



PK484 (v1.1) September 28, 2012

# 100% Material Declaration Data Sheet FF1154

**Average Weight: 13.5539g**

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
<b>Silicon Die (FPGA)</b>				Silicon IC	<b>0.821184</b>	<b>6.059</b>
	Doped silicon (Si)	7440-21-3	100.00	Basis	0.821184	
<b>Solder Bump</b>				Die to package	<b>0.042757</b>	<b>0.315</b>
	Tin (Sn)	7440-31-5	63.00	Basis	0.026937	
	Lead (Pb)	7439-92-1	37.00	Basis	0.015820	
<b>Die Underfill</b>					<b>0.090000</b>	<b>0.664</b>
	Bisphenol F-type liquid epoxy resin	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	
<b>Solder Balls</b>					<b>1.099324</b>	<b>8.111</b>
	Tin (Sn)	7440-31-5	63.00	Main material	0.692574	
	Lead (Pb)	7440-92-1	37.00	Main material	0.406750	
<b>Substrate</b>					<b>4.153196</b>	<b>30.642</b>
	Cu	7440-50-8	37.27	Main Material	1.547927	
	Tin	7440-31-5	1.69	Main Material	0.069984	
	Lead	7439-92-1	0.29	Main Material	0.012001	
	Silver	7440-22-4	0.04	Main Material	0.001595	
	BT Core	N/A	40.70	Main Material	1.6905	
	ABF	N/A	18.88	Main Material	0.784	
	Soldermask	N/A	1.14	Main Material	0.047189	

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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
<b>Solder Paste</b>					<b>0.015000</b>	<b>0.111</b>
	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	
<b>Capacitor</b>					<b>0.042000</b>	<b>0.310</b>
	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	
<b>Capacitor</b>					<b>0.031201</b>	<b>0.230</b>
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.021029	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.005304	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.004306	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000156	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.000406	
<b>Capacitor</b>					<b>0.007200</b>	<b>0.053</b>
	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	
<b>Heat Sink</b>					<b>7.100000</b>	<b>52.384</b>
	Copper (Cu)	7440-50-8	97.25	Main material	6.904750	
	Nickel (Ni)	7440-02-0	2.75	Main material	0.195250	
<b>Heat Sink Adhesive</b>					<b>0.152000</b>	<b>1.121</b>
	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	Update Substrate component

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