   | pDS4102-T100/2064E                    | N              |  |
| ispLSI 2000    | ispLSI 2064A  | 84 pin PLCC    | pDS4102-J84                           | N              |  |
| ispLSI 2000    | ispLSI 2064A  | 100 pin TQFP   | pDS4102-T100/2064E                    | N              |  |
| ispLSI 2000    | ispLSI 2064E  | 100 pin TQFP   | pDS4102-T100/2064E                    | N              |  |
| ispLSI 2000    | ispLSI 2064V  | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2064V  | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2064V  | 84 pin PLCC    | pDS4102-J84/2064V                     | N              |  |
| ispLSI 2000    | ispLSI 2064V  | 100 pin TQFP   | pDS4102-T100/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2064VE | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2064VE | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2064VE | 100 pin TQFP   | pDS4102-T100/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2064VE | 100 ball CABGA | pDS4102-F80/2064VE                    | N              |  |
| ispLSI 2000    | ispLSI 2064VL | 44 pin PLCC    | pDS4102-J44                           | N              |  |
| ispLSI 2000    | ispLSI 2064VL | 44 pin TQFP    | pDS4102-T44/2032VE                    | N              |  |
| ispLSI 2000    | ispLSI 2064VL | 100 pin TQFP   | pDS4102-T100/2128V                    | N              |  |
| ispLSI 2000    | isp/pLSI 2096 | 128 pin PQFP   | pDS4102-Q128                          | N              |  |
| ispLSI 2000    | isp/pLSI 2096 | 128 pin TQFP   | pDS4102-T128                          | N              |  |
| ispLSI 2000    | ispLSI 2096A  | 128 pin PQFP   | pDS4102-Q128                          | N              |  |
| ispLSI 2000    | ispLSI 2096A  | 128 pin TQFP   | pDS4102-T128                          | N              |  |
| ispLSI 2000    | ispLSI 2096E  | 128 pin PQFP   | pDS4102-Q128                          | N              |  |
| ispLSI 2000    | ispLSI 2096E  | 128 pin TQFP   | pDS4102-T128                          | N              |  |
| ispLSI 2000    | ispLSI 2096V  | 128 pin TQFP   | pDS4102-T128/2096V                    | N              |  |
| ispLSI 2000    | ispLSI 2096V  | 128 pin PQFP   | pDS4102-Q128/2096V                    | N              |  |
| ispLSI 2000    | ispLSI 2096VE | 128 pin TQFP   | pDS4102-T128/2096V                    | N              |  |
| ispLSI 2000    | ispLSI 2096VL | 128 pin TQFP   | pDS4102-T128/2096V                    | N              |  |
| ispLSI 2000    | isp/pLSI 2128 | 160 pin MQUAD  | pDS4102-M160                          | N              |  |
| ispLSI 2000    | isp/pLSI 2128 | 160 pin PQFP   | pDS4102-M160                          | N              |  |
| ispLSI 2000    | isp/pLSI 2128 | 176 pin TQFP   | pDS4102-T176 or<br>pDS4102-T176/2128E | N              |  |
| ispLSI 2000    | ispLSI 2128A  | 160 pin PQFP   | pDS4102-M160                          | N              |  |
| ispLSI 2000    | ispLSI 2128A  | 176 pin TQFP   | pDS4102-T176 or<br>pDS4102-T176/2128E | N              |  |
| ispLSI 2000    | ispLSI 2128E  | 176 pin TQFP   | pDS4102-T176/2128E                    | N              |  |
| ispLSI 2000    | ispLSI 2128V  | 84 pin PLCC    | pDS4102-J84/2064V                     | N              |  |
| ispLSI 2000    | ispLSI 2128V  | 100 pin TQFP   | pDS4102-T100/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128V  | 160 pin PQFP   | pDS4102-Q160/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128V  | 176 pin TQFP   | pDS4102-T176/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VE | 100 pin TQFP   | pDS4102-T100/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VE | 100 ball CABGA | pDS4102-F80/2064VE                    | N              |  |
| ispLSI 2000    | ispLSI 2128VE | 160 pin PQFP   | pDS4102-Q160/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VE | 176 pin TQFP   | pDS4102-T176/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VE | 208 ball FPBGA | pDS4102-FB208-B1                      | N              |  |
| ispLSI 2000    | ispLSI 2128VL | 100 pin TQFP   | pDS4102-T100/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VL | 100 ball CABGA | pDS4102-F80/2064VE                    | N              |  |
| ispLSI 2000    | ispLSI 2128VL | 160 pin PQFP   | pDS4102-Q160/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VL | 176 pin TQFP   | pDS4102-T176/2128V                    | N              |  |
| ispLSI 2000    | ispLSI 2128VL | 208 ball FPBGA | pDS4102-FB208-B1                      | N              |  |
| ispLSI 2000    | ispLSI 2192VE | 128 pin TQFP   | pDS4102-T128/2096V                    | N              |  |
| ispLSI 2000    | ispLSI 2192VE | 144 ball FPBGA | pDS4102-FB144-A1                      | N              |  |
| ispLSI 2000    | ispLSI 2192VL | 128 pin TQFP   | pDS4102-T128/2096V                    | N              |  |
| ispLSI 2000    | ispLSI 2192VL | 144 ball FPBGA | pDS4102-FB144-A1                      | N              |  |
| ispLSI 3000    | ispLSI 3160   | 208 pin PQFP   | pDS4102-M208/3320                     | N              |  |
| ispLSI 3000    | ispLSI 3192   | 240 pin MQUAD  | pDS4102-M240                          | N              |  |
| ispLSI 3000    | ispLSI 3256   | 160 pin MQUAD  | pDS4102-M160                          | N              |  |
| ispLSI 3000    | ispLSI 3256A  | 160 pin PQFP   | pDS4102-M160                          | N              |  |
| ispLSI 3000    | ispLSI 3256A  | 160 pin MQUAD  | pDS4102-M160                          | N              |  |
| ispLSI 3000    | ispLSI 3256E  | 304 pin MQUAD  | pDS4102-M304                          | N              |  |
| ispLSI 3000    | ispLSI 3256E  | 320 ball SBGA  | PA-B320/3256E                         | N              | No longer available - part number is for reference only. |
| ispLSI 3000    | ispLSI 3320   | 208 pin PQFP   | pDS4102-M208/3320                     | N              |  |
| ispLSI 3000    | ispLSI 3320   | 208 pin MQUAD  | pDS4102-M208/3320                     | N              |  |
| ispLSI 3000    | ispLSI 3320   | 320 ball SBGA  | PA-B320/3320                          | N              | No longer available - part number is for reference only. |
| ispLSI 5000    | ispLSI 5256V  | 208 pin PQFP   | PN-Q208/5256V                         | Y              |  |
| ispLSI 5000    | ispLSI 5256V  | 272 ball PBGA  | pDS4102-B272/5256V                    | N              |  |
| ispLSI 5000    | ispLSI 5256V  | 208 ball FPBGA | pDS4102-FB208-A1                      | N              |  |
| ispLSI 5000    | ispLSI 5256VA | 208 pin PQFP   | PN-Q208/5256V                         | Y              |  |
| ispLSI 5000    | ispLSI 5256VA | 272 ball PBGA  | pDS4102-B272/5256V                    | N              |  |
| ispLSI 5000    | ispLSI 5256VA | 208 ball FPBGA | pDS4102-FB208-A1                      | N              |  |
| ispLSI 5000    | ispLSI 5384V  | 208 pin PQFP   | PN-Q208/5256V                         | Y              |  |
| ispLSI 5000    | ispLSI 5384V  | 272 ball PBGA  | pDS4102-B272/5256V                    | N              |  |
| ispLSI 5000    | ispLSI 5384V  | 388 ball PBGA  | pDS4102-B388/5384V                    | N              |  |
| ispLSI 5000    | ispLSI 5384V  | 208 ball FPBGA | pDS4102-FB208-A1                      | N              |  |

| Product Family      | Device          | Package Type   | Socket Adapter Part Number                | ROHS Compliant | Notes  |
|---------------------|-----------------|----------------|---|----------------|--|
| ispLSI 5000         | ispLSI 5384VA   | 208 pin PQFP   | PN-Q208/5256V                             | Y              |  |
| ispLSI 5000         | ispLSI 5384VA   | 272 ball PBGA  | pDS4102-B272/5256V                        | N              |  |
| ispLSI 5000         | ispLSI 5384VA   | 388 ball PBGA  | pDS4102-B388/5384V                        | N              |  |
| ispLSI 5000         | ispLSI 5384VA   | 208 ball FPBGA | pDS4102-FB208-A1                          | N              |  |
| ispLSI 5000         | ispLSI 5512V    | 388 ball PBGA  | pDS4102-B388/5384V                        | N              |  |
| ispLSI 5000         | ispLSI 5512VA   | 208 pin PQFP   | PN-Q208/5256V                             | Y              |  |
| ispLSI 5000         | ispLSI 5512VA   | 272 ball PBGA  | pDS4102-B272/5256V                        | N              |  |
| ispLSI 5000         | ispLSI 5512VA   | 388 ball PBGA  | pDS4102-B388/5384V                        | N              |  |
| ispLSI 5000VE       | ispLSI 5128VE   | 128 pin TQFP   | PA-T128/5256VE                            | N              |  |
| ispLSI 5000VE       | ispLSI 5256VE   | 100 pin TQFP   | PA-T100/5256VE                            | N              |  |
| ispLSI 5000VE       | ispLSI 5256VE   | 128 pin TQFP   | PA-T128/5256VE                            | N              |  |
| ispLSI 5000VE       | ispLSI 5256VE   | 256 ball FPBGA | PA-LF256/5384VE                           | N              | No longer available - part number is for reference only. |
| ispLSI 5000VE       | ispLSI 5256VE   | 272 pin BGA    | pDS4102-B272/5256V                        | N              |  |
| ispLSI 5000VE       | ispLSI 5384VE   | 256 ball FPBGA | PA-LF256/5384VE                           | N              | No longer available - part number is for reference only. |
| ispLSI 5000VE       | ispLSI 5384VE   | 272 ball PBGA  | pDS4102-B272/5256V                        | N              |  |
| ispLSI 5000VE       | ispLSI 5512VE   | 256 ball FBGA  | PA-LF256/5384VE                           | N              | No longer available - part number is for reference only. |
| ispLSI 5000VE       | ispLSI 5512VE   | 272 ball PBGA  | pDS4102-B272/5256V                        | N              |  |
| ispLSI 5000VE       | ispLSI 5512VE   | 388 ball FPBGA | PA-LF388/5512VE                           | N              |  |
| ispLSI 5000VE       | ispLSI 5512VE   | 388 ball PBGA  | pDS4102-B388/5384V                        | N              |  |
| ispMACH 5000VG      | LC51024VG       | 484 ball fpBGA | PA-F484/LC51024                           | N              |  |
| ispMACH 5000VG      | LC51024VG       | 676 ball fpBGA | PA-F676/LC51024                           | N              |  |
| ispMACH 5000VG      | LC5768VG        | 256 ball fpBGA | PA-F256/LC5768                            | N              | No longer available - part number is for reference only. |
| ispMACH 5000VG      | LC5768VG        | 484 ball fpBGA | PA-F484/LC51024                           | N              |  |
| ispMACH 5000B       | LC5128B         | 128 pin TQFP   | PA-T128/LC5256B                           | N              |  |
| ispMACH 5000B       | LC5256B         | 208 pin PQFP   | PA-Q208/LC5256B                           | N              |  |
| ispMACH 5000B       | LC5256B         | 128 pin TQFP   | PA-T128/LC5256B                           | N              |  |
| ispMACH 5000B       | LC5256B         | 256 ball fpBGA | PA-F256/LC5256B                           | N              | No longer available - part number is for reference only. |
| ispMACH 5000B       | LC5384B         | 208 pin PQFP   | PA-Q208/LC5256B                           | N              |  |
| ispMACH 5000B       | LC5384B         | 256 ball fpBGA | PA-F256/LC5256B                           | N              | No longer available - part number is for reference only. |
| ispMACH 5000B       | LC5512B         | 208 pin PQFP   | PA-Q208/LC5256B                           | N              |  |
| ispMACH 5000B       | LC5512B         | 256 ball fpBGA | PA-F256/LC5256B                           | N              | No longer available - part number is for reference only. |
| ispMACH 5000B       | LC5512B         | 484 ball fpBGA | PA-F484/LC51024                           | N              |  |
| ispLSI 8000         | ispLSI 8600V    | 272 ball PBGA  | pDS4102-B272/8600V                        | N              |  |
| ispLSI 8000         | ispLSI 8600V    | 492 ball PBGA  | pDS4102-B492/8840V                        | N              |  |
| ispLSI 8000         | ispLSI 8840     | 432 ball SBGA  | pDS4102-B432/8840                         | N              |  |
| ispLSI 8000         | ispLSI 8840V    | 272 ball PBGA  | pDS4102-B272/8600V                        | N              |  |
| ispLSI 8000         | ispLSI 8840V    | 492 ball PBGA  | pDS4102-B492/8840V                        | N              |  |
| ispLSI 8000         | ispLSI 81080V   | 272 ball PBGA  | pDS4102-B272/8600V                        | N              |  |
| ispLSI 8000         | ispLSI 81080V   | 492 ball PBGA  | pDS4102-B492/8840V                        | N              |  |
| ispGDX and ispGD XV | ispGDX 80A      | 100 pin TQFP   | pDS4102-T100/GX80                         | N              |  |
| ispGDX and ispGD XV | ispGDX 80VA     | 100 pin TQFP   | PA-T100/GX80VA                            | N              |  |
| ispGDX and ispGD XV | ispGDX 80VA     | 100 ball CBGA  | Currently Not Available                   | N              |  |
| ispGDX and ispGD XV | ispGDX 120A     | 160 pin PQFP   | Currently Not Available                   | N              |  |
| ispGDX and ispGD XV | ispGDX 120A     | 176 pin TQFP   | pDS4102-T176/GX120                        | N              |  |
| ispGDX and ispGD XV | ispGDX 160V     | 208 pin PQFP   | PN-Q208-GDX160V                           | Y              |  |
| ispGDX and ispGD XV | ispGDX 160V     | 208 ball FPBGA | PN-FB208/GX160V<br>(was pDS4102-FB208-C1) | Y              |  |
| ispGDX and ispGD XV | ispGDX 160VA    | 208 pin PQFP   | PN-Q208-GDX160V                           | Y              |  |
| ispGDX and ispGD XV | ispGDX 160VA    | 208 ball FPBGA | PN-FB208/GX160V<br>(was pDS4102-FB208-C1) | Y              |  |
| ispGDX and ispGD XV | ispGDX 240VA    | 388 ball FPBGA | PA-FB388/GX240VA                          | N              |  |
| ispPAC-CLK5000V     | ispPAC-CLK5510V | 48 pin TQFP    | PN-T48/CLK5510V                           | Y              |  |
| ispPAC-CLK5000V     | ispPAC-CLK5520V | 100 pin TQFP   | PN-T100/CLK5520V                          | Y              |  |
| ispPAC-CLK5000V     | ispPAC-CLK5610V | 48 pin TQFP    | PN-T48/CLK5510V                           | Y              |  |
| ispPAC-CLK5000V     | ispPAC-CLK5620V | 100 pin TQFP   | PN-T100/CLK5520V                          | Y              |  |

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| Notes:   |
| (1) Socket adapter includes an internal voltage regulator for 1.2V programming support.  |
| (2) For all MachXO2 Socket Adapters, set JP (VCore) to select target voltage as follows:<br>HC = 1.8V = JP: 2-3<br>HE = 1.2V = JP: 1-2<br>ZE = 1.2V = JP: 1-2<br>Jumper J1 (VccIO) should be set to position 2-3<br>Jumper position "1" is closest to the > mark on the Socket Adapter Board |
| (3) iCE socket adapters are not compatible with the Lattice Model300 programmer. iCE socket adapters require the iCEprog programmer (ICEPROGM1050-01).   |

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