

Microsemi Corporation

May 17, 2016

Product/Process Change Notification No: PCN1602

Change Classification: Minor

Subject: SPI port timing change for SmartFusion[®]2 and IGLOO[®]2 devices

Summary of Changes

This is to notify you about a specification change related to the setup time for the dedicated SPI ports in the SmartFusion2 and IGLOO2 product families. The SPI ports affected are SPI_0 and SPI_1. The next revision of the *DS0128: IGLOO2 and SmartFusion2 Datasheet* will reflect these changes.

Description of Changes

Setup and hold times have changed as indicated in [Table 2](#). In addition, the maximum clock frequency has been reduced to 20 MHz.

The following tables provide existing and new SPI specifications for your reference.

Table 1 Existing SPI Specifications

Symbol	Description	Maximum Clock Frequency (MHz)	Minimum	Typical (ns)	Maximum (ns)
SPI Master Configuration					
sp6m	SPI_[0 1]_DO setup time	25	(SPI_x_CLK_period/2) - 3.0	–	–
sp7m	SPI_[0 1]_DO hold time	25	(SPI_x_CLK_period/2) - 2.5	–	–
sp8m	SPI_[0 1]_DI setup time	25	8	–	–
sp9m	SPI_[0 1]_DI hold time	25	2.5	–	–
SPI Slave Configuration					
sp6s	SPI_[0 1]_DO setup time	25	(SPI_x_CLK_period/2) - 12.0	–	–
sp7s	SPI_[0 1]_DO hold time	25	(SPI_x_CLK_period/2) + 3.0	–	–
sp8s	SPI_[0 1]_DI setup time	25	2	–	–
sp9s	SPI_[0 1]_DI hold time	25	3	–	–

Table 2 New SPI Specifications

Symbol	Description	Maximum Clock Frequency (MHz)	Minimum	Typical (ns)	Maximum (ns)
SPI Master Configuration (Applicable to 005, 010, 025, 050 Devices)					
sp6m	SPI_[0 1]_DO setup time	20	(SPI_x_CLK_period/2) - 8.0	–	–
sp7m	SPI_[0 1]_DO hold time	20	(SPI_x_CLK_period/2) - 2.5	–	–
sp8m	SPI_[0 1]_DI setup time	20	12	–	–
sp9m	SPI_[0 1]_DI hold time	20	2.5	–	–
SPI Slave Configuration (Applicable to 005, 010, 025, 050 Devices)					
sp6s	SPI_[0 1]_DO setup time	20	(SPI_x_CLK_period/2) - 17.0	–	–
sp7s	SPI_[0 1]_DO hold time	20	(SPI_x_CLK_period/2) + 3.0	–	–
sp8s	SPI_[0 1]_DI setup time	20	2	–	–
sp9s	SPI_[0 1]_DI hold time	20	7	–	–
SPI Master Configuration (Applicable to 060, 090, and 150 Devices)					
sp6m	SPI_[0 1]_DO setup time	20	(SPI_x_CLK_period/2) - 7.0	–	–
sp7m	SPI_[0 1]_DO hold time	20	(SPI_x_CLK_period/2) - 9.5	–	–
sp8m	SPI_[0 1]_DI setup time	20	15	–	–

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Symbol	Description	Maximum Clock Frequency (MHz)	Minimum	Typical (ns)	Maximum (ns)
sp9m	SPI_[0 1]_DI hold time	20	- 2.5	–	–
SPI Slave Configuration (Applicable to 060, 090, and 150 Devices)					
sp6s	SPI_[0 1]_DO setup time	20	$(\text{SPI_x_CLK_period}/2) - 16.0$	–	–
sp7s	SPI_[0 1]_DO hold time	20	$(\text{SPI_x_CLK_period}/2) - 3.5$	–	–
sp8s	SPI_[0 1]_DI setup time	20	3	–	–
sp9s	SPI_[0 1]_DI hold time	20	2.5	–	–

Application Impact

The maximum clock frequency setup in the designs needs to be verified. If a 25 MHz SPI clock is currently used, the clock frequency must be lowered to 20 MHz.

Affected Devices

See [Appendix: Affected SmartFusion2 and IGLOO2 Devices](#).

Contact Information

For further clarifications or questions, contact Microsemi's Technical Support at: soc_tech@microsemi.com

Regards,

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Any projected dates in this PCN are based on the most current product information at the time this PCN is being issued, but they may change due to unforeseen circumstances. For the latest schedule and any other information, please contact your local Microsemi Sales Office, the factory contact shown above, or your local distributor.

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Appendix: Affected SmartFusion2 and IGLOO2 Devices

IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL005-TQ144	M2GL005-TQG144	M2S005-TQ144	M2S005-TQG144
M2GL010-TQ144	M2GL010-TQG144	M2S010-TQ144	M2S010-TQG144
M2GL005-VF256	M2GL005-VFG256	M2S005-VF256	M2S005-VFG256
M2GL010-VF256	M2GL010-VFG256	M2S010-VF256	M2S010-VFG256
M2GL025-VF256	M2GL025-VFG256	M2S025-VF256	M2S025-VFG256
M2GL025-FCS325	M2GL025-FCSG325	M2S025-FCS325	M2S025-FCSG325
M2GL050-FCS325	M2GL050-FCSG325	M2S050-FCS325	M2S050-FCSG325
M2GL060-FCS325	M2GL060-FCSG325	M2S060-FCS325	M2S060-FCSG325
M2GL090-FCS325	M2GL090-FCSG325	M2S090-FCS325	M2S090-FCSG325
M2GL005-VF400	M2GL005-VFG400	M2S005-VF400	M2S005-VFG400
M2GL010-VF400	M2GL010-VFG400	M2S010-VF400	M2S010-VFG400
M2GL025-VF400	M2GL025-VFG400	M2S025-VF400	M2S025-VFG400
M2GL050-VF400	M2GL050-VFG400	M2S050-VF400	M2S050-VFG400
M2GL060-VF400	M2GL060-VFG400	M2S060-VF400	M2S060-VFG400
M2GL150-FCV484	M2GL150-FCVG484	M2S150-FCV484	M2S150-FCVG484
M2GL005-FG484	M2GL005-FGG484	M2S005-FG484	M2S005-FGG484
M2GL010-FG484	M2GL010-FGG484	M2S010-FG484	M2S010-FGG484
M2GL025-FG484	M2GL025-FGG484	M2S025-FG484	M2S025-FGG484
M2GL050-FG484	M2GL050-FGG484	M2S050-FG484	M2S050-FGG484
M2GL060-FG484	M2GL060-FGG484	M2S060-FG484	M2S060-FGG484
M2GL090-FG484	M2GL090-FGG484	M2S090-FG484	M2S090-FGG484
M2GL150-FCS536	M2GL150-FCSG536	M2S150-FCS536	M2S150-FCSG536
M2GL060-FG676	M2GL060-FGG676	M2S060-FG676	M2S060-FGG676
M2GL090-FG676	M2GL090-FGG676	M2S090-FG676	M2S090-FGG676
M2GL050-FG896	M2GL050-FGG896	M2S050-FG896	M2S050-FGG896
M2GL150-FC1152	M2GL150-FCG1152	M2S150-FC1152	M2S150-FCG1152
M2GL010T-VF256	M2GL010T-VFG256	M2S010T-VF256	M2S010T-VFG256
M2GL025T-VF256	M2GL025T-VFG256	M2S025T-VF256	M2S025T-VFG256
M2GL025T-FCS325	M2GL025T-FCSG325	M2S025T-FCS325	M2S025T-FCSG325
M2GL050T-FCS325	M2GL050T-FCSG325	M2S050T-FCS325	M2S050T-FCSG325
M2GL060T-FCS325	M2GL060T-FCSG325	M2S060T-FCS325	M2S060T-FCSG325
M2GL090T-FCS325	M2GL090T-FCSG325	M2S090T-FCS325	M2S090T-FCSG325
M2GL010T-VF400	M2GL010T-VFG400	M2S010T-VF400	M2S010T-VFG400
M2GL025T-VF400	M2GL025T-VFG400	M2S025T-VF400	M2S025T-VFG400
M2GL050T-VF400	M2GL050T-VFG400	M2S050T-VF400	M2S050T-VFG400
M2GL060T-VF400	M2GL060T-VFG400	M2S060T-VF400	M2S060T-VFG400
M2GL150T-FCV484	M2GL150T-FCVG484	M2S150T-FCV484	M2S150T-FCVG484
M2GL010T-FG484	M2GL010T-FGG484	M2S010T-FG484	M2S010T-FGG484
M2GL025T-FG484	M2GL025T-FGG484	M2S025T-FG484	M2S025T-FGG484
M2GL050T-FG484	M2GL050T-FGG484	M2S050T-FG484	M2S050T-FGG484

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IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL060T-FG484	M2GL060T-FGG484	M2S060T-FG484	M2S060T-FGG484
M2GL090T-FG484	M2GL090T-FGG484	M2S090T-FG484	M2S090T-FGG484
M2GL150T-FCS536	M2GL150T-FCSG536	M2S150T-FCS536	M2S150T-FCSG536
M2GL060T-FG676	M2GL060T-FGG676	M2S060T-FG676	M2S060T-FGG676
M2GL090T-FG676	M2GL090T-FGG676	M2S090T-FG676	M2S090T-FGG676
M2GL050T-FG896	M2GL050T-FGG896	M2S050T-FG896	M2S050T-FGG896
M2GL150T-FC1152	M2GL150T-FCG1152	M2S150T-FC1152	M2S150T-FCG1152
M2GL005S-TQ144	M2GL005S-TQG144	M2S005S-TQ144	M2S005S-TQG144
M2GL010S-TQ144	M2GL010S-TQG144	M2S010S-TQ144	M2S010S-TQG144
M2GL005S-VF256	M2GL005S-VFG256	M2S005S-VF256	M2S005S-VFG256
M2GL005S-VF400	M2GL005S-VFG400	M2S005S-VF400	M2S005S-VFG400
M2GL005S-FG484	M2GL005S-FGG484	M2S005S-FG484	M2S005S-FGG484
M2GL010TS-VF256	M2GL010TS-VFG256	M2S010TS-VF256	M2S010TS-VFG256
M2GL025TS-VF256	M2GL025TS-VFG256	M2S025TS-VF256	M2S025TS-VFG256
M2GL025TS-FCS325	M2GL025TS-FCSG325	M2S025TS-FCS325	M2S025TS-FCSG325
M2GL050TS-FCS325	M2GL050TS-FCSG325	M2S050TS-FCS325	M2S050TS-FCSG325
M2GL060TS-FCS325	M2GL060TS-FCSG325	M2S060TS-FCS325	M2S060TS-FCSG325
M2GL090TS-FCS325	M2GL090TS-FCSG325	M2S090TS-FCS325	M2S090TS-FCSG325
M2GL010TS-VF400	M2GL010TS-VFG400	M2S010TS-VF400	M2S010TS-VFG400
M2GL025TS-VF400	M2GL025TS-VFG400	M2S025TS-VF400	M2S025TS-VFG400
M2GL050TS-VF400	M2GL050TS-VFG400	M2S050TS-VF400	M2S050TS-VFG400
M2GL060TS-VF400	M2GL060TS-VFG400	M2S060TS-VF400	M2S060TS-VFG400
M2GL150TS-FCV484	M2GL150TS-FCVG484	M2S150TS-FCV484	M2S150TS-FCVG484
M2GL010TS-FG484	M2GL010TS-FGG484	M2S010TS-FG484	M2S010TS-FGG484
M2GL025TS-FG484	M2GL025TS-FGG484	M2S025TS-FG484	M2S025TS-FGG484
M2GL050TS-FG484	M2GL050TS-FGG484	M2S050TS-FG484	M2S050TS-FGG484
M2GL060TS-FG484	M2GL060TS-FGG484	M2S060TS-FG484	M2S060TS-FGG484
M2GL090TS-FG484	M2GL090TS-FGG484	M2S090TS-FG484	M2S090TS-FGG484
M2GL150TS-FCS536	M2GL150TS-FCSG536	M2S150TS-FCS536	M2S150TS-FCSG536
M2GL060TS-FG676	M2GL060TS-FGG676	M2S060TS-FG676	M2S060TS-FGG676
M2GL090TS-FG676	M2GL090TS-FGG676	M2S090TS-FG676	M2S090TS-FGG676
M2GL050TS-FG896	M2GL050TS-FGG896	M2S050TS-FG896	M2S050TS-FGG896
M2GL150TS-FC1152	M2GL150TS-FCG1152	M2S150TS-FC1152	M2S150TS-FCG1152
M2GL005-1TQ144	M2GL005-1TQG144	M2S005-1TQ144	M2S005-1TQG144
M2GL010-1TQ144	M2GL010-1TQG144	M2S010-1TQ144	M2S010-1TQG144
M2GL005-1VF256	M2GL005-1VFG256	M2S005-1VF256	M2S005-1VFG256
M2GL010-1VF256	M2GL010-1VFG256	M2S010-1VF256	M2S010-1VFG256
M2GL025-1VF256	M2GL025-1VFG256	M2S025-1VF256	M2S025-1VFG256
M2GL025-1FCS325	M2GL025-1FCSG325	M2S025-1FCS325	M2S025-1FCSG325
M2GL050-1FCS325	M2GL050-1FCSG325	M2S050-1FCS325	M2S050-1FCSG325
M2GL060-1FCS325	M2GL060-1FCSG325	M2S060-1FCS325	M2S060-1FCSG325

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IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL090-1FCS325	M2GL090-1FCSG325	M2S090-1FCS325	M2S090-1FCSG325
M2GL005-1VF400	M2GL005-1VFG400	M2S005-1VF400	M2S005-1VFG400
M2GL010-1VF400	M2GL010-1VFG400	M2S010-1VF400	M2S010-1VFG400
M2GL025-1VF400	M2GL025-1VFG400	M2S025-1VF400	M2S025-1VFG400
M2GL050-1VF400	M2GL050-1VFG400	M2S050-1VF400	M2S050-1VFG400
M2GL060-1VF400	M2GL060-1VFG400	M2S060-1VF400	M2S060-1VFG400
M2GL150-1FCV484	M2GL150-1FCVG484	M2S150-1FCV484	M2S150-1FCVG484
M2GL005-1FG484	M2GL005-1FGG484	M2S005-1FG484	M2S005-1FGG484
M2GL010-1FG484	M2GL010-1FGG484	M2S010-1FG484	M2S010-1FGG484
M2GL025-1FG484	M2GL025-1FGG484	M2S025-1FG484	M2S025-1FGG484
M2GL050-1FG484	M2GL050-1FGG484	M2S050-1FG484	M2S050-1FGG484
M2GL060-1FG484	M2GL060-1FGG484	M2S060-1FG484	M2S060-1FGG484
M2GL090-1FG484	M2GL090-1FGG484	M2S090-1FG484	M2S090-1FGG484
M2GL150-1FCS536	M2GL150-1FCSG536	M2S150-1FCS536	M2S150-1FCSG536
M2GL060-1FG676	M2GL060-1FGG676	M2S060-1FG676	M2S060-1FGG676
M2GL090-1FG676	M2GL090-1FGG676	M2S090-1FG676	M2S090-1FGG676
M2GL050-1FG896	M2GL050-1FGG896	M2S050-1FG896	M2S050-1FGG896
M2GL150-1FC1152	M2GL150-1FCG1152	M2S150-1FC1152	M2S150-1FCG1152
M2GL010T-1VF256	M2GL010T-1VFG256	M2S010T-1VF256	M2S010T-1VFG256
M2GL025T-1VF256	M2GL025T-1VFG256	M2S025T-1VF256	M2S025T-1VFG256
M2GL025T-1FCS325	M2GL025T-1FCSG325	M2S025T-1FCS325	M2S025T-1FCSG325
M2GL050T-1FCS325	M2GL050T-1FCSG325	M2S050T-1FCS325	M2S050T-1FCSG325
M2GL060T-1FCS325	M2GL060T-1FCSG325	M2S060T-1FCS325	M2S060T-1FCSG325
M2GL090T-1FCS325	M2GL090T-1FCSG325	M2S090T-1FCS325	M2S090T-1FCSG325
M2GL010T-1VF400	M2GL010T-1VFG400	M2S010T-1VF400	M2S010T-1VFG400
M2GL025T-1VF400	M2GL025T-1VFG400	M2S025T-1VF400	M2S025T-1VFG400
M2GL050T-1VF400	M2GL050T-1VFG400	M2S050T-1VF400	M2S050T-1VFG400
M2GL060T-1VF400	M2GL060T-1VFG400	M2S060T-1VF400	M2S060T-1VFG400
M2GL150T-1FCV484	M2GL150T-1FCVG484	M2S150T-1FCV484	M2S150T-1FCVG484
M2GL010T-1FG484	M2GL010T-1FGG484	M2S010T-1FG484	M2S010T-1FGG484
M2GL025T-1FG484	M2GL025T-1FGG484	M2S025T-1FG484	M2S025T-1FGG484
M2GL050T-1FG484	M2GL050T-1FGG484	M2S050T-1FG484	M2S050T-1FGG484
M2GL060T-1FG484	M2GL060T-1FGG484	M2S060T-1FG484	M2S060T-1FGG484
M2GL090T-1FG484	M2GL090T-1FGG484	M2S090T-1FG484	M2S090T-1FGG484
M2GL150T-1FCS536	M2GL150T-1FCSG536	M2S150T-1FCS536	M2S150T-1FCSG536
M2GL060T-1FG676	M2GL060T-1FGG676	M2S060T-1FG676	M2S060T-1FGG676
M2GL090T-1FG676	M2GL090T-1FGG676	M2S090T-1FG676	M2S090T-1FGG676
M2GL050T-1FG896	M2GL050T-1FGG896	M2S050T-1FG896	M2S050T-1FGG896
M2GL150T-1FC1152	M2GL150T-1FCG1152	M2S150T-1FC1152	M2S150T-1FCG1152
M2GL005S-1TQ144	M2GL005S-1TQG144	M2S005S-1TQ144	M2S005S-1TQG144
M2GL010S-1TQ144	M2GL010S-1TQG144	M2S010S-1TQ144	M2S010S-1TQG144

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IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL005S-1VF256	M2GL005S-1VFG256	M2S005S-1VF256	M2S005S-1VFG256
M2GL005S-1VF400	M2GL005S-1VFG400	M2S005S-1VF400	M2S005S-1VFG400
M2GL005S-1FG484	M2GL005S-1FGG484	M2S005S-1FG484	M2S005S-1FGG484
M2GL010TS-1VF256	M2GL010TS-1VFG256	M2S010TS-1VF256	M2S010TS-1VFG256
M2GL025TS-1VF256	M2GL025TS-1VFG256	M2S025TS-1VF256	M2S025TS-1VFG256
M2GL025TS-1FCS325	M2GL025TS-1FCSG325	M2S025TS-1FCS325	M2S025TS-1FCSG325
M2GL050TS-1FCS325	M2GL050TS-1FCSG325	M2S050TS-1FCS325	M2S050TS-1FCSG325
M2GL060TS-1FCS325	M2GL060TS-1FCSG325	M2S060TS-1FCS325	M2S060TS-1FCSG325
M2GL090TS-1FCS325	M2GL090TS-1FCSG325	M2S090TS-1FCS325	M2S090TS-1FCSG325
M2GL010TS-1VF400	M2GL010TS-1VFG400	M2S010TS-1VF400	M2S010TS-1VFG400
M2GL025TS-1VF400	M2GL025TS-1VFG400	M2S025TS-1VF400	M2S025TS-1VFG400
M2GL050TS-1VF400	M2GL050TS-1VFG400	M2S050TS-1VF400	M2S050TS-1VFG400
M2GL060TS-1VF400	M2GL060TS-1VFG400	M2S060TS-1VF400	M2S060TS-1VFG400
M2GL150TS-1FCV484	M2GL150TS-1FCVG484	M2S150TS-1FCV484	M2S150TS-1FCVG484
M2GL010TS-1FG484	M2GL010TS-1FGG484	M2S010TS-1FG484	M2S010TS-1FGG484
M2GL025TS-1FG484	M2GL025TS-1FGG484	M2S025TS-1FG484	M2S025TS-1FGG484
M2GL050TS-1FG484	M2GL050TS-1FGG484	M2S050TS-1FG484	M2S050TS-1FGG484
M2GL060TS-1FG484	M2GL060TS-1FGG484	M2S060TS-1FG484	M2S060TS-1FGG484
M2GL090TS-1FG484	M2GL090TS-1FGG484	M2S090TS-1FG484	M2S090TS-1FGG484
M2GL150TS-1FCS536	M2GL150TS-1FCSG536	M2S150TS-1FCS536	M2S150TS-1FCSG536
M2GL060TS-1FG676	M2GL060TS-1FGG676	M2S060TS-1FG676	M2S060TS-1FGG676
M2GL090TS-1FG676	M2GL090TS-1FGG676	M2S090TS-1FG676	M2S090TS-1FGG676
M2GL050TS-1FG896	M2GL050TS-1FGG896	M2S050TS-1FG896	M2S050TS-1FGG896
M2GL150TS-1FC1152	M2GL150TS-1FCG1152	M2S150TS-1FC1152	M2S150TS-1FCG1152
M2GL005-TQ144I	M2GL005-TQG144I	M2S005-TQ144I	M2S005-TQG144I
M2GL010-TQ144I	M2GL010-TQG144I	M2S010-TQ144I	M2S010-TQG144I
M2GL005-VF256I	M2GL005-VFG256I	M2S005-VF256I	M2S005-VFG256I
M2GL010-VF256I	M2GL010-VFG256I	M2S010-VF256I	M2S010-VFG256I
M2GL025-VF256I	M2GL025-VFG256I	M2S025-VF256I	M2S025-VFG256I
M2GL025-FCS325I	M2GL025-FCSG325I	M2S025-FCS325I	M2S025-FCSG325I
M2GL050-FCS325I	M2GL050-FCSG325I	M2S050-FCS325I	M2S050-FCSG325I
M2GL060-FCS325I	M2GL060-FCSG325I	M2S060-FCS325I	M2S060-FCSG325I
M2GL090-FCS325I	M2GL090-FCSG325I	M2S090-FCS325I	M2S090-FCSG325I
M2GL005-VF400I	M2GL005-VFG400I	M2S005-VF400I	M2S005-VFG400I
M2GL010-VF400I	M2GL010-VFG400I	M2S010-VF400I	M2S010-VFG400I
M2GL025-VF400I	M2GL025-VFG400I	M2S025-VF400I	M2S025-VFG400I
M2GL050-VF400I	M2GL050-VFG400I	M2S050-VF400I	M2S050-VFG400I
M2GL060-VF400I	M2GL060-VFG400I	M2S060-VF400I	M2S060-VFG400I
M2GL150-FCV484I	M2GL150-FCVG484I	M2S150-FCV484I	M2S150-FCVG484I
M2GL005-FG484I	M2GL005-FGG484I	M2S005-FG484I	M2S005-FGG484I
M2GL010-FG484I	M2GL010-FGG484I	M2S010-FG484I	M2S010-FGG484I

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www.microsemi.com

IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL025-FG484I	M2GL025-FGG484I	M2S025-FG484I	M2S025-FGG484I
M2GL050-FG484I	M2GL050-FGG484I	M2S050-FG484I	M2S050-FGG484I
M2GL060-FG484I	M2GL060-FGG484I	M2S060-FG484I	M2S060-FGG484I
M2GL090-FG484I	M2GL090-FGG484I	M2S090-FG484I	M2S090-FGG484I
M2GL150-FCS536I	M2GL150-FCSG536I	M2S150-FCS536I	M2S150-FCSG536I
M2GL060-FG676I	M2GL060-FGG676I	M2S060-FG676I	M2S060-FGG676I
M2GL090-FG676I	M2GL090-FGG676I	M2S090-FG676I	M2S090-FGG676I
M2GL050-FG896I	M2GL050-FGG896I	M2S050-FG896I	M2S050-FGG896I
M2GL150-FC1152I	M2GL150-FCG1152I	M2S150-FC1152I	M2S150-FCG1152I
M2GL010T-VF256I	M2GL010T-VFG256I	M2S010T-VF256I	M2S010T-VFG256I
M2GL025T-VF256I	M2GL025T-VFG256I	M2S025T-VF256I	M2S025T-VFG256I
M2GL025T-FCS325I	M2GL025T-FCSG325I	M2S025T-FCS325I	M2S025T-FCSG325I
M2GL050T-FCS325I	M2GL050T-FCSG325I	M2S050T-FCS325I	M2S050T-FCSG325I
M2GL060T-FCS325I	M2GL060T-FCSG325I	M2S060T-FCS325I	M2S060T-FCSG325I
M2GL090T-FCS325I	M2GL090T-FCSG325I	M2S090T-FCS325I	M2S090T-FCSG325I
M2GL010T-VF400I	M2GL010T-VFG400I	M2S010T-VF400I	M2S010T-VFG400I
M2GL025T-VF400I	M2GL025T-VFG400I	M2S025T-VF400I	M2S025T-VFG400I
M2GL050T-VF400I	M2GL050T-VFG400I	M2S050T-VF400I	M2S050T-VFG400I
M2GL060T-VF400I	M2GL060T-VFG400I	M2S060T-VF400I	M2S060T-VFG400I
M2GL150T-FCV484I	M2GL150T-FCVG484I	M2S150T-FCV484I	M2S150T-FCVG484I
M2GL010T-FG484I	M2GL010T-FGG484I	M2S010T-FG484I	M2S010T-FGG484I
M2GL025T-FG484I	M2GL025T-FGG484I	M2S025T-FG484I	M2S025T-FGG484I
M2GL050T-FG484I	M2GL050T-FGG484I	M2S050T-FG484I	M2S050T-FGG484I
M2GL060T-FG484I	M2GL060T-FGG484I	M2S060T-FG484I	M2S060T-FGG484I
M2GL090T-FG484I	M2GL090T-FGG484I	M2S090T-FG484I	M2S090T-FGG484I
M2GL150T-FCS536I	M2GL150T-FCSG536I	M2S150T-FCS536I	M2S150T-FCSG536I
M2GL060T-FG676I	M2GL060T-FGG676I	M2S060T-FG676I	M2S060T-FGG676I
M2GL090T-FG676I	M2GL090T-FGG676I	M2S090T-FG676I	M2S090T-FGG676I
M2GL050T-FG896I	M2GL050T-FGG896I	M2S050T-FG896I	M2S050T-FGG896I
M2GL150T-FC1152I	M2GL150T-FCG1152I	M2S150T-FC1152I	M2S150T-FCG1152I
M2GL005S-TQ144I	M2GL005S-TQG144I	M2S005S-TQ144I	M2S005S-TQG144I
M2GL010S-TQ144I	M2GL010S-TQG144I	M2S010S-TQ144I	M2S010S-TQG144I
M2GL005S-VF256I	M2GL005S-VFG256I	M2S005S-VF256I	M2S005S-VFG256I
M2GL005S-VF400I	M2GL005S-VFG400I	M2S005S-VF400I	M2S005S-VFG400I
M2GL005S-FG484I	M2GL005S-FGG484I	M2S005S-FG484I	M2S005S-FGG484I
M2GL010TS-VF256I	M2GL010TS-VFG256I	M2S010TS-VF256I	M2S010TS-VFG256I
M2GL025TS-VF256I	M2GL025TS-VFG256I	M2S025TS-VF256I	M2S025TS-VFG256I
M2GL025TS-FCS325I	M2GL025TS-FCSG325I	M2S025TS-FCS325I	M2S025TS-FCSG325I
M2GL050TS-FCS325I	M2GL050TS-FCSG325I	M2S050TS-FCS325I	M2S050TS-FCSG325I
M2GL060TS-FCS325I	M2GL060TS-FCSG325I	M2S060TS-FCS325I	M2S060TS-FCSG325I
M2GL090TS-FCS325I	M2GL090TS-FCSG325I	M2S090TS-FCS325I	M2S090TS-FCSG325I

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IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL010TS-VF400I	M2GL010TS-VFG400I	M2S010TS-VF400I	M2S010TS-VFG400I
M2GL025TS-VF400I	M2GL025TS-VFG400I	M2S025TS-VF400I	M2S025TS-VFG400I
M2GL050TS-VF400I	M2GL050TS-VFG400I	M2S050TS-VF400I	M2S050TS-VFG400I
M2GL060TS-VF400I	M2GL060TS-VFG400I	M2S060TS-VF400I	M2S060TS-VFG400I
M2GL150TS-FCV484I	M2GL150TS-FCVG484I	M2S150TS-FCV484I	M2S150TS-FCVG484I
M2GL010TS-FG484I	M2GL010TS-FGG484I	M2S010TS-FG484I	M2S010TS-FGG484I
M2GL025TS-FG484I	M2GL025TS-FGG484I	M2S025TS-FG484I	M2S025TS-FGG484I
M2GL050TS-FG484I	M2GL050TS-FGG484I	M2S050TS-FG484I	M2S050TS-FGG484I
M2GL060TS-FG484I	M2GL060TS-FGG484I	M2S060TS-FG484I	M2S060TS-FGG484I
M2GL090TS-FG484I	M2GL090TS-FGG484I	M2S090TS-FG484I	M2S090TS-FGG484I
M2GL150TS-FCS536I	M2GL150TS-FCSG536I	M2S150TS-FCS536I	M2S150TS-FCSG536I
M2GL060TS-FG676I	M2GL060TS-FGG676I	M2S060TS-FG676I	M2S060TS-FGG676I
M2GL090TS-FG676I	M2GL090TS-FGG676I	M2S090TS-FG676I	M2S090TS-FGG676I
M2GL050TS-FG896I	M2GL050TS-FGG896I	M2S050TS-FG896I	M2S050TS-FGG896I
M2GL150TS-FC1152I	M2GL150TS-FCG1152I	M2S150TS-FC1152I	M2S150TS-FCG1152I
M2GL005-1TQ144I	M2GL005-1TQG144I	M2S005-1TQ144I	M2S005-1TQG144I
M2GL010-1TQ144I	M2GL010-1TQG144I	M2S010-1TQ144I	M2S010-1TQG144I
M2GL005-1VF256I	M2GL005-1VFG256I	M2S005-1VF256I	M2S005-1VFG256I
M2GL010-1VF256I	M2GL010-1VFG256I	M2S010-1VF256I	M2S010-1VFG256I
M2GL025-1VF256I	M2GL025-1VFG256I	M2S025-1VF256I	M2S025-1VFG256I
M2GL025-1FCS325I	M2GL025-1FCSG325I	M2S025-1FCS325I	M2S025-1FCSG325I
M2GL050-1FCS325I	M2GL050-1FCSG325I	M2S050-1FCS325I	M2S050-1FCSG325I
M2GL060-1FCS325I	M2GL060-1FCSG325I	M2S060-1FCS325I	M2S060-1FCSG325I
M2GL090-1FCS325I	M2GL090-1FCSG325I	M2S090-1FCS325I	M2S090-1FCSG325I
M2GL005-1VF400I	M2GL005-1VFG400I	M2S005-1VF400I	M2S005-1VFG400I
M2GL010-1VF400I	M2GL010-1VFG400I	M2S010-1VF400I	M2S010-1VFG400I
M2GL025-1VF400I	M2GL025-1VFG400I	M2S025-1VF400I	M2S025-1VFG400I
M2GL050-1VF400I	M2GL050-1VFG400I	M2S050-1VF400I	M2S050-1VFG400I
M2GL060-1VF400I	M2GL060-1VFG400I	M2S060-1VF400I	M2S060-1VFG400I
M2GL150-1FCV484I	M2GL150-1FCVG484I	M2S150-1FCV484I	M2S150-1FCVG484I
M2GL005-1FG484I	M2GL005-1FGG484I	M2S005-1FG484I	M2S005-1FGG484I
M2GL010-1FG484I	M2GL010-1FGG484I	M2S010-1FG484I	M2S010-1FGG484I
M2GL025-1FG484I	M2GL025-1FGG484I	M2S025-1FG484I	M2S025-1FGG484I
M2GL050-1FG484I	M2GL050-1FGG484I	M2S050-1FG484I	M2S050-1FGG484I
M2GL060-1FG484I	M2GL060-1FGG484I	M2S060-1FG484I	M2S060-1FGG484I
M2GL090-1FG484I	M2GL090-1FGG484I	M2S090-1FG484I	M2S090-1FGG484I
M2GL150-1FCS536I	M2GL150-1FCSG536I	M2S150-1FCS536I	M2S150-1FCSG536I
M2GL060-1FG676I	M2GL060-1FGG676I	M2S060-1FG676I	M2S060-1FGG676I
M2GL090-1FG676I	M2GL090-1FGG676I	M2S090-1FG676I	M2S090-1FGG676I
M2GL050-1FG896I	M2GL050-1FGG896I	M2S050-1FG896I	M2S050-1FGG896I
M2GL150-1FC1152I	M2GL150-1FCG1152I	M2S150-1FC1152I	M2S150-1FCG1152I

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www.microsemi.com

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

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IGLOO2		SmartFusion2	
Leaded Part	Lead-Free Part	Leaded Part	Lead-Free Part
M2GL090TS-1FG484I	M2GL090TS-1FGG484I	M2S090TS-1FG484I	M2S090TS-1FGG484I
M2GL150TS-1FCS536I	M2GL150TS-1FC5G536I	M2S150TS-1FCS536I	M2S150TS-1FC5G536I
M2GL060TS-1FG676I	M2GL060TS-1FGG676I	M2S060TS-1FG676I	M2S060TS-1FGG676I
M2GL090TS-1FG676I	M2GL090TS-1FGG676I	M2S090TS-1FG676I	M2S090TS-1FGG676I
M2GL050TS-1FG896I	M2GL050TS-1FGG896I	M2S050TS-1FG896I	M2S050TS-1FGG896I
M2GL150TS-1FC1152I	M2GL150TS-1FCG1152I	M2S150TS-1FC1152I	M2S150TS-1FCG1152I
M2GL010T-1FG484M	M2GL010T-1FGG484M	M2S010T-1FG484M	M2S010T-1FGG484M
M2GL025T-1FG484M	M2GL025T-1FGG484M	M2S025T-1FG484M	M2S025T-1FGG484M
M2GL050T-1FG484M	M2GL050T-1FGG484M	M2S050T-1FG484M	M2S050T-1FGG484M
M2GL060T-1FG484M	M2GL060T-1FGG484M	M2S060T-1FG484M	M2S060T-1FGG484M
M2GL090T-1FG484M	M2GL090T-1FGG484M	M2S090T-1FG484M	M2S090T-1FGG484M
M2GL150T-1FC1152M	M2GL150T-1FCG1152M	M2S150T-1FC1152M	M2S150T-1FCG1152M
M2GL010TS-1FG484M	M2GL010TS-1FGG484M	M2S010TS-1FG484M	M2S010TS-1FGG484M
M2GL025TS-1FG484M	M2GL025TS-1FGG484M	M2S025TS-1FG484M	M2S025TS-1FGG484M
M2GL050TS-1FG484M	M2GL050TS-1FGG484M	M2S050TS-1FG484M	M2S050TS-1FGG484M
M2GL060TS-1FG484M	M2GL060TS-1FGG484M	M2S060TS-1FG484M	M2S060TS-1FGG484M
M2GL090TS-1FG484M	M2GL090TS-1FGG484M	M2S090TS-1FG484M	M2S090TS-1FGG484M
M2GL150TS-1FC1152M	M2GL150TS-1FCG1152M	M2S150TS-1FC1152M	M2S150TS-1FCG1152M
	M2GL005-1FGG484T1		M2S005S-1FGG484T2
	M2GL010-1FGG484T1		M2S010TS-1FGG484T2
	M2GL025-1FGG484T1		M2S025TS-1FGG484T2
	M2GL060-1FGG484T1		M2S060TS-1FGG484T2
	M2GL090-1FGG484T1		M2S090TS-1FGG484T2
	M2GL005S-1FGG484T2		M2S005S-1VFG256T2
	M2GL010TS-1FGG484T2		M2S010TS-1VFG256T2
	M2GL025TS-1FGG484T2		M2S025TS-1VFG256T2
	M2GL060TS-1FGG484T2		M2S005S-1VFG400T2
	M2GL090TS-1FGG484T2		M2S010TS-1VFG400T2
	M2GL005S-1VFG256T2		M2S025TS-1VFG400T2
	M2GL010TS-1VFG256T2		M2S060TS-1VFG400T2
	M2GL025TS-1VFG256T2		M2S060TS-1FGG676T2
	M2GL005S-1VFG400T2		M2S090TS-1FGG676T2
	M2GL010TS-1VFG400T2		
	M2GL025TS-1VFG400T2		
	M2GL060TS-1VFG400T2		
	M2GL060TS-1FGG676T2		
	M2GL090TS-1FGG676T2		

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