

Trion® FPGA Selector Guide



4K to 120K
Logic Elements



5Kb Embedded
RAM Blocks



18 x 18
Multipliers



PLLs



GPIO



LVDS



MIPI CSI-2
& D-PHY



DDR DRAM
Controller & PHY



SPI & JTAG
Configuration

Trion Ordering Codes

FPGA	LEs	RAM (kbits)	RAM Blocks (5 Kb)	Multipliers	Package	Pins	GPIO	PLLs	Oscillator	LVDS TX Pairs	LVDS RX Pairs	MIPI TX	MIPI RX	DDR	Temperature	Speed Grade	Ordering Code
T4	3,888	76.8	15	4	FBGA	49	33	1	1	-	-	-	-	-	C	2	T4F49C2
						81	55	1	1	-	-	-	-	-	I	2	T4F49I2
					FBGA	49	33	1	1	-	-	-	-	-	C	2	T4F81C2
						81	55	1	1	-	-	-	-	-	I	2	T4F81I2
T8	7,384	122.88	24	8	FBGA	49	33	1	1	-	-	-	-	-	C	2	T8F49C2
						81	55	1	1	-	-	-	-	-	I	2	T8F49I2
					LQFP	49	33	1	1	-	-	-	-	-	C	2	T8F81C2
						81	55	1	1	-	-	-	-	-	I	2	T8F81I2
						144	97	5	-	6	6	-	-	-	C	3, 4, 4L	T8Q144C3/4/4L
						144	97	5	-	6	6	-	-	-	I	4, 4L	T8Q144I4/4L
T13	12,828	727.04	142	24	FBGA	169	73	5	-	8	12	2	2	-	C	3, 4, 4L	T13F169C3/4/4L
						169	73	5	-	8	12	2	2	-	I	4, 4L	T13F169I4/4L
						169	73	5	-	8	12	2	2	-	Q	4	T13F169Q4
					FBGA	256	195	5	-	13	13	-	-	-	C	3, 4, 4L	T13F256C3/4/4L
						256	195	5	-	13	13	-	-	-	I	4, 4L	T13F256I4/4L
						256	195	5	-	13	13	-	-	-	Q	4	T13F256Q4
T20	19,728	1,044.48	204	36	WLCSP	80	33	3	-	-	-	1	1	-	I	4, 4L	T20W80I4/4L
					LQFP	144	97	5	-	6	6	-	-	-	C	3, 4, 4L	T20Q144C3/4/4L
						144	97	5	-	6	6	-	-	-	I	4, 4L	T20Q144I4/4L
					FBGA	169	73	5	-	8	12	2	2	-	C	3, 4, 4L	T20F169C3/4/4L
						169	73	5	-	8	12	2	2	-	I	4, 4L	T20F169I4/4L
						169	73	5	-	8	12	2	2	-	Q	4	T20F169Q4
					FBGA	256	195	5	-	13	13	-	-	-	C	3, 4, 4L	T20F256C3/4/4L
						256	195	5	-	13	13	-	-	-	I	4, 4L	T20F256I4/4L
						256	195	5	-	13	13	-	-	-	Q	4	T20F256Q4
					FBGA	324	130	7	-	20	26	2	2	x8, x16	C	3, 4, 4L	T20F324C3/4/4L
						324	130	7	-	20	26	2	2	x8, x16	I	4, 4L	T20F324I4/4L
						324	130	7	-	20	26	2	2	x8, x16	Q	4	T20F324Q4

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FPGA	LEs	RAM (kbits)	RAM Blocks (5 Kb)	Multipliers	Package	Pins	GPIO	PLLs	Oscillator	LVDS TX Pairs	LVDS RX Pairs	MIPI TX	MIPI RX	DDR	Temperature	Speed Grade	Ordering Code
T35	31,680	1,475	288	120	FBGA	324	130	7	–	20	26	2	2	x8, x16	C	3, 4, 4L	T35F324C3/4/4L
															I	4, 4L	T35F324I4/4L
					FBGA	400	230	7	–	20	26	–	–	x8, x16	C	3, 4, 4L	T35F400C3/4/4L
															I	4, 4L	T35F400I4/4L
T55	54,195	2,765	540	150	FBGA	324	130	7	–	20	26	2	2	x8, x16	C	3, 4, 4L	T55F324C3/4/4L
															I	4, 4L	T55F324I4/4L
					FBGA	484	256	8	–	40	40	–	–	x16/x32	C	3, 4, 4L	T55F484C3/4/4L
															I	4, 4L	T55F484I4/4L
					FBGA	576	278	8	–	52	52	3	3	x16/x32	C	3, 4, 4L	T55F576C3/4/4L
															I	4, 4L	T55F576I4/4L
T85	84,096	4,055	792	240	FBGA	324	130	7	–	20	26	2	2	x8, x16	C	3, 4, 4L	T85F324C3/4/4L
															I	4, 4L	T85F324I4/4L
					FBGA	484	256	8	–	40	40	–	–	x16/x32	C	3, 4, 4L	T85F484C3/4/4L
															I	4, 4L	T85F484I4/4L
					FBGA	576	278	8	–	52	52	3	3	x16/x32	C	3, 4, 4L	T85F576C3/4/4L
															I	4, 4L	T85F576I4/4L
T120	112,128	5,407	1,056	320	FBGA	324	130	7	–	20	26	2	2	x8, x16	C	3, 4, 4L	T120F324C3/4/4L
															I	4, 4L	T120F324I4/4L
					FBGA	484	256	8	–	40	40	–	–	x16/x32	C	3, 4, 4L	T120F484C3/4/4L
															I	4, 4L	T120F484I4/4L
					FBGA	576	278	8	–	52	52	3	3	x16/x32	C	3, 4, 4L	T120F576C3/4/4L
															I	4, 4L	T120F576I4/4L

Package Dimensions

Package	Pitch	Dimensions (mm)
49-ball FBGA	0.4	3x3
80-ball WLCSP	0.4	3.6x4.5
81-ball FBGA	0.5	5x5
144-pin LQFP	0.5	20x20

Package	Pitch	Dimensions (mm)
169-ball FBGA	0.65	9x9
324-ball FBGA	0.65	12x12
576-ball FBGA	0.65	16x16

Package	Pitch	Dimensions (mm)
256-ball FBGA	0.8	13x13
400-ball FBGA	0.8	16x16
484-ball FBGA	0.8	18x18

Trion FPGA — **T20 F256 C 3** — Speed Grade

2, 3, 4, 4L

Package Code

Operating Temperature

C: Commercial ($T_j = 0^\circ\text{C}$ to 85°C)

I: Industrial ($T_j = -40^\circ\text{C}$ to 100°C)

Q: Automotive ($T_j = -40^\circ\text{C}$ to 105°C)