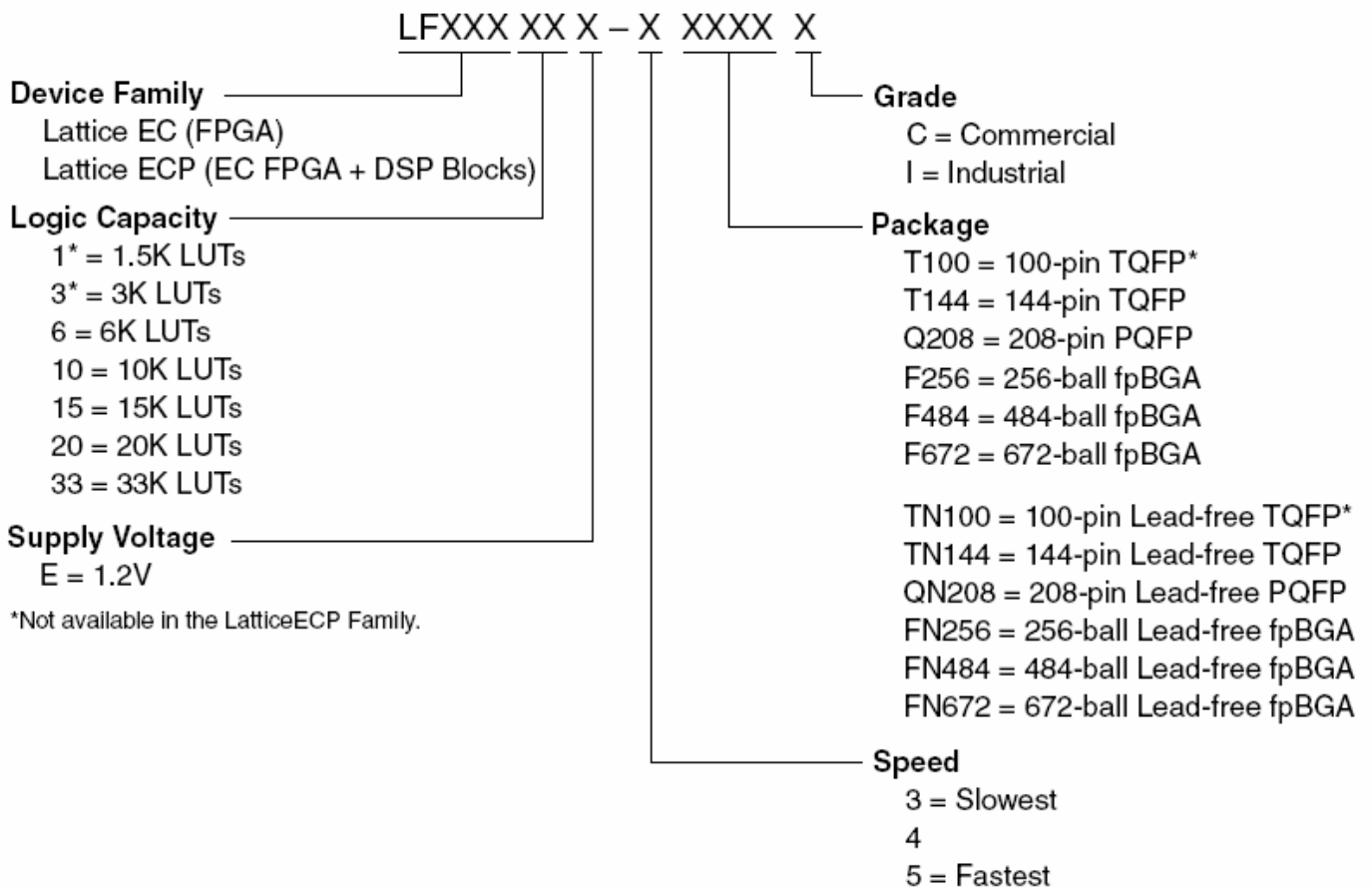


## Плис фирмы LATTICE типа FPGA

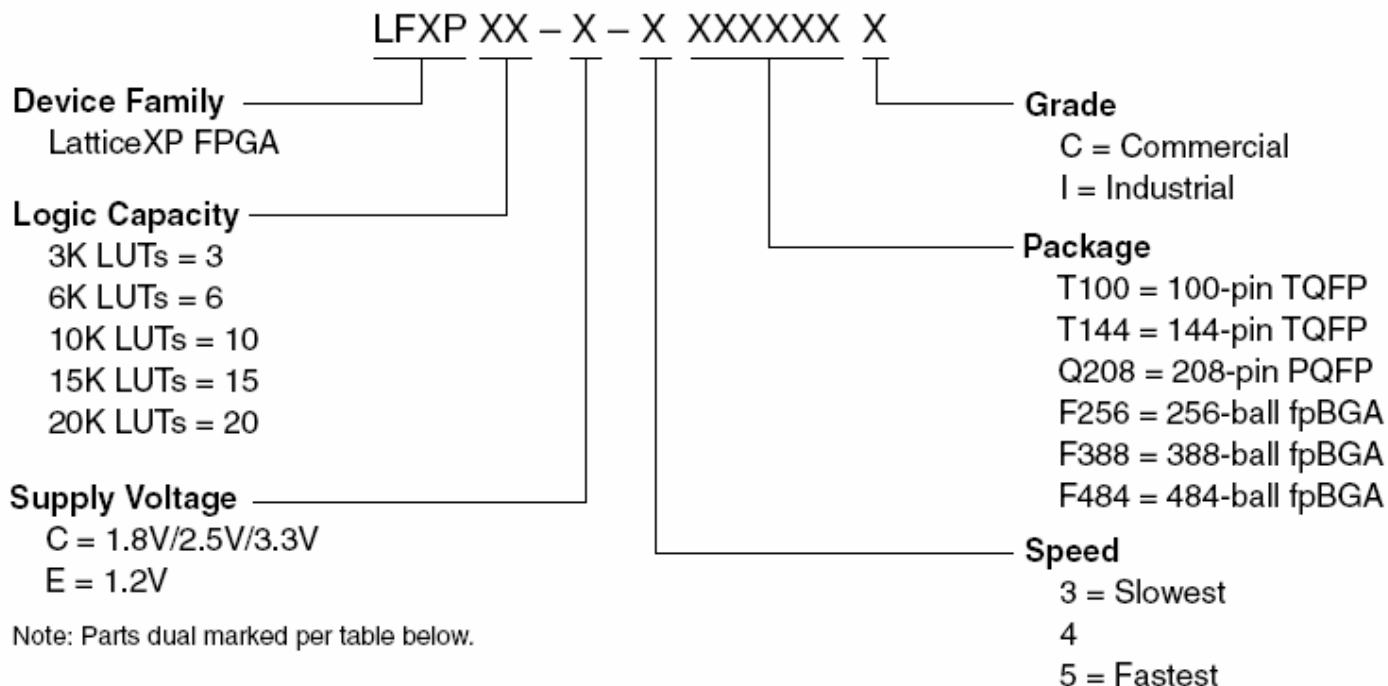
Семейство FPGA	Типы корпусов	Пример	
		Обозначение	Исполнение*
ECP/EC	TQFP	LFEC1	C, I
	PQFP	LFEC1	C, I
	fpBGA	LFEC6 LFECP6	C, I C, I
XP	TQFP	LFXP3	C, I
	PQFP	LFXP3	C, I
	fpBGA	LFXP6	C, I
ispXPGA	fpSBGA	ispXPGA 1200/E	C, I
	fpBGA	ispXPGA 1200/E	C, I

### ECP/EC

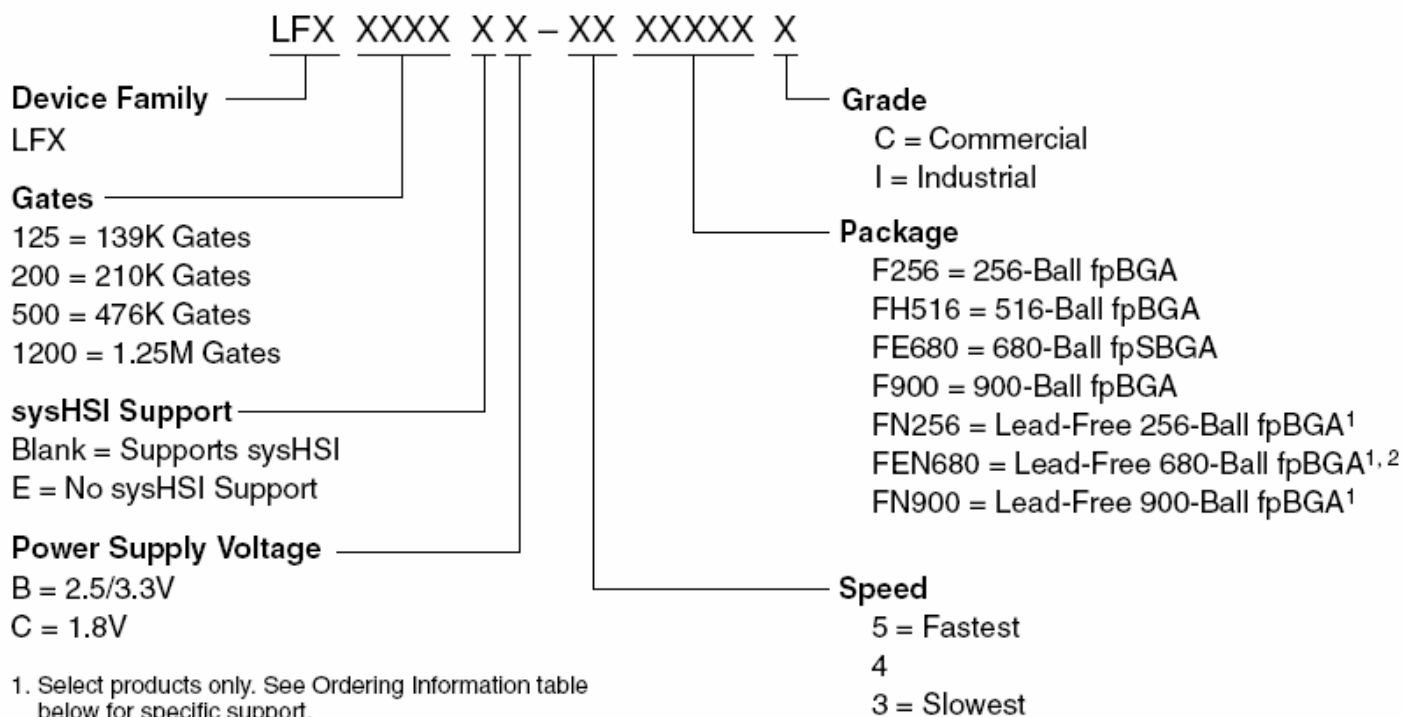


Symbol	Description	Ambient Temperature
C	Commercial	0 °C to +70 °C
I	Industrial	-40 °C to +85 °C

### XP



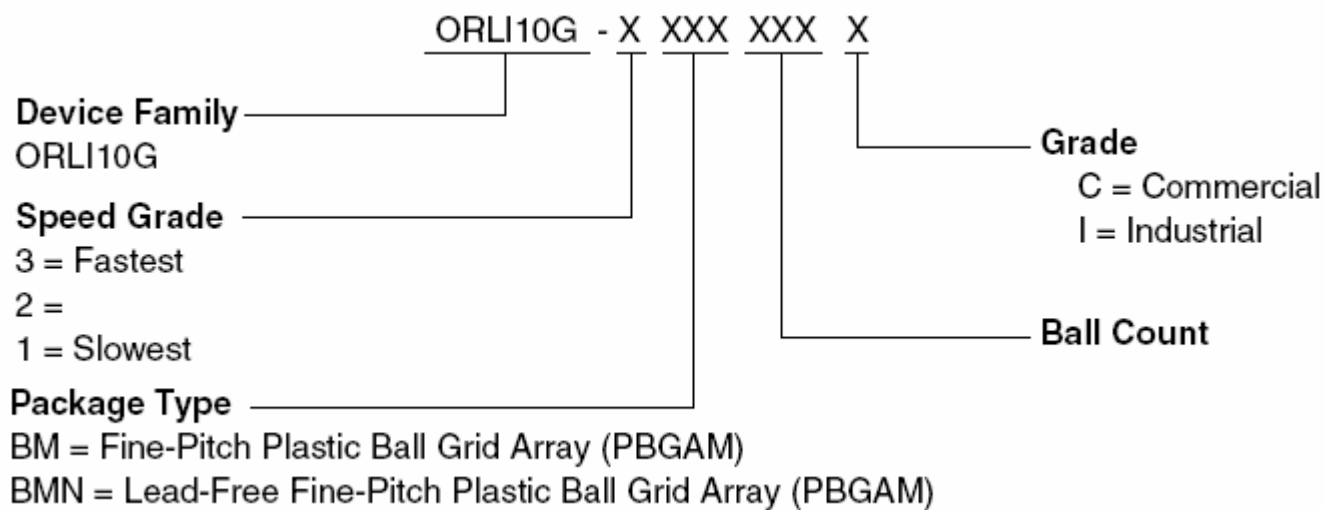
## ispXPGA



### Цпис фирмы LATTICE типа FPSC

Семейство FPGA	Типы корпусов	Пример	
		Обозначение	Исполнение*
ORCA (ORLI10G ORSO42G5 ORSO82G5 ORSPI4 ORT42G5 ORT82G5)	PBGAM (fpBGA)	ORLI10G-3BM680C ORLI10G-2BM680I	C, I

ORT8850 )			
-----------	--	--	--

**ORLI10G****Плис фирмы LATTICE типа CPLD**

Семейство FPGA	Типы корпусов	Пример	
		Обозначение	Исполнение*
ispXPLD (5000MC, 5000MB, 5000MV)	PQFP	ispXPLD 5512MX	C, I
	fpBGA	ispXPLD 5512MX	C, I
ispMACH 4000 (4000Z, 4000C, 4000B, 4000V)	TQFP	ispMACH4256V/B/C	C, I
	fpBGA	ispMACH4256V/B/C	C, I
	csBGA	ispMACH 4032Z	C, I
ispMACH™4A3 ispMACH4A	PLCC	M4A3-32	C, I
	TQFP	M4A3-32	C, I
	caBGA	M4A3-128	C, I
	fpBGA	M4A3-192	C, I
	PQFP	M4A3-256	C, I

**ispXPLD 5000MX**

LC XXXXX X X – XX XX XXX X

**Device Family**

LC

**Device Number**

- 5256 = 256 Macrocells
- 5512 = 512 Macrocells
- 5768 = 768 Macrocells
- 51024 = 1,024 Macrocells

**Memory**

M

**Supply Voltage**

- V = 3.3V
- B = 2.5V
- C = 1.8V

**Speed**

- 4 = 4.0ns
- 45 = 4.5ns
- 5 = 5.0ns
- 52 = 5.2ns
- 75 = 7.5ns

**Grade**

- C = Commercial
- I = Industrial

**Pin/Ball Count**

- 208
- 256
- 484
- 672

**Package**

- F = fpBGA
- FN = Lead-Free fpBGA
- Q = PQFP

**ispMACH™4A3**

M4A3- 256 / 128 -7 Y C

**FAMILY TYPE**

- M4A3- = ispMACH 4A Family Low Voltage Advanced Feature (3.3-V<sub>VCC</sub>)
- M4A5- = ispMACH 4A Family Advanced Feature (5-V<sub>VCC</sub>)

**MACROCELL DENSITY**

- |                      |                      |
|----------------------|----------------------|
| 32 = 32 Macrocells   | 192 = 192 Macrocells |
| 64 = 64 Macrocells   | 256 = 256 Macrocells |
| 96 = 96 Macrocells   | 384 = 384 Macrocells |
| 128 = 128 Macrocells | 512 = 512 Macrocells |

**I/Os**

- /32 = 32 I/Os in 44-pin PLCC, 44-pin TQFP or 48-pin TQFP
- /48 = 48 I/Os in 100-pin TQFP
- /64 = 64 I/Os in 100-pin TQFP, 100-pin PQFP, or 100-ball caBGA
- /96 = 96 I/Os in 144-pin TQFP or 144-ball fpBGA
- /128 = 128 I/Os in 208-pin PQFP, 256-ball BGA or 256-ball fpBGA
- /160 = 160 I/Os in 208-pin PQFP
- /192 = 192 I/Os in 256-ball BGA or 256-ball fpBGA
- /256 = 256 I/Os in 388-ball fpBGA

- 48 = 48-pin TQFP for M4A3-32/32 or M4A3-64/32 M4A5-32/32 or M4A5-64/32

**OPERATING CONDITIONS**

- C = Commercial (0°C to +70°C)
- I = Industrial (-40°C to +85°C)

**PACKAGE TYPE**

- SA = Ball Grid Array (BGA)
- J = Plastic Leaded Chip Carrier (PLCC)
- V = Thin Quad Flat Pack (TQFP)
- VN = Lead-free Thin Quad Flat Pack (TQFP)
- Y = Plastic Quad Flat Pack (PQFP)
- FA = Fine-pitch Ball Grid Array (fpBGA)
- FAN = Lead-free Fine-pitch Ball Grid Array (fpBGA)
- CA = Chip-array Ball Grid Array (caBGA)

**SPEED**

- 5 = 5.0 ns t<sub>PD</sub>
- 55 = 5.5 ns t<sub>PD</sub>
- 6 = 6.0 ns t<sub>PD</sub>
- 65 = 6.5 ns t<sub>PD</sub>
- 7 = 7.5 ns t<sub>PD</sub>
- 10 = 10 ns t<sub>PD</sub>
- 12 = 12 ns t<sub>PD</sub>
- 14 = 14 ns t<sub>PD</sub>

\*Package obsolete, contact factory.