

CN20003: Libero SoC v12.4 Updates for PolarFire, SmartFusion2, and IGLOO2

April 17, 2020

This document describes the following six change notifications (CNs) regarding Libero SoC v12.4 updates for PolarFire, SmartFusion2, and IGLOO2 devices.

Notification	Description	Required Action
CN20003.1	PolarFire FPGA System Controller/JTAG TRSTB	If System Controller Suspend mode is not used, then no action required. Otherwise, regenerate STAPL file.
CN20003.2	Netlist Generated for LSRAM Asymmetric Two-Port RAMs	If LSRAM W32xR2 and W32xR1 configurations are used, rerun the Synthesize/Compile tool. Configure the P&R Incremental option and complete the entire flow.
CN20003.3	Configure I/O States During JTAG Programming Libero Tool	Read CN20003.3 details.
CN20003.4	PolarFire FPGA PCIE Register	Regeneration of the PCISS module is recommended if BAR register addressing used the default settings prior to Libero SoC v12.4. Review the updated PCIE_BRIDGE section of the PolarFire Register Map documentation.
CN20003.5	Certain Unused I/Os Not Tristated When Programmed	Specific pins mentioned in CN20003.5 will be impacted. Rerun Libero SoC 12.4 "Generate FPGA Programming Data" step.
CN20003.6	PolarFire LSRAM CLK-to-OUT Delays	Re-run Static Timing Analysis.

CN20003.1: PolarFire FPGA System Controller/JTAG TRSTB

Description

An update to STAPL file generation, FlashPro Express, and Libero programming using FlashPro 4/5/6 has been implemented. This update polls for the de-assertion of the system controller BUSY, which indicates the system controller has completed executing the device initialization step and an additional delay makes sure calibration completes. This update does not significantly impact overall programming time.

Reason for Change

When System Controller Suspend mode is enabled, the system controller may unexpectedly stop and enter suspend mode without completing the proper device initialization. This occurs if TRSTB is prematurely asserted by the programming software (FlashPro Express, Libero, DirectC, or third-party programmer) before the device initialization is complete.

Application Impact

Depending on the initialization time required by a user's FPGA design, some designs may not operating correctly after programming. This behavior will appear after programming, fabric power-up, and when the system controller starts device initialization.

Required Action

No action is required if the user design does not enable System Controller Suspend mode, or if System Controller Suspend mode is enabled and the device initialization completes and device works properly after programming.

Action is required for designs enabling System Controller Suspend mode. The recommendation is to use Libero SoC version 12.4 or later for programming or regenerating STAPL file. The change is applied to the following:

- STAPL file generated
- FlashPro Express and Libero programming (FlashPro 4/5/6)
- DirectC algorithm is not yet updated. If viable, a simple workaround is to reset the device after programming using the DEVRST_N pin or power cycle the device.

Part Numbers Affected

For list of affected part numbers, see Appendix A.

CN20003.2: Netlist Generated for LSRAM Asymmetric Two-Port RAMs

Description

The netlist generated for LSRAM asymmetric two-port RAMs is now correct for W32:R2 and W32:R1 configurations.

Reason for Change

Asymmetric two-port LSRAM configurations of ratio W32:R2 incorrectly write bits 18 and 19. In the W32:R2 configuration, bit 18 is a copy of bit 16 and bit 19 is a copy of bit 17. Asymmetric two-port LSRAM configurations of ratio W32:R1 incorrectly writes bits 17 through 19. In the W32:R1 configuration, bits 17, 18, and 19 are a copy of bit 16.

Application Impact

Usage of these aspect ratios for the LSRAM are very rare. However, if your design is using these two configurations, your simulations will pass but silicon may exhibit a functional failure. This type of fault is generally captured during the development phase.

Required Action

If your design contains either of these two configurations, you must update the project to Libero SoC v12.4. Rerun the Synthesize/Compile tool. Configure the P&R Incremental option and complete the entire flow.

Part Numbers Affected

For list of affected part numbers, see Appendix A.

CN20003.3: Configure I/O States During JTAG Programming Libero Tool

Description

The Libero tool "Configure I/O states during JTAG programming" was modified to provide the intended behavior.

Reason for Change

Using the "Configure I/O states during JTAG programming" Libero tool causes loss of programming configurations in Libero SoC releases 12.0 to 12.3. Specifically using this tool can cause a loss of user programming settings selected via "Configure Programming Options", "Configure Action/Procedure" for the "Run Programming Action" step, and "Generate Bitstream" options.

Application Impact

Depending on the product family used, the following behavior can be observed.

- **SmartFusion2/IGLOO2:** Auto-update and programming recovery settings are lost. Programming the generated bitstream disables both capabilities. In addition, design version is reset to zero, which may prevent field updates if back versioning is used.
- **PolarFire:** Design version and back level version are reset to zero, which may prevent field updates if back versioning is used.

Table 1 • Issue in Libero SoS Versions 12.0–12.3

Device Family	TCL Flow	GUI Flow
SmartFusion2/IGLOO2	No	Yes
PolarFire	Yes	Yes

Required Action

If your design uses I/O Setting during JTAG programming, open the Libero SoC pre-v12.4 project into Libero SoC v12.4, and the impacted tools ("Configure Programming Options", "Configure Action/Procedure" for the "Run Programming Action" step, and "Generate Bitstream" options) will be corrected if necessary. The user will be required to regenerate the bitstream.

Part Numbers Affected

For list of affected part numbers, see Appendix A and Appendix B.

CN20003.4: PolarFire FPGA PCIe Register

Description

Incorrect default register values related to PCIE_BRIDGE in the PolarFire Register map documentation have been updated in LiberoSoC v12.4 to correctly match silicon.

For more information, see the [PolarFire Register Map Documentation](#).

Reason for Change

Customers who configured PCIE BAR register using the LiberoSoC default values prior to v12.4 should be aware of this update, as the default values generated prior to the v12.4 release were incorrect and could impact the BAR addressing in their PCIE system.

Application Impact

For some registers in the PCIE_BRIDGE, the hardware reset differs from the silicon default. For example, register ATR4_PCIE_WINO_SRCADDR_PARAM had a hardware default of 0x0 in the public memory map, but the default value read is 0x16. The register map and Libero SoC generator are updated to reflect the correct default values. The default register update includes:

- PCIE_VC_CRED_DW0
- ATR4_PCIE_WINO_SRCADDR_PARAM
- ATR[0:5]_PCIE_WIN1_SRCADDR_PARAM
- ATR[0:5]_AXI4_SLV0_SRCADDR_PARAM
- ATR[0:5]_PCIE_WIN1_TRSL_PARAM

Also, as part of the update, several Address Translation Tables not implemented in the PolarFire PCIESS module have been correctly updated to reflect this update in the register map. These registers include the following prefixed registers:

- ATR*_*_WIN1_*
- ATR6*_*_WINO_*
- ATR7*_*_WINO_*
- ATR6_AXI4_SLV0_*
- ATR7_AXI4_SLV0_*

Required Action

This issue would have been identified early in system validation. These designs prior to Libero SoC 12.4 will have included bad default values based on the user's customization using the PCIe configurator.

Regeneration of the PCIESS module is recommended with LiberoSoC 12.4. This will generate the core with corrected default configurations. Some users who may have manually modified registers based on the original register map should review, as they may need to make changes to their design-specific embedded software.

Users should download the updated [PolarFire Register Map](#).

Part Numbers Affected

For list of affected part numbers, see Appendix A.

CN20003.5: Certain Unused I/Os Not Tristated When Programmed

Description

Certain I/Os were found to be driving when not used in designs.

Reason for Change

Libero SoC has been updated to correctly program the I/O setting for pins.

Application Impact

Contention on the board or unexpected power consumption will occur.

The following impacted pins are listed in the device PPAT tables.

- CCC_NW_PLL0_OUT[0:1]
- CCC_NW_PLL1_OUT[0:1]
- CCC_NE_PLL0_OUT[0:1]
- CCC_NE_PLL1_OUT[0:1]
- CCC_SE_PLL0_OUT[0:1]
- CCC_SE_PLL1_OUT[0:1]
- CCC_SW_PLL0_OUT[0:1]
- CCC_SW_PLL1_OUT[0:1]

Required Action

Rerun the Libero SoC v12.4 "Generate FPGA programming data" step.

Part Numbers Affected

For list of affected part numbers, see Appendix A.

CN20003.6: PolarFire LSRAM CLK-to-OUT Delays

Description

During timing characterization for high temperatures, an adjustment was made to the timing model of the LSRAM CLK-to-OUT delays that resulted in a minor impact on lower temperatures delays (industrial and extended).

Reason for Change

For max clock-to-out delays, only bit 0 is impacted. Internal regression shows that less than 1% of designs are impacted and, when there is an impact on design performance, it is less than 2%.

For min clock-to-out delays, all bits are impacted. In this case, the delays through the LSRAM are large enough not to show up as min delay critical paths. Internal regression confirmed that no violation was observed due to this change.

Application Impact

There may be timing marginality leading to timing violations that are undetected.

Required Action

While it is unlikely that this change will have any timing violations on existing designs, it is recommended to re-run static timing analysis with SmartTime using Libero SoC v12.4 to ensure your design remains timing-violation clear.

Part Numbers Affected

For list of affected part numbers, see Appendix A.

Appendix A

The following table lists the affected PolarFire part numbers.

PolarFire Part Numbers		
MPF100T-FCG484E	MPF100TL-FCG484E	MPF100T-1FCG484E
MPF100T-FCVG484E	MPF100TL-FCVG484E	MPF100T-1FCVG484E
MPF100T-FCSG325E	MPF100TL-FCSG325E	MPF100T-1FCSG325E
MPF200T-FCG484E	MPF200TL-FCG484E	MPF200T-1FCG484E
MPF200T-FCVG484E	MPF200TL-FCVG484E	MPF200T-1FCVG484E
MPF200T-FCG784E	MPF200TL-FCG784E	MPF200T-1FCG784E
MPF200T-FCSG325E	MPF200TL-FCSG325E	MPF200T-1FCSG325E
MPF200T-FCSG536E	MPF200TL-FCSG536E	MPF200T-1FCSG536E
MPF300T-FCG484E	MPF300TL-FCG484E	MPF300T-1FCG484E
MPF300T-FCVG484E	MPF300TL-FCVG484E	MPF300T-1FCVG484E
MPF300T-FCG784E	MPF300TL-FCG784E	MPF300T-1FCG784E
MPF300T-FCSG536E	MPF300TL-FCSG536E	MPF300T-1FCSG536E
MPF300T-FCG1152E	MPF300TL-FCG1152E	MPF300T-1FCG1152E
MPF500T-FCG784E	MPF500TL-FCG784E	MPF500T-1FCG784E
MPF500T-FCG1152E	MPF500TL-FCG1152E	MPF500T-1FCG1152E
MPF100T-FCG484I	MPF100TL-FCG484I	MPF100T-1FCG484I
MPF100T-FCVG484I	MPF100TL-FCVG484I	MPF100T-1FCVG484I
MPF100T-FCSG325I	MPF100TL-FCSG325I	MPF100T-1FCSG325I
MPF200T-FCG484I	MPF200TL-FCG484I	MPF200T-1FCG484I
MPF200T-FCVG484I	MPF200TL-FCVG484I	MPF200T-1FCVG484I
MPF200T-FCG784I	MPF200TL-FCG784I	MPF200T-1FCG784I
MPF200T-FCSG325I	MPF200TL-FCSG325I	MPF200T-1FCSG325I
MPF200T-FCSG536I	MPF200TL-FCSG536I	MPF200T-1FCSG536I
MPF300T-FCG484I	MPF300TL-FCG484I	MPF300T-1FCG484I
MPF300T-FCVG484I	MPF300TL-FCVG484I	MPF300T-1FCVG484I

PolarFire Part Numbers		
MPF300T-FCG784I	MPF300TL-FCG784I	MPF300T-1FCG784I
MPF300T-FCSG536I	MPF300TL-FCSG536I	MPF300T-1FCSG536I
MPF300T-FCG1152I	MPF300TL-FCG1152I	MPF300T-1FCG1152I
MPF500T-FCG784I	MPF500TL-FCG784I	MPF500T-1FCG784I
MPF500T-FCG1152I	MPF500TL-FCG1152I	MPF500T-1FCG1152I
MPF100TLS-FCG484I	MPF100TS-FCG484I	MPF100TS-1FCG484I
MPF100TLS-FCVG484I	MPF100TS-FCVG484I	MPF100TS-1FCVG484I
MPF100TLS-FCSG325I	MPF100TS-FCSG325I	MPF100TS-1FCSG325I
MPF200TLS-FCG484I	MPF200TS-FCG484I	MPF200TS-1FCG484I
MPF200TLS-FCVG484I	MPF200TS-FCVG484I	MPF200TS-1FCVG484I
MPF200TLS-FCG784I	MPF200TS-FCG784I	MPF200TS-1FCG784I
MPF200TLS-FCSG325I	MPF200TS-FCSG325I	MPF200TS-1FCSG325I
MPF200TLS-FCSG536I	MPF200TS-FCSG536I	MPF200TS-1FCSG536I
MPF300TLS-FCG484I	MPF300TS-FCG484I	MPF300TS-1FCG484I
MPF300TLS-FCVG484I	MPF300TS-FCVG484I	MPF300TS-1FCVG484I
MPF300TLS-FCG784I	MPF300TS-FCG784I	MPF300TS-1FCG784I
MPF300TLS-FCSG536I	MPF300TS-FCSG536I	MPF300TS-1FCSG536I
MPF300TLS-FCG1152I	MPF300TS-FCG1152I	MPF300TS-1FCG1152I
MPF500TLS-FCG784I	MPF500TS-FCG784I	MPF500TS-1FCG784I
MPF500TLS-FCG1152I	MPF500TS-FCG1152I	MPF500TS-1FCG1152I

Appendix B

The following table lists the affected SmartFusion2 and IGLOO2 part numbers.

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S005-TQ144	M2S005-TQG144	M2GL005-TQ144	M2GL005-TQG144
M2S010-TQ144	M2S010-TQG144	M2GL010-TQ144	M2GL010-TQG144
M2S005-VF256	M2S005-VFG256	M2GL005-VF256	M2GL005-VFG256
M2S010-VF256	M2S010-VFG256	M2GL010-VF256	M2GL010-VFG256
M2S025-VF256	M2S025-VFG256	M2GL025-VF256	M2GL025-VFG256
M2S025-FCS325	M2S025-FCSG325	M2GL025-FCS325	M2GL025-FCSG325
M2S050-FCS325	M2S050-FCSG325	M2GL050-FCS325	M2GL050-FCSG325
M2S060-FCS325	M2S060-FCSG325	M2GL060-FCS325	M2GL060-FCSG325
M2S090-FCS325	M2S090-FCSG325	M2GL090-FCS325	M2GL090-FCSG325
M2S005-VF400	M2S005-VFG400	M2GL005-VF400	M2GL005-VFG400
M2S010-VF400	M2S010-VFG400	M2GL010-VF400	M2GL010-VFG400
M2S025-VF400	M2S025-VFG400	M2GL025-VF400	M2GL025-VFG400
M2S050-VF400	M2S050-VFG400	M2GL050-VF400	M2GL050-VFG400
M2S060-VF400	M2S060-VFG400	M2GL060-VF400	M2GL060-VFG400
M2S150-FCV484	M2S150-FCVG484	M2GL150-FCV484	M2GL150-FCVG484
M2S005-FG484	M2S005-FGG484	M2GL005-FG484	M2GL005-FGG484
M2S010-FG484	M2S010-FGG484	M2GL010-FG484	M2GL010-FGG484
M2S025-FG484	M2S025-FGG484	M2GL025-FG484	M2GL025-FGG484
M2S050-FG484	M2S050-FGG484	M2GL050-FG484	M2GL050-FGG484
M2S060-FG484	M2S060-FGG484	M2GL060-FG484	M2GL060-FGG484
M2S090-FG484	M2S090-FGG484	M2GL090-FG484	M2GL090-FGG484
M2S150-FCS536	M2S150-FCSG536	M2GL150-FCS536	M2GL150-FCSG536
M2S060-FG676	M2S060-FGG676	M2GL060-FG676	M2GL060-FGG676
M2S090-FG676	M2S090-FGG676	M2GL090-FG676	M2GL090-FGG676
M2S050-FG896	M2S050-FGG896	M2GL050-FG896	M2GL050-FGG896
M2S150-FC1152	M2S150-FCG1152	M2GL150-FC1152	M2GL150-FCG1152
M2S010T-VF256	M2S010T-VFG256	M2GL010T-VF256	M2GL010T-VFG256
M2S025T-VF256	M2S025T-VFG256	M2GL025T-VF256	M2GL025T-VFG256

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S025T-FCS325	M2S025T-FCSG325	M2GL025T-FCS325	M2GL025T-FCSG325
M2S050T-FCS325	M2S050T-FCSG325	M2GL050T-FCS325	M2GL050T-FCSG325
M2S060T-FCS325	M2S060T-FCSG325	M2GL060T-FCS325	M2GL060T-FCSG325
M2S090T-FCS325	M2S090T-FCSG325	M2GL090T-FCS325	M2GL090T-FCSG325
M2S010T-VF400	M2S010T-VFG400	M2GL010T-VF400	M2GL010T-VFG400
M2S025T-VF400	M2S025T-VFG400	M2GL025T-VF400	M2GL025T-VFG400
M2S050T-VF400	M2S050T-VFG400	M2GL050T-VF400	M2GL050T-VFG400
M2S060T-VF400	M2S060T-VFG400	M2GL060T-VF400	M2GL060T-VFG400
M2S150T-FCV484	M2S150T-FCVG484	M2GL150T-FCV484	M2GL150T-FCVG484
M2S010T-FG484	M2S010T-FGG484	M2GL010T-FG484	M2GL010T-FGG484
M2S025T-FG484	M2S025T-FGG484	M2GL025T-FG484	M2GL025T-FGG484
M2S050T-FG484	M2S050T-FGG484	M2GL050T-FG484	M2GL050T-FGG484
M2S060T-FG484	M2S060T-FGG484	M2GL060T-FG484	M2GL060T-FGG484
M2S090T-FG484	M2S090T-FGG484	M2GL090T-FG484	M2GL090T-FGG484
M2S150T-FCS536	M2S150T-FCSG536	M2GL150T-FCS536	M2GL150T-FCSG536
M2S060T-FG676	M2S060T-FGG676	M2GL060T-FG676	M2GL060T-FGG676
M2S090T-FG676	M2S090T-FGG676	M2GL090T-FG676	M2GL090T-FGG676
M2S050T-FG896	M2S050T-FGG896	M2GL050T-FG896	M2GL050T-FGG896
M2S150T-FC1152	M2S150T-FCG1152	M2GL150T-FC1152	M2GL150T-FCG1152
M2S005S-TQ144	M2S005S-TQG144	M2GL005S-TQ144	M2GL005S-TQG144
M2S010S-TQ144	M2S010S-TQG144	M2GL010S-TQ144	M2GL010S-TQG144
M2S005S-VF256	M2S005S-VFG256	M2GL005S-VF256	M2GL005S-VFG256
M2S005S-VF400	M2S005S-VFG400	M2GL005S-VF400	M2GL005S-VFG400
M2S005S-FG484	M2S005S-FGG484	M2GL005S-FG484	M2GL005S-FGG484
M2S010TS-VF256	M2S010TS-VFG256	M2GL010TS-VF256	M2GL010TS-VFG256
M2S025TS-VF256	M2S025TS-VFG256	M2GL025TS-VF256	M2GL025TS-VFG256
M2S025TS-FCS325	M2S025TS-FCSG325	M2GL025TS-FCS325	M2GL025TS-FCSG325
M2S050TS-FCS325	M2S050TS-FCSG325	M2GL050TS-FCS325	M2GL050TS-FCSG325
M2S060TS-FCS325	M2S060TS-FCSG325	M2GL060TS-FCS325	M2GL060TS-FCSG325
M2S090TS-FCS325	M2S090TS-FCSG325	M2GL090TS-FCS325	M2GL090TS-FCSG325
M2S010TS-VF400	M2S010TS-VFG400	M2GL010TS-VF400	M2GL010TS-VFG400
M2S025TS-VF400	M2S025TS-VFG400	M2GL025TS-VF400	M2GL025TS-VFG400

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S050TS-VF400	M2S050TS-VFG400	M2GL050TS-VF400	M2GL050TS-VFG400
M2S060TS-VF400	M2S060TS-VFG400	M2GL060TS-VF400	M2GL060TS-VFG400
M2S150TS-FCV484	M2S150TS-FCVG484	M2GL150TS-FCV484	M2GL150TS-FCVG484
M2S010TS-FG484	M2S010TS-FGG484	M2GL010TS-FG484	M2GL010TS-FGG484
M2S025TS-FG484	M2S025TS-FGG484	M2GL025TS-FG484	M2GL025TS-FGG484
M2S050TS-FG484	M2S050TS-FGG484	M2GL050TS-FG484	M2GL050TS-FGG484
M2S060TS-FG484	M2S060TS-FGG484	M2GL060TS-FG484	M2GL060TS-FGG484
M2S090TS-FG484	M2S090TS-FGG484	M2GL090TS-FG484	M2GL090TS-FGG484
M2S150TS-FCS536	M2S150TS-FCSG536	M2GL150TS-FCS536	M2GL150TS-FCSG536
M2S060TS-FG676	M2S060TS-FGG676	M2GL060TS-FG676	M2GL060TS-FGG676
M2S090TS-FG676	M2S090TS-FGG676	M2GL090TS-FG676	M2GL090TS-FGG676
M2S050TS-FG896	M2S050TS-FGG896	M2GL050TS-FG896	M2GL050TS-FGG896
M2S150TS-FC1152	M2S150TS-FCG1152	M2GL150TS-FC1152	M2GL150TS-FCG1152
M2S005-1TQ144	M2S005-1TQG144	M2GL005-1TQ144	M2GL005-1TQG144
M2S010-1TQ144	M2S010-1TQG144	M2GL010-1TQ144	M2GL010-1TQG144
M2S005-1VF256	M2S005-1VFG256	M2GL005-1VF256	M2GL005-1VFG256
M2S010-1VF256	M2S010-1VFG256	M2GL010-1VF256	M2GL010-1VFG256
M2S025-1VF256	M2S025-1VFG256	M2GL025-1VF256	M2GL025-1VFG256
M2S025-1FCS325	M2S025-1FCSG325	M2GL025-1FCS325	M2GL025-1FCSG325
M2S050-1FCS325	M2S050-1FCSG325	M2GL050-1FCS325	M2GL050-1FCSG325
M2S060-1FCS325	M2S060-1FCSG325	M2GL060-1FCS325	M2GL060-1FCSG325
M2S090-1FCS325	M2S090-1FCSG325	M2GL090-1FCS325	M2GL090-1FCSG325
M2S005-1VF400	M2S005-1VFG400	M2GL005-1VF400	M2GL005-1VFG400
M2S010-1VF400	M2S010-1VFG400	M2GL010-1VF400	M2GL010-1VFG400
M2S025-1VF400	M2S025-1VFG400	M2GL025-1VF400	M2GL025-1VFG400
M2S050-1VF400	M2S050-1VFG400	M2GL050-1VF400	M2GL050-1VFG400
M2S060-1VF400	M2S060-1VFG400	M2GL060-1VF400	M2GL060-1VFG400
M2S150-1FCV484	M2S150-1FCVG484	M2GL150-1FCV484	M2GL150-1FCVG484
M2S005-1FG484	M2S005-1FGG484	M2GL005-1FG484	M2GL005-1FGG484
M2S010-1FG484	M2S010-1FGG484	M2GL010-1FG484	M2GL010-1FGG484
M2S025-1FG484	M2S025-1FGG484	M2GL025-1FG484	M2GL025-1FGG484
M2S050-1FG484	M2S050-1FGG484	M2GL050-1FG484	M2GL050-1FGG484

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S060-1FG484	M2S060-1FGG484	M2GL060-1FG484	M2GL060-1FGG484
M2S090-1FG484	M2S090-1FGG484	M2GL090-1FG484	M2GL090-1FGG484
M2S150-1FCS536	M2S150-1FC5G536	M2GL150-1FCS536	M2GL150-1FC5G536
M2S060-1FG676	M2S060-1FGG676	M2GL060-1FG676	M2GL060-1FGG676
M2S090-1FG676	M2S090-1FGG676	M2GL090-1FG676	M2GL090-1FGG676
M2S050-1FG896	M2S050-1FGG896	M2GL050-1FG896	M2GL050-1FGG896
M2S150-1FC1152	M2S150-1FCG1152	M2GL150-1FC1152	M2GL150-1FCG1152
M2S010T-1VF256	M2S010T-1VFG256	M2GL010T-1VF256	M2GL010T-1VFG256
M2S025T-1VF256	M2S025T-1VFG256	M2GL025T-1VF256	M2GL025T-1VFG256
M2S025T-1FCS325	M2S025T-1FC5G325	M2GL025T-1FCS325	M2GL025T-1FC5G325
M2S050T-1FCS325	M2S050T-1FC5G325	M2GL050T-1FCS325	M2GL050T-1FC5G325
M2S060T-1FCS325	M2S060T-1FC5G325	M2GL060T-1FCS325	M2GL060T-1FC5G325
M2S090T-1FCS325	M2S090T-1FC5G325	M2GL090T-1FCS325	M2GL090T-1FC5G325
M2S010T-1VF400	M2S010T-1VFG400	M2GL010T-1VF400	M2GL010T-1VFG400
M2S025T-1VF400	M2S025T-1VFG400	M2GL025T-1VF400	M2GL025T-1VFG400
M2S050T-1VF400	M2S050T-1VFG400	M2GL050T-1VF400	M2GL050T-1VFG400
M2S060T-1VF400	M2S060T-1VFG400	M2GL060T-1VF400	M2GL060T-1VFG400
M2S150T-1FCV484	M2S150T-1FC5G484	M2GL150T-1FCV484	M2GL150T-1FC5G484
M2S010T-1FG484	M2S010T-1FGG484	M2GL010T-1FG484	M2GL010T-1FGG484
M2S025T-1FG484	M2S025T-1FGG484	M2GL025T-1FG484	M2GL025T-1FGG484
M2S050T-1FG484	M2S050T-1FGG484	M2GL050T-1FG484	M2GL050T-1FGG484
M2S060T-1FG484	M2S060T-1FGG484	M2GL060T-1FG484	M2GL060T-1FGG484
M2S090T-1FG484	M2S090T-1FGG484	M2GL090T-1FG484	M2GL090T-1FGG484
M2S150T-1FCS536	M2S150T-1FC5G536	M2GL150T-1FCS536	M2GL150T-1FC5G536
M2S060T-1FG676	M2S060T-1FGG676	M2GL060T-1FG676	M2GL060T-1FGG676
M2S090T-1FG676	M2S090T-1FGG676	M2GL090T-1FG676	M2GL090T-1FGG676
M2S050T-1FG896	M2S050T-1FGG896	M2GL050T-1FG896	M2GL050T-1FGG896
M2S150T-1FC1152	M2S150T-1FCG1152	M2GL150T-1FC1152	M2GL150T-1FCG1152
M2S005S-1TQ144	M2S005S-1TQG144	M2GL005S-1TQ144	M2GL005S-1TQG144
M2S010S-1TQ144	M2S010S-1TQG144	M2GL010S-1TQ144	M2GL010S-1TQG144
M2S005S-1VF256	M2S005S-1VFG256	M2GL005S-1VF256	M2GL005S-1VFG256
M2S005S-1VF400	M2S005S-1VFG400	M2GL005S-1VF400	M2GL005S-1VFG400

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S005S-1FG484	M2S005S-1FGG484	M2GL005S-1FG484	M2GL005S-1FGG484
M2S010TS-1VF256	M2S010TS-1VFG256	M2GL010TS-1VF256	M2GL010TS-1VFG256
M2S025TS-1VF256	M2S025TS-1VFG256	M2GL025TS-1VF256	M2GL025TS-1VFG256
M2S025TS-1FCS325	M2S025TS-1FCSG325	M2GL025TS-1FCS325	M2GL025TS-1FCSG325
M2S050TS-1FCS325	M2S050TS-1FCSG325	M2GL050TS-1FCS325	M2GL050TS-1FCSG325
M2S060TS-1FCS325	M2S060TS-1FCSG325	M2GL060TS-1FCS325	M2GL060TS-1FCSG325
M2S090TS-1FCS325	M2S090TS-1FCSG325	M2GL090TS-1FCS325	M2GL090TS-1FCSG325
M2S010TS-1VF400	M2S010TS-1VFG400	M2GL010TS-1VF400	M2GL010TS-1VFG400
M2S025TS-1VF400	M2S025TS-1VFG400	M2GL025TS-1VF400	M2GL025TS-1VFG400
M2S050TS-1VF400	M2S050TS-1VFG400	M2GL050TS-1VF400	M2GL050TS-1VFG400
M2S060TS-1VF400	M2S060TS-1VFG400	M2GL060TS-1VF400	M2GL060TS-1VFG400
M2S150TS-1FCV484	M2S150TS-1FCVG484	M2GL150TS-1FCV484	M2GL150TS-1FCVG484
M2S010TS-1FG484	M2S010TS-1FGG484	M2GL010TS-1FG484	M2GL010TS-1FGG484
M2S025TS-1FG484	M2S025TS-1FGG484	M2GL025TS-1FG484	M2GL025TS-1FGG484
M2S050TS-1FG484	M2S050TS-1FGG484	M2GL050TS-1FG484	M2GL050TS-1FGG484
M2S060TS-1FG484	M2S060TS-1FGG484	M2GL060TS-1FG484	M2GL060TS-1FGG484
M2S090TS-1FG484	M2S090TS-1FGG484	M2GL090TS-1FG484	M2GL090TS-1FGG484
M2S150TS-1FCS536	M2S150TS-1FCSG536	M2GL150TS-1FCS536	M2GL150TS-1FCSG536
M2S060TS-1FG676	M2S060TS-1FGG676	M2GL060TS-1FG676	M2GL060TS-1FGG676
M2S090TS-1FG676	M2S090TS-1FGG676	M2GL090TS-1FG676	M2GL090TS-1FGG676
M2S050TS-1FG896	M2S050TS-1FGG896	M2GL050TS-1FG896	M2GL050TS-1FGG896
M2S150TS-1FC1152	M2S150TS-1FCG1152	M2GL150TS-1FC1152	M2GL150TS-1FCG1152
M2S005-TQ144I	M2S005-TQG144I	M2GL005-TQ144I	M2GL005-TQG144I
M2S010-TQ144I	M2S010-TQG144I	M2GL010-TQ144I	M2GL010-TQG144I
M2S005-VF256I	M2S005-VFG256I	M2GL005-VF256I	M2GL005-VFG256I
M2S010-VF256I	M2S010-VFG256I	M2GL010-VF256I	M2GL010-VFG256I
M2S025-VF256I	M2S025-VFG256I	M2GL025-VF256I	M2GL025-VFG256I
M2S025-FCS325I	M2S025-FCSG325I	M2GL025-FCS325I	M2GL025-FCSG325I
M2S050-FCS325I	M2S050-FCSG325I	M2GL050-FCS325I	M2GL050-FCSG325I
M2S060-FCS325I	M2S060-FCSG325I	M2GL060-FCS325I	M2GL060-FCSG325I
M2S090-FCS325I	M2S090-FCSG325I	M2GL090-FCS325I	M2GL090-FCSG325I
M2S005-VF400I	M2S005-VFG400I	M2GL005-VF400I	M2GL005-VFG400I

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S010-VF400I	M2S010-VFG400I	M2GL010-VF400I	M2GL010-VFG400I
M2S025-VF400I	M2S025-VFG400I	M2GL025-VF400I	M2GL025-VFG400I
M2S050-VF400I	M2S050-VFG400I	M2GL050-VF400I	M2GL050-VFG400I
M2S060-VF400I	M2S060-VFG400I	M2GL060-VF400I	M2GL060-VFG400I
M2S150-FCV484I	M2S150-FCVG484I	M2GL150-FCV484I	M2GL150-FCVG484I
M2S005-FG484I	M2S005-FGG484I	M2GL005-FG484I	M2GL005-FGG484I
M2S010-FG484I	M2S010-FGG484I	M2GL010-FG484I	M2GL010-FGG484I
M2S025-FG484I	M2S025-FGG484I	M2GL025-FG484I	M2GL025-FGG484I
M2S050-FG484I	M2S050-FGG484I	M2GL050-FG484I	M2GL050-FGG484I
M2S060-FG484I	M2S060-FGG484I	M2GL060-FG484I	M2GL060-FGG484I
M2S090-FG484I	M2S090-FGG484I	M2GL090-FG484I	M2GL090-FGG484I
M2S150-FCS536I	M2S150-FCSG536I	M2GL150-FCS536I	M2GL150-FCSG536I
M2S060-FG676I	M2S060-FGG676I	M2GL060-FG676I	M2GL060-FGG676I
M2S090-FG676I	M2S090-FGG676I	M2GL090-FG676I	M2GL090-FGG676I
M2S050-FG896I	M2S050-FGG896I	M2GL050-FG896I	M2GL050-FGG896I
M2S150-FC1152I	M2S150-FCG1152I	M2GL150-FC1152I	M2GL150-FCG1152I
M2S010T-VF256I	M2S010T-VFG256I	M2GL010T-VF256I	M2GL010T-VFG256I
M2S025T-VF256I	M2S025T-VFG256I	M2GL025T-VF256I	M2GL025T-VFG256I
M2S025T-FCS325I	M2S025T-FCSG325I	M2GL025T-FCS325I	M2GL025T-FCSG325I
M2S050T-FCS325I	M2S050T-FCSG325I	M2GL050T-FCS325I	M2GL050T-FCSG325I
M2S060T-FCS325I	M2S060T-FCSG325I	M2GL060T-FCS325I	M2GL060T-FCSG325I
M2S090T-FCS325I	M2S090T-FCSG325I	M2GL090T-FCS325I	M2GL090T-FCSG325I
M2S010T-VF400I	M2S010T-VFG400I	M2GL010T-VF400I	M2GL010T-VFG400I
M2S025T-VF400I	M2S025T-VFG400I	M2GL025T-VF400I	M2GL025T-VFG400I
M2S050T-VF400I	M2S050T-VFG400I	M2GL050T-VF400I	M2GL050T-VFG400I
M2S060T-VF400I	M2S060T-VFG400I	M2GL060T-VF400I	M2GL060T-VFG400I
M2S150T-FCV484I	M2S150T-FCVG484I	M2GL150T-FCV484I	M2GL150T-FCVG484I
M2S010T-FG484I	M2S010T-FGG484I	M2GL010T-FG484I	M2GL010T-FGG484I
M2S025T-FG484I	M2S025T-FGG484I	M2GL025T-FG484I	M2GL025T-FGG484I
M2S050T-FG484I	M2S050T-FGG484I	M2GL050T-FG484I	M2GL050T-FGG484I
M2S060T-FG484I	M2S060T-FGG484I	M2GL060T-FG484I	M2GL060T-FGG484I
M2S090T-FG484I	M2S090T-FGG484I	M2GL090T-FG484I	M2GL090T-FGG484I

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S150T-FCS536I	M2S150T-FCSG536I	M2GL150T-FCS536I	M2GL150T-FCSG536I
M2S060T-FG676I	M2S060T-FGG676I	M2GL060T-FG676I	M2GL060T-FGG676I
M2S090T-FG676I	M2S090T-FGG676I	M2GL090T-FG676I	M2GL090T-FGG676I
M2S050T-FG896I	M2S050T-FGG896I	M2GL050T-FG896I	M2GL050T-FGG896I
M2S150T-FC1152I	M2S150T-FCG1152I	M2GL150T-FC1152I	M2GL150T-FCG1152I
M2S005S-TQ144I	M2S005S-TQG144I	M2GL005S-TQ144I	M2GL005S-TQG144I
M2S010S-TQ144I	M2S010S-TQG144I	M2GL010S-TQ144I	M2GL010S-TQG144I
M2S005S-VF256I	M2S005S-VFG256I	M2GL005S-VF256I	M2GL005S-VFG256I
M2S005S-VF400I	M2S005S-VFG400I	M2GL005S-VF400I	M2GL005S-VFG400I
M2S005S-FG484I	M2S005S-FGG484I	M2GL005S-FG484I	M2GL005S-FGG484I
M2S010TS-VF256I	M2S010TS-VFG256I	M2GL010TS-VF256I	M2GL010TS-VFG256I
M2S025TS-VF256I	M2S025TS-VFG256I	M2GL025TS-VF256I	M2GL025TS-VFG256I
M2S025TS-FCS325I	M2S025TS-FCSG325I	M2GL025TS-FCS325I	M2GL025TS-FCSG325I
M2S050TS-FCS325I	M2S050TS-FCSG325I	M2GL050TS-FCS325I	M2GL050TS-FCSG325I
M2S060TS-FCS325I	M2S060TS-FCSG325I	M2GL060TS-FCS325I	M2GL060TS-FCSG325I
M2S090TS-FCS325I	M2S090TS-FCSG325I	M2GL090TS-FCS325I	M2GL090TS-FCSG325I
M2S010TS-VF400I	M2S010TS-VFG400I	M2GL010TS-VF400I	M2GL010TS-VFG400I
M2S025TS-VF400I	M2S025TS-VFG400I	M2GL025TS-VF400I	M2GL025TS-VFG400I
M2S050TS-VF400I	M2S050TS-VFG400I	M2GL050TS-VF400I	M2GL050TS-VFG400I
M2S060TS-VF400I	M2S060TS-VFG400I	M2GL060TS-VF400I	M2GL060TS-VFG400I
M2S150TS-FCV484I	M2S150TS-FCVG484I	M2GL150TS-FCV484I	M2GL150TS-FCVG484I
M2S010TS-FG484I	M2S010TS-FGG484I	M2GL010TS-FG484I	M2GL010TS-FGG484I
M2S025TS-FG484I	M2S025TS-FGG484I	M2GL025TS-FG484I	M2GL025TS-FGG484I
M2S050TS-FG484I	M2S050TS-FGG484I	M2GL050TS-FG484I	M2GL050TS-FGG484I
M2S060TS-FG484I	M2S060TS-FGG484I	M2GL060TS-FG484I	M2GL060TS-FGG484I
M2S090TS-FG484I	M2S090TS-FGG484I	M2GL090TS-FG484I	M2GL090TS-FGG484I
M2S150TS-FCS536I	M2S150TS-FCSG536I	M2GL150TS-FCS536I	M2GL150TS-FCSG536I
M2S060TS-FG676I	M2S060TS-FGG676I	M2GL060TS-FG676I	M2GL060TS-FGG676I
M2S090TS-FG676I	M2S090TS-FGG676I	M2GL090TS-FG676I	M2GL090TS-FGG676I
M2S050TS-FG896I	M2S050TS-FGG896I	M2GL050TS-FG896I	M2GL050TS-FGG896I
M2S150TS-FC1152I	M2S150TS-FCG1152I	M2GL150TS-FC1152I	M2GL150TS-FCG1152I
M2S005-1TQ144I	M2S005-1TQG144I	M2GL005-1TQ144I	M2GL005-1TQG144I

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S010-1TQ144I	M2S010-1TQG144I	M2GL010-1TQ144I	M2GL010-1TQG144I
M2S005-1VF256I	M2S005-1VFG256I	M2GL005-1VF256I	M2GL005-1VFG256I
M2S010-1VF256I	M2S010-1VFG256I	M2GL010-1VF256I	M2GL010-1VFG256I
M2S025-1VF256I	M2S025-1VFG256I	M2GL025-1VF256I	M2GL025-1VFG256I
M2S025-1FCS325I	M2S025-1FCSG325I	M2GL025-1FCS325I	M2GL025-1FCSG325I
M2S050-1FCS325I	M2S050-1FCSG325I	M2GL050-1FCS325I	M2GL050-1FCSG325I
M2S060-1FCS325I	M2S060-1FCSG325I	M2GL060-1FCS325I	M2GL060-1FCSG325I
M2S090-1FCS325I	M2S090-1FCSG325I	M2GL090-1FCS325I	M2GL090-1FCSG325I
M2S005-1VF400I	M2S005-1VFG400I	M2GL005-1VF400I	M2GL005-1VFG400I
M2S010-1VF400I	M2S010-1VFG400I	M2GL010-1VF400I	M2GL010-1VFG400I
M2S025-1VF400I	M2S025-1VFG400I	M2GL025-1VF400I	M2GL025-1VFG400I
M2S050-1VF400I	M2S050-1VFG400I	M2GL050-1VF400I	M2GL050-1VFG400I
M2S060-1VF400I	M2S060-1VFG400I	M2GL060-1VF400I	M2GL060-1VFG400I
M2S150-1FCV484I	M2S150-1FCVG484I	M2GL150-1FCV484I	M2GL150-1FCVG484I
M2S005-1FG484I	M2S005-1FGG484I	M2GL005-1FG484I	M2GL005-1FGG484I
M2S010-1FG484I	M2S010-1FGG484I	M2GL010-1FG484I	M2GL010-1FGG484I
M2S025-1FG484I	M2S025-1FGG484I	M2GL025-1FG484I	M2GL025-1FGG484I
M2S050-1FG484I	M2S050-1FGG484I	M2GL050-1FG484I	M2GL050-1FGG484I
M2S060-1FG484I	M2S060-1FGG484I	M2GL060-1FG484I	M2GL060-1FGG484I
M2S090-1FG484I	M2S090-1FGG484I	M2GL090-1FG484I	M2GL090-1FGG484I
M2S150-1FCS536I	M2S150-1FCSG536I	M2GL150-1FCS536I	M2GL150-1FCSG536I
M2S060-1FG676I	M2S060-1FGG676I	M2GL060-1FG676I	M2GL060-1FGG676I
M2S090-1FG676I	M2S090-1FGG676I	M2GL090-1FG676I	M2GL090-1FGG676I
M2S050-1FG896I	M2S050-1FGG896I	M2GL050-1FG896I	M2GL050-1FGG896I
M2S150-1FC1152I	M2S150-1FCG1152I	M2GL150-1FC1152I	M2GL150-1FCG1152I
M2S010T-1VF256I	M2S010T-1VFG256I	M2GL010T-1VF256I	M2GL010T-1VFG256I
M2S025T-1VF256I	M2S025T-1VFG256I	M2GL025T-1VF256I	M2GL025T-1VFG256I
M2S025T-1FCS325I	M2S025T-1FCSG325I	M2GL025T-1FCS325I	M2GL025T-1FCSG325I
M2S050T-1FCS325I	M2S050T-1FCSG325I	M2GL050T-1FCS325I	M2GL050T-1FCSG325I
M2S060T-1FCS325I	M2S060T-1FCSG325I	M2GL060T-1FCS325I	M2GL060T-1FCSG325I
M2S090T-1FCS325I	M2S090T-1FCSG325I	M2GL090T-1FCS325I	M2GL090T-1FCSG325I
M2S010T-1VF400I	M2S010T-1VFG400I	M2GL010T-1VF400I	M2GL010T-1VFG400I

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S025T-1VF400I	M2S025T-1VFG400I	M2GL025T-1VF400I	M2GL025T-1VFG400I
M2S050T-1VF400I	M2S050T-1VFG400I	M2GL050T-1VF400I	M2GL050T-1VFG400I
M2S060T-1VF400I	M2S060T-1VFG400I	M2GL060T-1VF400I	M2GL060T-1VFG400I
M2S150T-1FCV484I	M2S150T-1FCVG484I	M2GL150T-1FCV484I	M2GL150T-1FCVG484I
M2S010T-1FG484I	M2S010T-1FGG484I	M2GL010T-1FG484I	M2GL010T-1FGG484I
M2S025T-1FG484I	M2S025T-1FGG484I	M2GL025T-1FG484I	M2GL025T-1FGG484I
M2S050T-1FG484I	M2S050T-1FGG484I	M2GL050T-1FG484I	M2GL050T-1FGG484I
M2S060T-1FG484I	M2S060T-1FGG484I	M2GL060T-1FG484I	M2GL060T-1FGG484I
M2S090T-1FG484I	M2S090T-1FGG484I	M2GL090T-1FG484I	M2GL090T-1FGG484I
M2S150T-1FCS536I	M2S150T-1FCSG536I	M2GL150T-1FCS536I	M2GL150T-1FCSG536I
M2S060T-1FG676I	M2S060T-1FGG676I	M2GL060T-1FG676I	M2GL060T-1FGG676I
M2S090T-1FG676I	M2S090T-1FGG676I	M2GL090T-1FG676I	M2GL090T-1FGG676I
M2S050T-1FG896I	M2S050T-1FGG896I	M2GL050T-1FG896I	M2GL050T-1FGG896I
M2S150T-1FC1152I	M2S150T-1FCG1152I	M2GL150T-1FC1152I	M2GL150T-1FCG1152I
M2S005S-1TQ144I	M2S005S-1TQG144I	M2GL005S-1TQ144I	M2GL005S-1TQG144I
M2S010S-1TQ144I	M2S010S-1TQG144I	M2GL010S-1TQ144I	M2GL010S-1TQG144I
M2S005S-1VF256I	M2S005S-1VFG256I	M2GL005S-1VF256I	M2GL005S-1VFG256I
M2S005S-1VF400I	M2S005S-1VFG400I	M2GL005S-1VF400I	M2GL005S-1VFG400I
M2S005S-1FG484I	M2S005S-1FGG484I	M2GL005S-1FG484I	M2GL005S-1FGG484I
M2S010TS-1VF256I	M2S010TS-1VFG256I	M2GL010TS-1VF256I	M2GL010TS-1VFG256I
M2S025TS-1VF256I	M2S025TS-1VFG256I	M2GL025TS-1VF256I	M2GL025TS-1VFG256I
M2S025TS-1FCS325I	M2S025TS-1FCSG325I	M2GL025TS-1FCS325I	M2GL025TS-1FCSG325I
M2S050TS-1FCS325I	M2S050TS-1FCSG325I	M2GL050TS-1FCS325I	M2GL050TS-1FCSG325I
M2S060TS-1FCS325I	M2S060TS-1FCSG325I	M2GL060TS-1FCS325I	M2GL060TS-1FCSG325I
M2S090TS-1FCS325I	M2S090TS-1FCSG325I	M2GL090TS-1FCS325I	M2GL090TS-1FCSG325I
M2S010TS-1VF400I	M2S010TS-1VFG400I	M2GL010TS-1VF400I	M2GL010TS-1VFG400I
M2S025TS-1VF400I	M2S025TS-1VFG400I	M2GL025TS-1VF400I	M2GL025TS-1VFG400I
M2S050TS-1VF400I	M2S050TS-1VFG400I	M2GL050TS-1VF400I	M2GL050TS-1VFG400I
M2S060TS-1VF400I	M2S060TS-1VFG400I	M2GL060TS-1VF400I	M2GL060TS-1VFG400I
M2S150TS-1FCV484I	M2S150TS-1FCVG484I	M2GL150TS-1FCV484I	M2GL150TS-1FCVG484I
M2S010TS-1FG484I	M2S010TS-1FGG484I	M2GL010TS-1FG484I	M2GL010TS-1FGG484I
M2S025TS-1FG484I	M2S025TS-1FGG484I	M2GL025TS-1FG484I	M2GL025TS-1FGG484I

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
M2S050TS-1FG484I	M2S050TS-1FGG484I	M2GL050TS-1FG484I	M2GL050TS-1FGG484I
M2S060TS-1FG484I	M2S060TS-1FGG484I	M2GL060TS-1FG484I	M2GL060TS-1FGG484I
M2S090TS-1FG484I	M2S090TS-1FGG484I	M2GL090TS-1FG484I	M2GL090TS-1FGG484I
M2S150TS-1FCS536I	M2S150TS-1FCSG536I	M2GL150TS-1FCS536I	M2GL150TS-1FCSG536I
M2S060TS-1FG676I	M2S060TS-1FGG676I	M2GL060TS-1FG676I	M2GL060TS-1FGG676I
M2S090TS-1FG676I	M2S090TS-1FGG676I	M2GL090TS-1FG676I	M2GL090TS-1FGG676I
M2S050TS-1FG896I	M2S050TS-1FGG896I	M2GL050TS-1FG896I	M2GL050TS-1FGG896I
M2S150TS-1FC1152I	M2S150TS-1FCG1152I	M2GL150TS-1FC1152I	M2GL150TS-1FCG1152I
M2S010T-1FG484M	M2S010T-1FGG484M	M2GL010T-1FG484M	M2GL010T-1FGG484M
M2S025T-1FG484M	M2S025T-1FGG484M	M2GL025T-1FG484M	M2GL025T-1FGG484M
M2S050T-1FG484M	M2S050T-1FGG484M	M2GL050T-1FG484M	M2GL050T-1FGG484M
M2S060T-1FG484M	M2S060T-1FGG484M	M2GL060T-1FG484M	M2GL060T-1FGG484M
M2S090T-1FG484M	M2S090T-1FGG484M	M2GL090T-1FG484M	M2GL090T-1FGG484M
M2S150T-1FC1152M	M2S150T-1FCG1152M	M2GL150T-1FC1152M	M2GL150T-1FCG1152M
M2S010TS-1FG484M	M2S010TS-1FGG484M	M2GL010TS-1FG484M	M2GL010TS-1FGG484M
M2S025TS-1FG484M	M2S025TS-1FGG484M	M2GL025TS-1FG484M	M2GL025TS-1FGG484M
M2S050TS-1FG484M	M2S050TS-1FGG484M	M2GL050TS-1FG484M	M2GL050TS-1FGG484M
M2S060TS-1FG484M	M2S060TS-1FGG484M	M2GL060TS-1FG484M	M2GL060TS-1FGG484M
M2S090TS-1FG484M	M2S090TS-1FGG484M	M2GL090TS-1FG484M	M2GL090TS-1FGG484M
M2S150TS-1FC1152M	M2S150TS-1FCG1152M	M2GL150TS-1FC1152M	M2GL150TS-1FCG1152M
	M2S005S-1FGG484T2		M2GL005S-1FGG484T1
	M2S010TS-1FGG484T2		M2GL010S-1FGG484T1
	M2S025TS-1FGG484T2		M2GL025S-1FGG484T1
	M2S060TS-1FGG484T2		M2GL060S-1FGG484T1
	M2S090TS-1FGG484T2		M2GL090S-1FGG484T1
	M2S005S-1VFG256T2		M2GL005S-1FGG484T2
	M2S010TS-1VFG256T2		M2GL010TS-1FGG484T2
	M2S025TS-1VFG256T2		M2GL025TS-1FGG484T2
	M2S005S-1VFG400T2		M2GL060TS-1FGG484T2
	M2S010TS-1VFG400T2		M2GL090TS-1FGG484T2
	M2S025TS-1VFG400T2		M2GL005S-1VFG256T2
	M2S060TS-1VFG400T2		M2GL010TS-1VFG256T2

SmartFusion2		IGLOO2	
Leaded Part	Lead-Free Parts	Leaded Part	Lead-Free Part
	M2S060TS-1FGG676T2		M2GL025TS-1VFG256T2
	M2S090TS-1FGG676T2		M2GL005S-1VFG400T2
			M2GL010TS-1VFG400T2
			M2GL025TS-1VFG400T2
			M2GL060TS-1VFG400T2
			M2GL060TS-1FGG676T2
			M2GL090TS-1FGG676T2

Contact Information

If you have any questions about this subject, contact Microsemi Technical Support department by using the support portal at <https://soc.microsemi.com/Portal/Default.aspx>.

Regards,

Microsemi Corporation

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