



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
<b>Silicon Die (FPGA)</b>				Silicon IC	<b>0.821184</b>	<b>5.889</b>
	Doped silicon (Si)	7440-21-3	100.00	Basis	0.821184	
<b>Solder Bump</b>				Die to package	<b>0.427509</b>	<b>3.066</b>
	Tin (Sn)	7440-31-5	63.00	Basis	0.269331	
	Lead (Pb)	7439-92-1	37.00	Basis	0.158178	
<b>Die Underfill</b>					<b>0.090000</b>	<b>0.645</b>
	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	
<b>Solder Balls</b>					<b>1.100277</b>	<b>7.891</b>
	Tin (Sn)	7440-31-5	63.00	Main material	0.693175	
	Lead (Pb)	7440-92-1	37.00	Main material	0.407102	
<b>Substrate</b>					<b>4.141205</b>	<b>29.700</b>
	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	

© Copyright 2011-2012 Xilinx, Inc. XILINX, the Xilinx logo, Virtex, Spartan, ISE, and other designated brands included herein are trademarks of Xilinx in the United States and other countries. All other trademarks are the property of their respective owners.

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>0.108</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>0.301</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>0.007000</b>	<b>0.050</b>
	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	
<b>Capacitor</b>					<b>0.004200</b>	<b>0.030</b>
	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	
<b>Capacitor</b>					<b>0.042900</b>	<b>0.308</b>
	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	
<b>Heat Sink</b>					<b>7.100000</b>	<b>50.921</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>1.090</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	Updated Substrate Component

## Notice of Disclaimer

Xilinx regards this materials data to be correct but makes no guarantee as to its accuracy or completeness, including, but not limited to, with respect to its compliance with applicable environmental laws and regulations. Xilinx subcontracts the production, test and assembly of hardware devices to independent third-party vendors and materials suppliers (“Contractors”). All data provided hereunder is based on information received from Contractors. Xilinx has not independently verified the accuracy or completeness of this information which is provided solely for your reference in connection with the use of Xilinx products.