

T20W80I4 Datasheet



DiGi Electronics Part Number	T20W80I4-DG
Manufacturer	Efinix, Inc.
Manufacturer Product Number	T20W80I4
Description	IC FPGA 33 I/O 80WLCSP
Detailed Description	Trion® Field Programmable Gate Array (FPGA) IC 33 1069548 19728 80-BGA, WLCSP

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Purchase and inquiry

Manufacturer Product Number:

T20W80I4

Series:

Trion®

DiGi-Electronics Programmable:

Not Verified

Total RAM Bits:

1069548

Voltage - Supply:

1.15V ~ 1.25V

Operating Temperature:

-40°C ~ 100°C (TJ)

Supplier Device Package:

80-WLCSP (4.5x3.6)

Manufacturer:

Efinix, Inc.

Product Status:

Active

Number of Logic Elements/Cells:

19728

Number of I/O:

33

Mounting Type:

Surface Mount

Package / Case:

80-BGA, WLCSP

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):


3 (168 Hours)

HTSUS:


8542.39.0001



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		
					FBGA	49	33	1	1	-	-	-	-	-	-	-	-	C	2	T8F81C2
						81	55	1	1	-	-	-	-	-	-	-	-	I	2	T8F81I2
T13	12,828	727.04	142	24	FBGA	144	97	5	-	6	6	-	-	-	C	3, 4, 4L	T8Q144C3/4/4L			
						169	73	5	-	8	12	2	2	-	I	4, 4L	T8Q144I4/4L			
					FBGA	169	73	5	-	8	12	2	2	-	-	-	-	C	3, 4, 4L	T13F169C3/4/4L
						256	195	5	-	13	13	-	-	-	-	-	-	I	4, 4L	T13F169I4/4L
T20	19,728	1,044.48	204	36	WLCSP	80	33	3	-	-	-	1	1	-	I	4, 4L	T13F169Q4			
					FBGA	169	73	5	-	8	12	2	2	-	-	-	C	3, 4, 4L	T13F256C3/4/4L	
						169	73	5	-	8	12	2	2	-	-	-	I	4, 4L	T13F256I4/4L	
						256	195	5	-	13	13	-	-	-	-	-	Q	4	T13F256Q4	
					FBGA	256	195	5	-	13	13	-	-	-	-	-	-	C	3, 4, 4L	T20F169C3/4/4L
						324	130	7	-	20	26	2	2	x8, x16	-	-	-	I	4, 4L	T20F169I4/4L
FBGA	400	230	7	-	20	26	-	-	x8, x16	-	-	-	C	3, 4, 4L	T20F324C3/4/4L					
FBGA	400	230	7	-	20	26	-	-	x8, x16	-	-	-	I	4, 4L	T20F324I4/4L					
FBGA	400	230	7	-	20	26	-	-	x8, x16	-	-	-	C	3, 4, 4L	T20F400C3/4/4L					
FBGA	400	230	7	-	20	26	-	-	x8, x16	-	-	-	I	4, 4L	T20F400I4/4L					

Trion FPGA Selector Guide

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° C to 85° C)
 I: Industrial (T_j = -40° C to 100° C)
 Q: Automotive (T_j = -40° C to 105° C)



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