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Understanding Embedded - FPGAs (Field Programmable Gate Array)

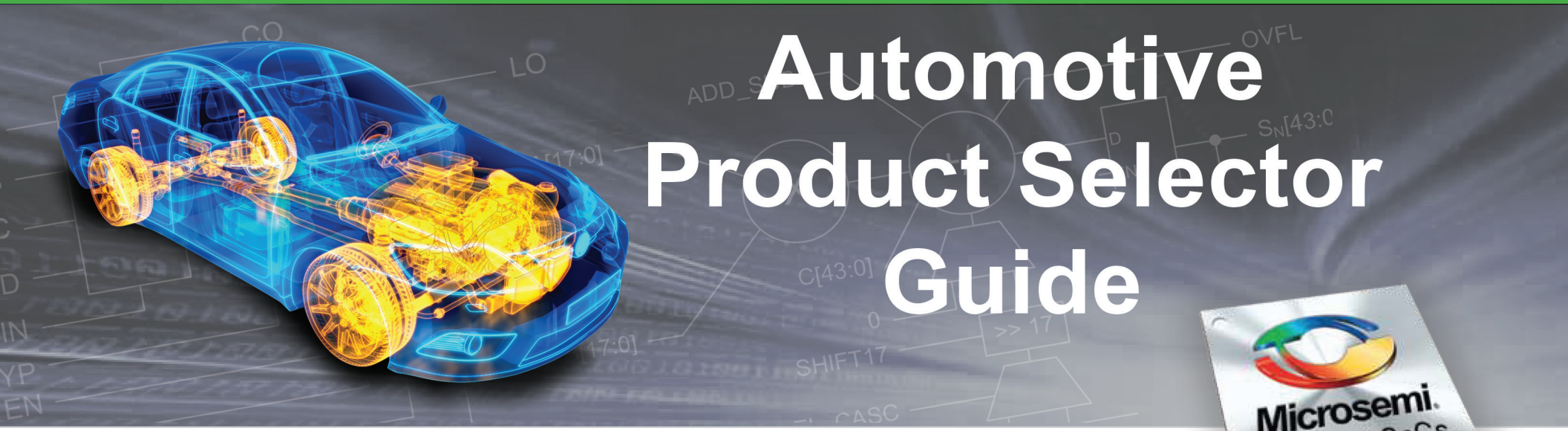
Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling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

Applications of Embedded - FPGAs

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

Details	
Product Status	Active
Number of LABs/CLBs	-
Number of Logic Elements/Cells	6060
Total RAM Bits	719872
Number of I/O	171
Number of Gates	-
Voltage - Supply	1.14V ~ 2.625V
Mounting Type	-
Operating Temperature	-40°C ~ 125°C (TJ)
Package / Case	-
Supplier Device Package	-
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/m2gl005s-1vfg400t2

Power Matters.



Automotive Product Selector Guide

Microsemi
FPGAs & SoCs

Microsemi

Automotive Product Selector Guide

Microsemi® offers a broad range of automotive-grade FPGAs and ARM®-enabled SoC FPGAs for designers to choose from which best fits their requirements. This product selector guide covers primary parameters; be it logic elements density, package size, on-chip peripherals etc. that are used to select an FPGA or SoC FPGA for a given application. All the products recommended in this guide are AEC-Q100 qualified and offer extended temperature support. Microsemi's automotive-grade FPGAs and SoCs offers the advantages of best-in-class security, high-reliability and low-power flash FPGAs for automotive designers.

The following device families offer Microsemi automotive-grade FPGAs:

- ProASIC3®
- IGLOO®2
- SmartFusion®2

Family	Part Number	Package Size(mm)	Temperature Range(°C)	LEs	Mathblocks (18x18)	RAM Memory (Kbits)	Transceivers (Lanes)	Transceiver Speed	User I/Os	Status
ProASIC3	A3P060-1FG144T	13x13	-40 to 135	~700	–	18	–	–	96	Production
ProASIC3	A3P060-FG144T	13x13	-40 to 135	~700	–	18	–	–	96	Production
ProASIC3	A3P060-1FGG144T	13x13	-40 to 135	~700	-	18	-	-	96	Production
ProASIC3	A3P060-FGG144T	13x13	-40 to 135	~700	-	18	-	-	96	Production
ProASIC3	A3P060-1VQ100T	14x14	-40 to 135	~700	-	18	-	-	71	Production
ProASIC3	A3P060-VQ100T	14x14	-40 to 135	~700	-	18	-	-	71	Production
ProASIC3	A3P060-1VQG100T	14x14	-40 to 135	~700	-	18	-	-	71	Production
ProASIC3	A3P060-VQG100T	14x14	-40 to 135	~700	-	18	-	-	71	Production
ProASIC3	A3P125-1FG144T	13x13	-40 to 135	~1500	-	36	-	-	97	Production
ProASIC3	A3P125-FG144T	13x13	-40 to 135	~1500	-	36	-	-	97	Production
ProASIC3	A3P125-1FGG144T	13x13	-40 to 135	~1500	-	36	-	-	97	Production
ProASIC3	A3P125-FGG144T	13x13	-40 to 135	~1500	-	36	-	-	97	Production
ProASIC3	A3P125-1VQ100T	14x14	-40 to 135	~1500	-	36	-	-	71	Production
ProASIC3	A3P125-VQ100T	14x14	-40 to 135	~1500	-	36	-	-	71	Production
ProASIC3	A3P125-1VQG100T	14x14	-40 to 135	~1500	-	36	-	-	71	Production
ProASIC3	A3P125-VQG100T	14x14	-40 to 135	~1500	-	36	-	-	71	Production
ProASIC3	A3P250-FG144T	13x13	-40 to 135	~3,000	-	36	-	-	97	Production
ProASIC3	A3P250-1FGG144T	13x13	-40 to 135	~3,000	-	36	-	-	97	Production

Table continuation...

Family	Part Number	Package Size(mm)	Temperature Range(°C)	LEs	Mathblocks (18x18)	RAM Memory (Kbits)	Transceivers (Lanes)	Transceiver Speed	User I/Os	Status
ProASIC3	A3P250-FGG144T	13x13	-40 to 135	~3,000	-	36	-	-	97	Production
ProASIC3	A3P250-1FG144T	13x13	-40 to 135	~3,000	-	36	-	-	97	Production
ProASIC3	A3P250-VQ100T	14x14	-40 to 135	~3,000	-	36	-	-	68	Production
ProASIC3	A3P250-1VQ100T	14x14	-40 to 135	~3,000	-	36	-	-	68	Production
ProASIC3	A3P250-1VQG100T	14x14	-40 to 135	~3,000	-	36	-	-	68	Production
ProASIC3	A3P250-VQG100T	14x14	-40 to 135	~3,000	-	36	-	-	68	Production
ProASIC3	A3P250-1FG256T	17x17	-40 to 135	~3,000	-	36	-	-	157	Production
ProASIC3	A3P250-FG256T	17x17	-40 to 135	~3,000	-	36	-	-	157	Production
ProASIC3	A3P250-1FGG256T	17x17	-40 to 135	~3,000	-	36	-	-	157	Production
ProASIC3	A3P250-FGG256T	17x17	-40 to 135	~3,000	-	36	-	-	157	Production
ProASIC3	A3P1000-1FG144T	13x13	-40 to 135	~11,000	-	144	-	-	97	Production
ProASIC3	A3P1000-1FGG144T	13x13	-40 to 135	~11,000	-	144	-	-	97	Production
ProASIC3	A3P1000-FGG144T	13x13	-40 to 135	~11,000	-	144	-	-	97	Production
ProASIC3	A3P1000-FG144T	13x13	-40 to 135	~11,000	-	144	-	-	97	Production
ProASIC3	A3P1000-1FG256T	17x17	-40 to 135	~11,000	-	144	-	-	177	Production
ProASIC3	A3P1000-FG256T	17x17	-40 to 135	~11,000	-	144	-	-	177	Production
ProASIC3	A3P1000-1FGG256T	17x17	-40 to 135	~11,000	-	144	-	-	177	Production
ProASIC3	A3P1000-FGG256T	17x17	-40 to 135	~11,000	-	144	-	-	177	Production
ProASIC3	A3P1000-1FG484T	23x23	-40 to 135	~11,000	-	144	-	-	300	Production
ProASIC3	A3P1000-FG484T	23x23	-40 to 135	~11,000	-	144	-	-	300	Production
ProASIC3	A3P1000-1FGG484T	23x23	-40 to 135	~11,000	-	144	-	-	300	Production
ProASIC3	A3P1000-FGG484T	23x23	-40 to 135	~11,000	-	144	-	-	300	Production
SmartFusion2	M2S005S-1VFG256T2	14x14	-40 to 125	6,060	11	703	-	-	161	Production
SmartFusion2	M2S005S-1VFG400T2	17x17	-40 to 125	6,060	11	703	-	-	171	Production
SmartFusion2	M2S005S-1FGG484T2	23x23	-40 to 125	6,060	11	703	-	-	209	Production
SmartFusion2	M2S010TS-1VFG256T2	14x14	-40 to 125	12,084	22	912	2	3.125 Gbps	138	Production

Table continuation...

Family	Part Number	Package Size(mm)	Temperature Range(°C)	LEs	Mathblocks (18x18)	RAM Memory (Kbits)	Transceivers (Lanes)	Transceiver Speed	User I/Os	Status
SmartFusion2	M2S010TS-1VFG400T2	17x17	-40 to 125	12,084	22	912	4	3.125 Gbps	195	Production
SmartFusion2	M2S010TS-1FGG484T2	23x23	-40 to 125	12,084	22	912	4	3.125 Gbps	233	Production
SmartFusion2	M2S025TS-1VFG256T2	14x14	-40 to 125	27,696	34	1104	2	3.125 Gbps	138	Production
SmartFusion2	M2S025TS-1VFG400T2	17x17	-40 to 125	27,696	34	1104	4	3.125 Gbps	207	Production
SmartFusion2	M2S025TS-1FGG484T2	23x23	-40 to 125	27,696	34	1104	4	3.125 Gbps	267	Production
SmartFusion2	M2S060TS-1VFG400T2	17x17	-40 to 125	56,520	72	1826	4	3.125 Gbps	207	Preliminary
SmartFusion2	M2S060TS-1FGG484T2	23x23	-40 to 125	56,520	72	1826	4	3.125 Gbps	267	Preliminary
SmartFusion2	M2S060TS-1FGG676T2	27x27	-40 to 125	56,520	72	1826	4	3.125 Gbps	387	Preliminary
SmartFusion2	M2S090TS-1FGG484T2	23x23	-40 to 125	86,184	84	2586	4	3.125 Gbps	425	Production
SmartFusion2	M2S090TS-1FGG676T2	27x27	-40 to 125	86,184	84	2586	4	3.125 Gbps	425	Production
IGLOO2	M2GL005S-1VFG256T2	14x14	-40 to 125	6,060	11	703	-	-	161	Production
IGLOO2	M2GL005S-1VFG400T2	17x17	-40 to 125	6,060	11	703	-	-	171	Production
IGLOO2	M2GL005S-1FGG484T2	23x23	-40 to 125	6,060	11	703	-	-	209	Production
IGLOO2	M2GL010TS-1VFG256T2	14x14	-40 to 125	12,084	22	912	2	3.125 Gbps	138	Production
IGLOO2	M2GL010TS-1VFG400T2	17x17	-40 to 125	12,084	22	912	4	3.125 Gbps	195	Production
IGLOO2	M2GL010TS-1FGG484T2	23x23	-40 to 125	12,084	22	912	4	3.125 Gbps	233	Production
IGLOO2	M2GL025TS-1VFG256T2	14x14	-40 to 125	27,696	34	1104	2	3.125 Gbps	138	Production
IGLOO2	M2GL025TS-1VFG400T2	17x17	-40 to 125	27,696	34	1104	4	3.125 Gbps	207	Production
IGLOO2	M2GL025TS-1FGG484T2	23x23	-40 to 125	27,696	34	1104	4	3.125 Gbps	267	Production
IGLOO2	M2GL060TS-1VFG400T2	17x17	-40 to 125	56,520	72	1826	4	3.125 Gbps	207	Preliminary
IGLOO2	M2GL060TS-1FGG484T2	23x23	-40 to 125	56,520	72	1826	4	3.125 Gbps	267	Preliminary
IGLOO2	M2GL060TS-1FGG676T2	27x27	-40 to 125	56,520	72	1826	4	3.125 Gbps	387	Preliminary
IGLOO2	M2GL090TS-1FGG484T2	23x23	-40 to 125	86,184	84	2586	4	3.125 Gbps	267	Production
IGLOO2	M2GL090TS-1FGG676T2	27x27	-40 to 125	86,184	84	2586	4	3.125 Gbps	425	Production
IGLOO2	M2GL005-1FGG484T1	23x23	-40 to 135	6,060	11	703	-	-	209	Planned
IGLOO2	M2GL010-1FGG484T1	23x23	-40 to 135	12,084	22	912	-	-	233	Planned

Microsemi
Power Matters.

Table continuation...

Family	Part Number	Package Size(mm)	Temperature Range(°C)	LEs	Mathblocks (18x18)	RAM Memory (Kbits)	Transceivers (Lanes)	Transceiver Speed	User I/Os	Status
IGLOO2	M2GL025-1FGG484T1	23x23	-40 to 135	27,696	34	1104	-	-	267	Planned
IGLOO2	M2GL060-1FGG484T1	23x23	-40 to 135	56,520	72	1826	-	-	267	Planned
IGLOO2	M2GL090-1FGG484T1	23x23	-40 to 135	86,184	84	2586	-	-	267	Planned

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Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense & security, aerospace and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, Calif., and has approximately 3,600 employees globally. Learn more at www.microsemi.com.

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