

LSI LOGIC SECOND SOURCING

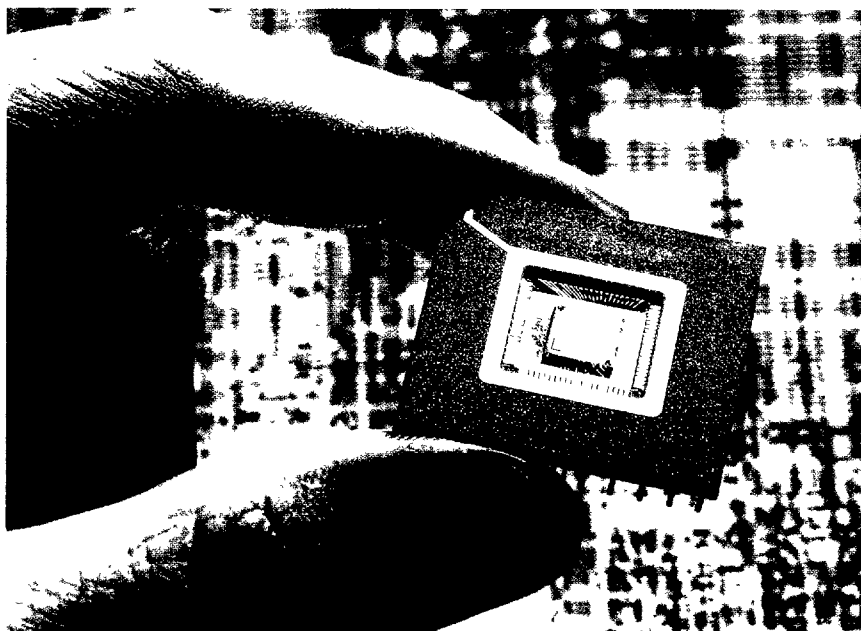
HUGHESSEMICONDUCTOR PRODUCTS CENTER
Industrial Electronics Group

Hughes Semiconductor Products Center (SPC) provides a true second source for LSI Logic ASIC's. The SPC product license allows production of specific LSI Logic ASIC product which has completed prototyping and release to production. This means the customer will receive parts manufactured by SPC directly from the same CALMA databases used by LSI Logic. No translation of the physical design is necessary. Form, fit, and function is at the die level. Test programs will be installed on SPC equipment.

LSI Logic licensed products include the following ASIC Product Families: LL5000 Series HCMOS Arrays, LL7000 Series HCMOS Arrays, LL9000 Series HCMOS Arrays, LMA9000 Series HCMOS Micro Arrays, and the LCA10000 Series HCMOS Compacted Arrays.

Information requested for quoting purposes:

- Generic LSI array number or product type
- Die size
- Package type, number of pins
- Estimated number of test vectors
- Order quantity and delivery
- Period of performance
- Device and general QA specifications



Upon contract award the customer issues a purchase order for implementation and production of a specific circuit(s). A letter to LSI Logic authorizing SPC to purchase the Device Transfer Package for each LSI Logic circuit shall be included. Additionally, the customer will authorize release of any closed tooled package information, and ability for SPC to purchase packages and sockets for production. A detailed letter explaining additional procedures is available.

LL5000 Product Outline

Device Number	Gate Complexity	Max ³ I/O	V _{dd} Pads	V _{ss} Pads	Max Pads	Gate Speed (ns) ¹	
						Typ	Max ⁽²⁾
LL5050	504	44	2	6	52	2.5	4.5
LL5080	880	66	2	6	74	2.5	4.5
LL5140	1,417	84	2	6	92	2.5	4.5
LL5170	1,708	88	2	6	96	2.5	4.5
LL5220	2,224	106	2	6	114	2.5	4.5
LL5320	3,192	126	4	8	138	2.5	4.5
LL5420	4,202	144	4	8	156	2.5	4.5
LL5600	5,902	168	4	8	180	2.5	4.5

LL7000 Product Outline

Device Number	Gate Complexity	Max. Pads ⁽³⁾		Max. I/O Pads ⁽³⁾		Max. Pkg. Pins ⁽⁴⁾		Gate Speed (ns) ⁽¹⁾	
		Plastic or Ceramic	Ceramic	Plastic or Ceramic	Ceramic	Plastic or Ceramic	Ceramic	Typ	Max ⁽²⁾
LL7080	880	52	68	44	60	50	66	1.4	2.4
LL7140	1,443	66	86	58	78	64	84	1.4	2.4
LL7220	2,224	78	106	70	98	76	104	1.4	2.4
LL7320	3,192	96	128	80	112	92	124	1.4	2.4
LL7420	4,242	114	150	98	134	110	146	1.4	2.4
LL7600	6,072	138	186	122	170	134	182	1.4	2.4
LL7840	8,370	166	222	150	206	162	218	1.4	2.4
LL71000	10,013	174	232	158	216	170	224	1.4	2.4

LL9000 Product Outline

Device Number	Gate Complexity	Max. Pads ⁽³⁾		Max. I/O Pads ⁽³⁾		Max. Pkg. Pins ⁽⁴⁾		Gate Speed (ns) ⁽¹⁾	
		Plastic or Ceramic	Ceramic	Plastic or Ceramic	Ceramic	Plastic or Ceramic	Ceramic	Typ	Max ⁽²⁾
LL9080	880	52	68	44	60	50	66	1.0	1.74
LL9140	1,443	66	86	58	78	64	84	1.0	1.74
LL9220	2,224	78	106	70	98	76	104	1.0	1.74
LL9320	3,192	96	128	80	112	92	124	1.0	1.74
LL9420	4,242	114	150	98	134	110	146	1.0	1.74
LL9600	6,072	138	186	122	170	134	182	1.0	1.74
LL9840	8,370	166	222	150	206	162	218	1.0	1.74
LL91000	10,013	174	232	158	216	170	224	1.0	1.74

LMA 9000 Product Outline

Device Number	Gate Complexity	Estimated Usable Gates ⁽¹⁾	Total Pads	Minimum Power Pads ⁽²⁾		Maximum I/O Pads ⁽³⁾
				V _{dd}	V _{ss}	
LMA9020	1,968	700	44	1	2	41
LMA9033	3,286	1,200	58	1	2	55
LMA9050	4,992	1,750	70	1	2	67
LMA9072	7,238	2,500	86	2	4	80
LMA9095	9,504	3,300	98	2	4	92
LMA9141	14,124	5,000	118	2	6	110
LMA9190	19,000	6,700	138	2	6	130
LMA9239	23,908	8,400	154	4	6	144
LMA9284	28,388	10,000	168	4	6	158

LCA 10000 Product Outline

Device Number	Gate Complexity	Estimated Usable Gates ⁽¹⁾	Maximum Pads	Minimum Power Pads ⁽²⁾		Maximum I/O Pads ^(2,3)
				V _{dd}	V _{ss}	
LCA10026	25,740	10,000	168	4	6	158
LCA10038	37,932	15,000	204	8	12	184
LCA10051	50,904	20,000	234	8	12	214
LCA10075	74,970	30,000	282	8	12	256
LCA10100	100,182	40,000	326	8	12	256
LCA10129	129,042	50,000	368	8	12	256