

Trion® FPGA Selector Guide

Trion® FPGAs are simple, easy to use, low power, and designed to get the job done quickly. They have what you need, compared to the kitchen sink approach of a “full-featured” FPGA. So you can spend your time innovating your product, instead of figuring out how to use features you didn’t really want in the first place.



This selector guide summarizes Trion FPGAs by ordering code and resources to help you choose the right product for your application.

Trion Family Features

								
4K to 120K Logic Elements	5 Kb 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	SPI Flash (Mbit)	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
																I	2	T4F49I2
					FBGA	81	55	1	1	-	-	-	-	-	-	C	2	T4F81C2
																I	2	T4F81I2
T8	7,384	122.88	24	8	FBGA	49	33	1	1	-	-	-	-	-	-	C	2	T8F49C2
																I	2	T8F49I2
					FBGA	81	55	1	1	-	-	-	-	-	-	C	2	T8F81C2
																I	2	T8F81I2
					LQFP	144	97	5	-	-	6	6	-	-	-	C	3, 4	T8Q144C3/4
																I	4	T8Q144I4

FPGA	LEs	RAM (kbits)	RAM Blocks (5 Kb)	Multipliers	Package	Pins	GPIO	PLLs	Oscillator	SPI Flash (Mbit)	LVDS TX Pairs	LVDS RX Pairs	MIPI TX	MIPI RX	DDR	Temperature	Speed Grade	Ordering Code
T13	12,828	727.04	142	24	LQFP	100	65	5	–	16	4	4	–	–	–	C	3, 4	T13Q100F3C3/4
																I	4	T13Q100F3I4
					FBGA	169	73	5	–	–	8	12	2	2	–	C	3, 4	T13F169C3/4
																I	4	T13F169I4
																Q	4	T13F169Q4
					FBGA	256	195	5	–	–	13	13	–	–	–	C	3, 4	T13F256C3/4
																I	4	T13F256I4
																Q	4	T13F256Q4
T20	19,728	1,044.48	204	36	WLCSP	80	33	3	–	–	–	–	1	1	–	I	4	T20W80I4
					LQFP	100	65	5	–	16	4	4	–	–	–	C	3, 4	T20Q100F3C3/4
																I	4	T20Q100F3I4
					LQFP	144	97	5	–	–	6	6	–	–	–	C	3, 4	T20Q144C3/4
																I	4	T20Q144I4
					FBGA	169	73	5	–	–	8	12	2	2	–	C	3, 4	T20F169C3/4
																I	4	T20F169I4
																Q	4	T20F169Q4
					FBGA	256	195	5	–	–	13	13	–	–	–	C	3, 4	T20F256C3/4
																I	4	T20F256I4
																Q	4	T20F256Q4
					FBGA	324	130	7	–	–	20	26	2	2	x8, x16	C	3, 4	T20F324C3/4
																I	4	T20F324I4
					FBGA	400	230	7	–	–	20	26	–	–	x8, x16	C	3, 4	T20F400C3/4
																I	4	T20F400I4
T35	31,680	1,475	288	120	FBGA	256	191	7	–	–	10	18	–	–	–	C	3, 4	T35F256C3/4
																I	4	T35F256I4
					FBGA	324	130	7	–	–	20	26	2	2	x8, x16	C	3, 4	T35F324C3/4
																I	4	T35F324I4
					FBGA	400	230	7	–	–	20	26	–	–	x8, x16	C	3, 4	T35F400C3/4
																I	4	T35F400I4
T55	54,195	2,765	540	150	FBGA	324	130	7	–	–	20	26	2	2	x8, x16	C	3, 4	T55F324C3/4
																I	4	T55F324I4
					FBGA	484	256	8	–	–	40	40	–	–	x16, x32	C	3, 4	T55F484C3/4
																I	4	T55F484I4
					FBGA	576	278	8	–	–	52	52	3	3	x16, x32	C	3, 4	T55F576C3/4
																I	4	T55F576I4

FPGA	LEs	RAM (kbits)	RAM Blocks (5 Kb)	Multipliers	Package	Pins	GPIO	PLLs	Oscillator	SPI Flash (Mbit)	LVDS TX Pairs	LVDS RX Pairs	MIPI TX	MIPI RX	DDR	Temperature	Speed Grade	Ordering Code
T85	84,096	4,055	792	240	FBGA	324	130	7	–	–	20	26	2	2	x8, x16	C	3, 4	T85F324C3/4
															I	4	T85F324I4	
					FBGA	484	256	8	–	–	40	40	–	–	x16, x32	C	3, 4	T85F484C3/4
															I	4	T85F484I4	
					FBGA	576	278	8	–	–	52	52	3	3	x16, x32	C	3, 4	T85F576C3/4
															I	4	T85F576I4	
T120	112,128	5,407	1,056	320	FBGA	324	130	7	–	–	20	26	2	2	x8, x16	C	3, 4	T120F324C3/4
															I	4	T120F324I4	
					FBGA	484	256	8	–	–	40	40	–	–	x16, x32	C	3, 4	T120F484C3/4
															I	4	T120F484I4	
					FBGA	576	278	8	–	–	52	52	3	3	x16, x32	C	3, 4	T120F576C3/4
															I	4	T120F576I4	

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
100-pin LQFP	0.5	14x14

Package	Pitch	Dimensions (mm)
144-pin LQFP	0.5	20x20
169-ball FBGA	0.65	9x9
256-ball FBGA	0.8	13x13
324-ball FBGA	0.65	12x12

Package	Pitch	Dimensions (mm)
400-ball FBGA	0.8	16x16
484-ball FBGA	0.8	18x18
576-ball FBGA	0.65	16x16

Example Ordering Code

Trion FPGA

Package Code

System-In-Package

T20

F256

C

2

Speed Grade

2, 3, 4

Higher numbers are faster.

Operating Temperature

C: Commercial (T_j = 0° C - 85° C)

I: Industrial (T_j = -40° C - 100° C)

Q: Automotive (T_j = -40° C to 105° C)

F3: Flash (T13Q100/T20Q100)

Some ordering codes include extra characters to designate additional components in the package.

Product Longevity

At Efinix we are committed to supplying our customers with a stable supply of supported products throughout their product life cycle. We are committed to supporting our Trion family of FPGAs in customer designs until at least 2037. Contact your local sales representative for more information on product life cycles.