

Package	Macro Cells	Gates	Pin-Pin Delay (ns)	I/O Pins	Voltage (V)	Speed (NS)	Digi-Key Part No.	Price Each	Altera Part No.
208-PQFP	256	5,000	7.5	164†	5.0	10	544-1219-ND	87.50	EPM7256SQC208-10
208-PQFP	256	5,000	7.5	164†	5.0	15	544-1220-ND	70.00	EPM7256SQC208-15
208-PQFP	256	5,000	7.5	164	5.0	15	544-2064-ND◆	70.00	EPM7256SQC208-15N
208-RQFP	256	5,000	7.5	164	5.0	7	544-2069-ND	180.00	EPM7256SRC208-7
208-RQFP	256	5,000	7.5	164	5.0	10	544-2067-ND	144.00	EPM7256SRC208-10
208-RQFP	256	5,000	7.5	164	5.0	15	544-2068-ND	86.00	EPM7256SRC208-15
208-RQFP	256	5,000	7.5	164	5.0	10	544-2070-ND†	187.00	EPM7256SRI208-10
<b>MAX 7000A</b>									
44-PLCC	32	600	6.0	36	5.0	7	544-1996-ND	2.60	EPM7032AELC44-7
44-PLCC	32	600	4.5	36	3.3	10	544-1177-5-ND*	2.10	EPM7032AELC44-10
44-PLCC	32	600	6.0	36	5.0	10	544-1995-ND◆	2.10	EPM7032AELC44-10N
44-TQFP	32	600	4.5	36	3.3	4	544-1179-ND	4.50	EPM7032AETC44-4
44-TQFP	32	600	6.0	36	5.0	4	544-1998-ND◆	4.50	EPM7032AETC44-4N
44-TQFP	32	600	4.5	36	3.3	7	544-1180-ND	3.00	EPM7032AETC44-7
44-TQFP	32	600	6.0	36	5.0	7	544-1999-ND◆	3.00	EPM7032AETC44-7N
44-TQFP	32	600	4.5	36	3.3	10	544-1178-ND	2.40	EPM7032AETC44-10
44-TQFP	32	600	6.0	36	5.0	10	544-1997-ND◆	2.40	EPM7032AETC44-10N
44-TQFP	32	600	4.5	36	3.3	7	544-1181-ND†	3.95	EPM7032AET144-7
44-TQFP	32	600	6.0	36	5.0	7	544-2000-ND†	3.95	EPM7032AET144-7N
44-PLCC	64	1,250	6.0	68	5.0	10	544-2295-5-ND*	7.20	EPM7064AELC44-10
44-TQFP	64	1,250	4.5	36	3.3	4	544-1192-ND	50.00	EPM7064AETC44-4
44-TQFP	64	1,250	4.5	36	3.3	7	544-1193-ND	25.00	EPM7064AETC44-7
44-TQFP	64	1,250	6.0	68	5.0	7	544-2009-ND◆	25.00	EPM7064AETC44-7N
44-TQFP	64	1,250	4.5	36	3.3	10	544-1191-ND	7.60	EPM7064AETC44-10
44-TQFP	64	1,250	6.0	68	5.0	10	544-2008-ND◆	7.60	EPM7064AETC44-10N
44-TQFP	64	1,250	4.5	36	3.3	7	544-1194-ND†	32.50	EPM7064AET144-7
44-TQFP	64	1,250	6.0	68	5.0	7	544-2011-ND†	32.50	EPM7064AET144-7N
100-TQFP	64	1,250	4.5	36	3.3	4	544-1189-ND	80.50	EPM7064AETC100-4
100-TQFP	64	1,250	4.5	68	3.3	7	544-1190-ND	40.25	EPM7064AETC100-7
100-TQFP	64	1,250	4.5	68	3.3	10	544-1188-ND	11.30	EPM7064AETC100-10
100-TQFP	64	1,250	6.0	68	5.0	10	544-2007-ND◆	11.30	EPM7064AETC100-10N
100-TQFP	64	1,250	6.0	68	3.3	7	544-2010-ND†	52.40	EPM7064AET1100-7
84-PLCC	128	2,500	5.0	68	3.3	10	544-1201-5-ND*	16.00	EPM7128AELC84-10
100-FBGA	128	2,500	7.5	100	5.0	5	544-2026-ND	97.50	EPM7128AELC100-5
100-FBGA	128	2,500	7.5	100	5.0	10	544-2025-ND	31.00	EPM7128AELC100-10
100-TQFP	128	2,500	5.0	84	3.3	5	544-1203-ND	81.50	EPM7128AETC100-5
100-TQFP	128	2,500	7.5	100	5.0	5	544-2028-ND◆	81.50	EPM7128AETC100-5N
100-TQFP	128	2,500	5.0	84	3.3	7	544-1204-ND	43.50	EPM7128AETC100-7
100-TQFP	128	2,500	7.5	100	5.0	7	544-2029-ND◆	43.50	EPM7128AETC100-7N
100-TQFP	128	2,500	5.0	84	3.3	10	544-1202-ND	16.75	EPM7128AETC100-10
100-TQFP	128	2,500	7.5	100	5.0	10	544-2027-ND◆	16.75	EPM7128AETC100-10N
100-TQFP	128	2,500	5.0	84	3.3	7	544-1206-ND†	79.50	EPM7128AET1100-7
100-TQFP	128	2,500	7.5	100	5.0	7	544-2031-ND†	79.50	EPM7128AET1100-7N
144-TQFP	128	2,500	7.5	100	5.0	7	544-2316-ND	52.50	EPM7128AETC144-7

Package	Macro Cells	Gates	Pin-Pin Delay (ns)	I/O Pins	Voltage (V)	Speed (NS)	Digi-Key Part No.	Price Each	Altera Part No.
144-TQFP	128	2,500	5.0	100	3.3	10	544-1205-ND	29.50	EPM7128AETC144-10
144-TQFP	128	2,500	7.5	100	5.0	10	544-2030-ND◆	29.50	EPM7128AETC144-10N
100-TQFP	256	5,000	12.0	164	5.0	5	544-2058-ND	141.00	EPM7256AETC100-5
100-TQFP	256	5,000	12.0	164	5.0	7	544-2351-ND	80.00	EPM7256AETC100-7
100-TQFP	256	5,000	12.0	164	5.0	7	544-2352-ND◆	80.00	EPM7256AETC100-7N
100-TQFP	256	5,000	5.5	84	3.3	10	544-1217-ND	48.50	EPM7256AETC100-10
100-TQFP	256	5,000	12.0	164	5.0	10	544-2057-ND◆	48.50	EPM7256AETC100-10N
100-TQFP	256	5,000	12.0	164	5.0	7	544-2061-ND†	136.50	EPM7256AET1100-7
144-TQFP	256	5,000	12.0	164	5.0	5	544-2000-ND	156.00	EPM7256AETC144-5
144-TQFP	256	5,000	12.0	164	5.0	7	544-2353-ND	87.00	EPM7256AETC144-7
144-TQFP	256	5,000	12.0	164	5.0	7	544-2354-ND◆	87.00	EPM7256AETC144-7N
144-TQFP	256	5,000	5.5	120	3.3	10	544-1218-ND	59.00	EPM7256AETC144-10
144-TQFP	256	5,000	12.0	164	5.0	10	544-2059-ND◆	59.00	EPM7256AETC144-10N
144-TQFP	256	5,000	12.0	164	5.0	7	544-2062-ND†	152.00	EPM7256AET1144-7
144-TQFP	256	5,000	12.0	164	5.0	7	544-2063-ND†	152.00	EPM7256AET1144-7N
208-PQFP	256	5,000	12.0	164	5.0	5	544-2056-ND	172.00	EPM7256AECQ208-5
208-PQFP	256	5,000	12.0	164	5.0	7	544-2350-ND	96.00	EPM7256AECQ208-7
208-PQFP	256	5,000	12.0	164	5.0	10	544-2349-ND	171.00	EPM7256AECQ208-10
256-FBGA	256	5,000	12.0	164	5.0	5	544-2346-ND	51.00	EPM7256AECF256-5
256-FBGA	256	5,000	12.0	164	5.0	7	544-2347-ND	45.00	EPM7256AECF256-7
256-FBGA	256	5,000	12.0	164	5.0	10	544-2345-ND	34.00	EPM7256AECF256-10
256-FBGA	256	5,000	12.0	164	5.0	7	544-2348-ND†	200.00	EPM7256AET1256-7
144-TQFP	512	10,000	7.5	120	5.0	10	544-2360-ND	270.00	EPM7512AETC144-7
144-TQFP	512	10,000	7.5	120	3.3	10	544-2073-ND	180.00	EPM7512AETC144-10
144-TQFP	512	10,000	7.5	120	3.3	12	544-2074-ND	120.00	EPM7512AETC144-12
208-PQFP	512	10,000	7.5	164	5.0	7	544-2359-ND	302.00	EPM7512AECQ208-7
208-PQFP	512	10,000	7.5	164	5.0	10	544-2358-ND	201.00	EPM7512AECQ208-10
208-PQFP	512	10,000	7.5	164	3.3	10	544-2072-ND†	261.00	EPM7512AECQ208-10
256-FBGA	512	10,000	7.5	212	5.0	7	544-2357-ND	376.00	EPM7512AECF256-7
256-FBGA	512	10,000	7.5	212	3.3	10	544-2071-ND†	327.00	EPM7512AECF256-10
<b>MAX 7000B</b>									
256-FBGA	512	10,000	5.5	212	2.5	5	544-2361-ND	300.00	EPM7512BFC256-5
<b>MAX 9000</b>									
84-PLCC	320	6,000	10.0	60	5.0	15	544-2362-5-ND*	123.00	EPM9320LC84-15
208-RQFP	560	12,000	10.0	153	5.0	10	544-2363-ND	234.00	EPM9560ARC208-10
208-RQFP	560	12,000	10.0	153	5.0	10	544-2364-ND†	305.00	EPM9560ARI208-10
240-RQFP	560	12,000	10.0	191	5.0	10	544-2365-ND†	336.00	EPM9560ARI240-10
240-RQFP	560	12,000	10.0	191	5.0	15	544-2366-ND	364.00	EPM9560RC240-15
240-RQFP	560	12,000	10.0	191	5.0	20	544-2367-ND†	337.00	EPM9560RI240-20

◆ RoHS Compliant † Industrial Temperature: -40°C - 100°C \* Tube ‡ Perform a complete thermal analysis before committing a design to this device package. For more information, see the Operating Requirements for Altera Devices Data Sheet, available at [www.digikey.com](http://www.digikey.com).

## Configuration Devices

During device operation, Altera® FPGA's store configuration data in SRAM cells. Because SRAM memory is volatile, the SRAM cells must be loaded with configuration data each time the device powers up. You can configure the devices using data stored in an Altera configuration device. Altera configuration devices are offered in different densities and provide a variety of features.

Memory Size (BIT)	On-Chip Decompression Support	ISP Support	Reprogrammable	Voltage (V)	Package	Digi-Key Part No.	Price Each	Altera Part No.
65K	No	No	No	5.0/3.3	8-PDIP	544-1221-5-ND*	5.50	EPC1064PC8
	No	No	No	5.0	8-PDIP	544-1369-5-ND*	7.70	EPC1064PI8
	No	No	No	5.0	20-PLCC	544-1367-5-ND*	9.10	EPC1064LI20
212K	No	No	No	5.0	8-PDIP	544-1370-5-ND*	13.25	EPC1213PI8
	No	No	No	5.0/3.3	8-PDIP	544-1222-5-ND*	9.50	EPC1213PC8
	No	No	No	5.0/3.3	20-PLCC	544-2188-5-ND*	10.75	EPC1213LC20
400K	No	No	No	5.0	20-PLCC	544-1369-5-ND*	15.00	EPC1213LI20
	No	No	No	5.0/3.3	8-PDIP	544-1224-5-ND*	3.50	EPC1441PC8
	No	No	No	5.0/3.3	8-PDIP	544-1225-5-ND*	4.90	EPC1441PI8
440K	No	No	No	5.0/3.3	20-PLCC	544-1223-5-ND*	3.50	EPC1441LC20
	No	No	No	5.0/3.3	20-PLCC	544-1371-5-ND◆*	3.50	EPC1441LC20N
	No	No	No	5.0/3.3	32-TQFP	544-1372-ND	3.95	EPC1441TC32
1M	No	No	No	5.0/3.3	32-TQFP	544-1649-ND◆	3.95	EPC1441TC32N
	No	No	No	5.0/3.3	8-PDIP	544-1232-5-ND*	15.50	EPC1P18N
	No	No	No	5.0/3.3	8-PDIP	544-1375-5-ND◆*	15.50	EPC1P18N
1.6M	No	No	Yes	3.3	8-PDIP	544-1231-5-ND*	11.00	EPC1PC8
	No	No	Yes	3.3	8-SOIC	544-1241-5-ND◆*	3.50	EPCS1S18
	No	No	Yes	3.3	8-SOIC	544-1242-5-ND◆*	3.50	EPCS1S18N
4M	No	Yes	No	5.0/3.3	20-PLCC	544-1229-5-ND*	12.50	EPC1LC20
	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1934-5-ND◆*	12.50	EPC1LC20N
	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1230-5-ND*	17.50	EPC1LI20
8M	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1651-ND◆	17.50	EPC1LI20N
	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1233-5-ND*	33.50	EPC2LC20
	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1234-5-ND*	45.00	EPC2LI20
16M	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1650-ND◆	45.00	EPC2LI20N
	Yes	Yes	Yes	5.0/3.3	20-PLCC	544-1376-5-ND◆*	33.50	EPC2LC20N
	Yes	Yes	Yes	5.0/3.3	32-TQFP	544-1235-ND	37.50	EPC2TC32
64M	Yes	Yes	Yes	5.0/3.3	32-TQFP	544-1236-ND	52.50	EPC2TI32
	Yes	Yes	Yes	5.0/3.3	32-TQFP	544-1648-ND◆	52.50	EPC2TI32N
	Yes	Yes	Yes	5.0/3.3	32-TQFP	544-1377-ND◆	37.50	EPC2TC32N
100M	Yes	Yes	Yes	3.3	100-PQFP	544-1237-ND	41.00	EPC4QC100
	Yes	Yes	Yes	3.3	100-PQFP	544-1378-ND◆	41.00	EPC4QC100N
	Yes	Yes	Yes	3.3	100-PQFP	544-2189-ND	55.50	EPC4QI100
200M	Yes	Yes	Yes	3.3	100-PQFP	544-2190-ND	65.50	EPC4QI100N
	Yes	Yes						