PK463 (v1.1) September 28, 2012

100% Material Declaration Data Sheet FFG1923

Average Weight: 28.1214g

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Silicon Die (FPGA)				Silicon IC	**0.785000**	**2.791**
	Doped silicon (Si)	7440-21-3	100.00	Basis	0.785000	
Solder Bump				Die to package	**0.064920**	**0.231**
	Tin (Sn)	7440-31-5	63.00	Basis	0.040900	
	Lead (Pb)	7439-92-1	37.00	Basis	0.024020	
Die Underfill					**0.100000**	**0.356**
	Bisphenol F-type liquid epoxy resin	9003-36-5	20.00	Basis	0.020000	
	Phenolic resin	Trade secret	15.00	Basis	0.015000	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.005000	
	Amine type accelerator	Trade secret	5.00	Basis	0.005000	
	Silicon dioxide	60676-86-0	51.50	Basis	0.051500	
	Carbon black	1333-86-4	1.00	Basis	0.001000	
	Additives	Trade secret	2.50	Basis	0.002500	
Solder Balls					1.609000	**5.722**
	Tin (Sn)	7440-31-5	96.50	Base metal	1.552685	
	Silver (Ag)	7440-22-4	3.00	Base metal	0.048270	
	Copper (Cu)	7440-50-8	0.50	Base metal	0.008045	
Substrate					**7.128284**	**25.348**
	Cu	7440-50-8	36.17	Main Material	2.578435	
	Tin	7440-31-5	0.59	Main Material	0.042230	
	Lead	7439-92-1	0.19	Main material	0.013254	
	Silver	7440-22-4	0.01	Main Material	0.000657	
	BT Core	N/A	34.66	Main Material	2.470500	
	ABF	N/A	27.27	Main Material	1.944000	
	Soldermask	N/A	1.11	Main Material	0.079208	

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Solder Paste					**0.028400**	**0.101**
	Tin (Sn)	7440-31-5	96.50	Basis	0.027406	
	Silver (Ag)	7440-22-4	3.00	Basis	0.000852	
	Copper (Cu)	7440-50-8	0.50	Basis	0.000142	
Capacitor					**0.056000**	**0.199**
	Ceramic (BaTiO3 type)	Trade secret	61.80	Ceramic	0.034608	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.015120	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.005544	
	Plating1 (Ni)	7440-02-0	0.40	Plating1	0.000224	
	Plating2 (Sn)	7440-31-5	0.90	Plating2	0.000504	
Capacitor					**0.023400**	**0.083**
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.015772	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.003978	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.003229	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000117	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.000304	
Capacitor					**0.031200**	**0.111**
	Ceramic (BaTiO3 type)	Trade secret	64.94	Ceramic	0.020261	
	Inner electrode (Ni)	7440-02-0	19.20	Inner electrode	0.005990	
	Outer electrode (Cu)	7440-50-8	14.07	Outer electrode	0.004390	
	Plating1 (Ni)	7440-02-0	0.51	Plating1	0.000159	
	Plating2 (Sn)	7440-31-5	1.28	Plating2	0.000399	
Capacitor					**0.007200**	**0.026**
	Ceramic (BaTiO3 type)	Trade secret	66.00	Ceramic	0.004752	
	Inner electrode (Ni)	7440-02-0	2.67	Inner electrode	0.000192	
	Outer electrode (Cu)	7440-50-8	23.33	Outer electrode	0.001680	
	Plating1 (Ni)	7440-02-0	2.33	Plating1	0.000168	
	Plating2 (Sn)	7440-31-5	5.67	Plating2	0.000408	
Heat Sink					**18.108000**	**64.392**
	Copper (Cu)	7440-50-8	99.15	Main material	17.954082	
	Nickel (Ni)	7440-02-0	0.85	Main material	0.153918	
Heat Sink Adhesive					**0.180000**	**0.640**
	Aluminum oxide	1344-28-1	70.00	Main material	0.126000	
	Zinc oxide	1314-13-2	15.00	Main material	0.027000	
	Organic Silicon compound	Trade secret	15.00	Main material	0.027000	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
03/04/11	1.0	Initial Xilinx release.
09/28/12	1.1	Updated Substrate Component

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