



PK488 (v1.1) September 28,
2012

100% Material Declaration Data Sheet FF1155

Average Weight: 13.9433 g

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	0.821184	5.889
	Doped silicon (Si)	7440-21-3	100.00	Basis	0.821184	
Solder Bump				Die to package	0.427509	3.066
	Tin (Sn)	7440-31-5	63.00	Basis	0.269331	
	Lead (Pb)	7439-92-1	37.00	Basis	0.158178	
Die Underfill					0.090000	0.645
	Bisphenol F/ epichlorohydrin copolymer	9003-36-5	20.00	Basis	0.018000	
	Phenolic resin	Trade secret	15.00	Basis	0.013500	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.004500	
	Amine type accelerator	Trade secret	5.00	Basis	0.004500	
	Silicon dioxide	60676-86-0	51.50	Basis	0.046350	
	Carbon black	1333-86-4	1.00	Basis	0.000900	
	Additives	Trade secret	2.50	Basis	0.002250	
Solder Balls					1.100277	7.891
	Tin (Sn)	7440-31-5	63.00	Main material	0.693175	
	Lead (Pb)	7440-92-1	37.00	Main material	0.407102	
Substrate					4.141205	29.700
	Cu	7440-50-8	37.07	Main Material	1.535253	
	Tin	7440-31-5	1.70	Main Material	0.070447	
	Lead	7439-92-1	0.30	Main Material	0.012286	
	Silver	7440-22-4	0.04	Main Material	0.001595	
	BT Core	N/A	40.82	Main Material	1.690500	
	ABF	N/A	18.93	Main Material	0.784000	
	Soldermask	N/A	1.14	Main Material	0.047124	

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Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Solder Paste					0.015000	0.108
	Tin (Sn)	7440-31-5	96.50	Basis	0.014475	
	Silver (Ag)	7440-22-4	3.00	Basis	0.000450	
	Copper (Cu)	7440-50-8	0.50	Basis	0.000075	
Capacitor					0.042000	0.301
	Ceramic (BaTiO3 type)	Trade secret	61.80	Ceramic	0.025956	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.011340	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.004158	
	Plating1 (Ni)	7440-02-0	0.40	Plating1	0.000168	
	Plating2 (Sn)	7440-31-5	0.90	Plating2	0.000378	
Capacitor					0.007000	0.050
	Ceramic (BaTiO3 type)	Trade secret	64.94	Ceramic	0.004546	
	Inner electrode (Ni)	7440-02-0	19.20	Inner electrode	0.001344	
	Outer electrode (Cu)	7440-50-8	14.07	Outer electrode	0.000985	
	Plating1 (Ni)	7440-02-0	0.51	Plating1	0.000036	
	Plating2 (Sn)	7440-31-5	1.28	Plating2	0.000090	
Capacitor					0.004200	0.030
	Ceramic (BaTiO3 type)	Trade secret	66.00	Ceramic	0.002772	
	Inner electrode (Ni)	7440-02-0	2.67	Inner electrode	0.000112	
	Outer electrode (Cu)	7440-50-8	23.33	Outer electrode	0.000980	
	Plating1 (Ni)	7440-02-0	2.33	Plating1	0.000098	
	Plating2 (Sn)	7440-31-5	5.67	Plating2	0.000238	
Capacitor					0.042900	0.308
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.028915	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.007293	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.005920	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000215	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.000558	
Heat Sink					7.100000	50.921
	Copper (Cu)	7440-50-8	97.25	Main material	6.904750	
	Nickel (Ni)	7440-02-0	2.75	Main material	0.195250	
Heat Sink Adhesive					0.152000	1.090
	Aluminum oxide(Al2O3)	1344-28-1	70.00	Main material	0.106400	
	Zinc oxide (ZnO)	1314-13-2	15.00	Main material	0.022800	
	Silicone	Trade Secret	15.00	Main material	0.022800	
	Additives	Trade Secret		Additive		

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
08/10/11	1.0	Initial Xilinx release.
09/28/12	1.1	Updated Substrate Component

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