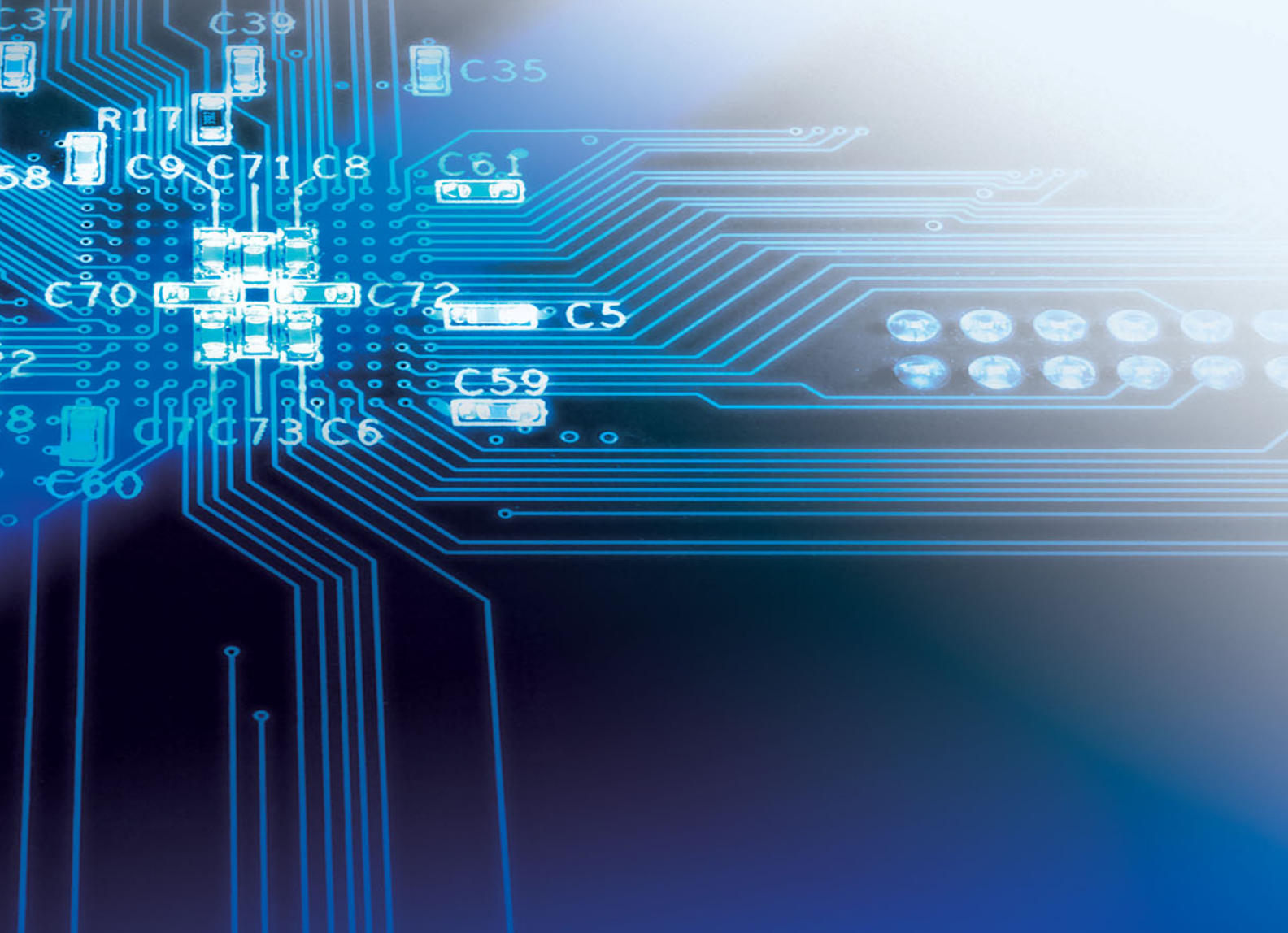


Antifuse Package Selector Guide

June 2009



FPGA Packages

Key: **f** – family **bs** – package body size excluding leads **ps** – overall package dimensions including package leads **h** – package thickness **p** – pin pitch / ball pitch

BG729
f Axcelerator®
ps 35 x 35 mm
h 2.33 mm
p 1.27 mm

BG329
f SX-A
 SX
ps 31 x 31 mm
h 2.33 mm
p 1.27 mm

BG313
f SX
ps 35 x 35 mm
h 2.33 mm
p 1.27 mm

BG272
f MX
ps 27 x 27 mm
h 2.33 mm
p 1.27 mm

FG1152
f Axcelerator
ps 35 x 35 mm
h 2.23 mm
p 1.00 mm

FG896
f Axcelerator
ps 31 x 31 mm
h 2.23 mm
p 1.00 mm

FG676
f Axcelerator
ps 27 x 27 mm
h 2.23 mm
p 1.00 mm

FG484
f Axcelerator
ps 23 x 23 mm
h 2.23 mm
p 1.00 mm

FG484
f SX-A
ps 27 x 27 mm
h 2.23 mm
p 1.00 mm

FG324
f Axcelerator
ps 19 x 19 mm
h 1.63 mm
p 1.00 mm

FG256
f Axcelerator
ps 17 x 17 mm
h 1.60 mm
p 1.00 mm

FG256
f SX-A
ps 17 x 17 mm
h 1.76 mm
p 1.00 mm

FG144
f SX-A
 SX
ps 13 x 13 mm
h 1.45 mm
p 1.00 mm

CS180
f Axcelerator
 eX
ps 13 x 13 mm
h 1.35 mm
p 0.80 mm

CS128
f eX
ps 11 x 11 mm
h 1.35 mm
p 0.80 mm

CS49
f eX
ps 7 x 7 mm
h 1.35 mm
p 0.80 mm

PQ240
f MX
bs 32 x 32 mm
ps 34.6 x 34.6 mm
h 3.40 mm
p 0.50 mm

PQ208
f SX-A
 SX
 MX
bs 28 x 28 mm
ps 30.6 x 30.6 mm
h 3.40 mm
p 0.50 mm

PQ160
f MX
bs 28 x 28 mm
ps 31.2 x 31.2 mm
h 3.37 mm
p 0.65 mm

PQ100
f MX
bs 14 x 20 mm
ps 17.2 x 23.2 mm
h 2.80 mm
p 0.65 mm

PL84
f SX
 MX
ps 1.154 x 1.154"
h 0.150"
p 0.050"

PL68
f MX
ps 0.954 x 0.954"
h 0.150"
p 0.050"

PL44
f MX
ps 0.654 x 0.654"
h 0.152"
p 0.050"

VQ100
f SX
 MX
bs 14 x 14 mm
ps 16 x 16 mm
h 1.00 mm
p 0.50 mm

VQ80
f MX
bs 14 x 14 mm
ps 16 x 16 mm
h 1.00 mm
p 0.65 mm

TQ176
f SX-A
 SX
 MX
bs 24 x 24 mm
ps 26 x 26 mm
h 1.40 mm
p 0.50 mm

TQ144
f SX-A
 SX
bs 20 x 20 mm
ps 22 x 22 mm
h 1.40 mm
p 0.50 mm

TQ100
f SX-A
 eX
bs 14 x 14 mm
ps 16 x 16 mm
h 1.40 mm
p 0.50 mm

TQ64
f eX
bs 10 x 10 mm
ps 12 x 12 mm
h 1.40 mm
p 0.50 mm

Antifuse FPGA Selector Guide

		System Gates	Typical Gates	Logic Modules	Dedicated Flip-Flops	Max. Flip-Flops	SRAM Bits	Flash Memory (Mbits)	FlashROM (Bits)	Max. I/O Available	Max. I/O Single-Ended	Max. I/O Double-Ended	Max. Analog Inputs	MOSFET Drivers	1.5 V CMOS Drive	1.8 V CMOS Drive	2.5 V CMOS Drive	3.3 V CMOS Drive	5 V CMOS Drive	5 V Tolerant Inputs	3.3 V PCI I/O	5 V PCI I/O	Slew Rate Control	Embedded Clocks	Routed Clocks	Hard-wired Clocks	PLL	JTAG	33 MHz PCI	66 MHz PCI	Temp. Range	Speed Grades
Accelerator	AX125	125 k	82 k	2,016	672	1,344	18 k	—	—	168	168	84	—	—	Yes	Yes	Yes	Yes	—	—	Yes	Yes ¹	Yes	—	4	4	8	Yes	Yes	Yes	C, I	Std, -1, -2
	AX250	250 k	154 k	4,224	1,408	2,816	55 k	—	—	248	248	124	—	—	Yes	Yes	Yes	Yes	—	—	Yes	Yes ¹	Yes	—	4	4	8	Yes	Yes	Yes	C, I, M	Std, -1, -2
	AX500	500 k	286 k	8,064	2,688	5,376	74 k	—	—	336	336	168	—	—	Yes	Yes	Yes	Yes	—	—	Yes	Yes ¹	Yes	—	4	4	8	Yes	Yes	Yes	C, I, M	Std, -1, -2
	AX1000	1 M	612 k	18,144	6,048	12,096	166 k	—	—	516	516	258	—	—	Yes	Yes	Yes	Yes	—	—	Yes	Yes ¹	Yes	—	4	4	8	Yes	Yes	Yes	C, I, M	Std, -1, -2
	AX2000	2 M	1.06 M	32,256	10,752	21,504	295 k	—	—	684	684	342	—	—	Yes	Yes	Yes	Yes	—	—	Yes	Yes ¹	Yes	—	4	4	8	Yes	Yes	Yes	C, I, M	Std, -1, -2
eX	eX64	3 k	2 k	192	64	128	—	—	—	84	—	—	—	—	—	—	Yes	Yes	Yes	Yes	—	—	Yes	—	2	1	—	Yes	—	—	C, I, A	-F, Std, -P
	eX128	6 k	4 k	384	128	256	—	—	—	100	—	—	—	—	—	—	Yes	Yes	Yes	Yes	—	—	Yes	—	2	1	—	Yes	—	—	C, I, A	-F, Std, -P
	eX256	12 k	8 k	768	256	512	—	—	—	132	—	—	—	—	—	—	Yes	Yes	Yes	Yes	—	—	Yes	—	2	1	—	Yes	—	—	C, I, A	-F, Std, -P
SX-A	A54SX08A	12 k	8 k	768	256	512	—	—	—	130	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	2	1	—	Yes	Yes	Yes	C, I, A	-F, Std, -1, -2
	A54SX16A	24 k	16 k	1,452	528	990	—	—	—	180	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	2	1	—	Yes	Yes	Yes	C, I, A, M	-F, Std, -1, -2
	A54SX32A	48 k	32 k	2,880	1,080	1,980	—	—	—	249	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	2	1	—	Yes	Yes	Yes	C, I, A, M	-F, Std, -1, -2
	A54SX72A	108 k	72 k	6,036	2,012	4,024	—	—	—	360	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	6	1	—	Yes	Yes	Yes	C, I, A, M	-F, Std, -1, -2
SX	A54SX08	12 k	8 k	768	256	512	—	—	—	130	—	—	—	—	—	—	Yes	—	Yes	—	—	—	—	—	2	1	—	Yes	—	—	C, I, M	Std, -1, -2, -3
	A54SX16	24 k	16 k	1,452	528	990	—	—	—	175	—	—	—	—	—	—	Yes	—	Yes	—	—	—	—	—	2	1	—	Yes	—	—	C, I, M	Std, -1, -2, -3
	A54SX16P	24 k	16 k	1,452	528	990	—	—	—	175	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	—	—	—	2	1	—	Yes	Yes	Yes	C, I, M	Std, -1, -2, -3
	A54SX32	48 k	32 k	2,880	1,080	1,980	—	—	—	249	—	—	—	—	—	—	Yes	—	Yes	—	—	—	—	—	2	1	—	Yes	—	—	C, I, M	Std, -1, -2, -3
MX	A40MX02	3 k	2 k	295	—	147	—	—	—	57	—	—	—	—	—	—	—	Yes	Yes	Yes	—	—	—	—	1	—	—	—	—	—	C, I, A, M	-F, Std, -1, -2, -3
	A40MX04	6 k	4 k	547	—	273	—	—	—	69	—	—	—	—	—	—	—	Yes	Yes	Yes	—	—	—	—	1	—	—	—	—	—	C, I, A, M	-F, Std, -1, -2, -3
	A42MX09	14 k	9 k	684	348	516	—	—	—	104	—	—	—	—	—	—	—	Yes	Yes	Yes	—	—	—	—	2	—	—	—	—	—	C, I, A, M	-F, Std, -1, -2, -3
	A42MX16	24 k	16 k	1,232	624	928	—	—	—	140	—	—	—	—	—	—	—	Yes	Yes	Yes	—	—	—	—	2	—	—	—	—	—	C, I, A, M	-F, Std, -1, -2, -3
	A42MX24	36 k	24 k	1,890	954	1,410	—	—	—	176	—	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	—	—	2	—	—	Yes	Yes	—	C, I, A, M	-F, Std, -1, -2, -3
	A42MX36	54 k	36 k	2,438	1,230	1,822	2,560	—	—	—	202	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	—	—	6	—	—	Yes	Yes	—	C, I, A, M	-F, Std, -1, -2, -3

¹ With the use of an external resistor C – Commercial I – Industrial A – Automotive M – Military T – Automotive Temperature Range: Grade 2 and Grade 1 AECO100 Grade 2 – 105°C T_A 115°C T_J Grade 1 – 125°C T_A 135°C T_J

² Not all speed grades are available for all temperature ranges. Please refer to the Actel website and appropriate product datasheets for the latest device information and valid ordering codes.

Antifuse I/Os by Package

		PLCC			PQFP				VQFP		TQFP				QFN			BGA					FBGA							CSP							μCSP				
		44	68	84	100	160	208	240	80	100	64	100	144	176	108	132	180	272	313	329	456	729	144	256	324	484	676	896	1152	49	81	121	128	180	196	281	81				
Accelerator*	AX125																							138	168										98						
	AX250						115																		138		248														
	AX500						115																				317	336													
	AX1000																				516						317	418	516												
	AX2000																													586	684										
eX*	eX64									41	56																				36				84						
	eX128									46	70																				36				100						
	eX256										81																								100	132					
SX-A*	A54SX08A						130				81	113												111																	
	A54SX16A						175				81	113												111	180																
	A54SX32A						174				81	113	147							249				111	203		249														
	A54SX72A						171																		203		360														
SX*	A54SX08			69			130		81			113	128											111																	
	A54SX16						175		81				147																												
	A54SX16P						175		81				113	147																											
	A54SX32						174						113	147						249	249																				
MX*	A40MX02	34	57		57				57																																
	A40MX04	34	57	69	69				69																																
	A42MX09			72	83	101				83				104																											
	A42MX16			72	83	125	140			83				140																											
	A42MX24			72		125	176							150																											
	A42MX36						176	202											202																						



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For more information regarding Actel Products, please visit www.actel.com or contact your local Actel sales representative.