



PK425 (v1.3) September 28,  
2012

## 100% Material Declaration Data Sheet for Virtex®-6 FFG1156 Package

**Average Weight: 10.9718 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</b>				Silicon IC	<b>0.505265</b>	<b>4.605</b>
	Doped silicon	7440-21-3	100.00	Basis	0.505265	
<b>Solder Bump</b>				Die to package	<b>0.026065</b>	<b>0.238</b>
	Tin	7440-31-5	63.00	Basis	0.016421	
	Lead	7439-92-1	37.00	Basis	0.009644	
<b>Die Underfill</b>					<b>0.077000</b>	<b>0.702</b>
	Bisphenol F-type liquid epoxy resin	9003-36-5	20.00	Basis	0.015400	
	Phenolic resin	Trade secret	15.00	Basis	0.011550	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.003850	
	Amine type accelerator	Trade secret	5.00	Basis	0.003850	
	Silicon dioxide	60676-86-0	51.50	Basis	0.039655	
	Carbon black	1333-86-4	1.00	Basis	0.000770	
	Additives	Trade secret	2.50	Basis	0.001925	
<b>Solder Paste</b>					<b>0.062140</b>	<b>0.566</b>
	Tin	7440-31-5	96.50	Basis	0.059965	
	Silver	7440-22-4	3.00	Basis	0.001864	
	Copper	7440-50-8	0.50	Basis	0.000311	
<b>Heat Sink</b>					<b>4.990000</b>	<b>45.480</b>
	Copper	7440-50-8	99.54	Main material	4.967046	
	Nickel	7440-02-0	0.46	Main material	0.022954	
<b>Heat Sink Adhesive</b>					<b>0.152000</b>	<b>1.385</b>
	Aluminum Oxide	1344-28-1	70.00	Main material	0.106400	
	Zinc Oxide	1314-13-2	15.00	Main material	0.022800	
	Organic silicon compound	Trade secret	15.00	Main material	0.022800	
<b>Solder Balls</b>					<b>0.965683</b>	<b>8.801</b>
	Tin	7440-31-5	96.50	Base metal	0.931884	
	Silver	7440-22-4	3.00	Base metal	0.028970	
	Copper	7440-50-8	0.50	Base metal	0.004828	

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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>Substrate</b>					<b>4.086225</b>	<b>37.243</b>
	Cu	7440-50-8	35.80	Main material	1.462846	
	Tin	7440-31-5	2.03	Main material	0.082814	
	Lead	7439-92-1	0.51	Main material	0.020998	
	Silver	7440-22-4	0.04	Main material	0.001542	
	BT Core	N/A	41.37	Main material	1.690500	
	ABF	N/A	19.19	Main material	0.784000	
	Soldermask	N/A	1.07	Main material	0.043555	
<b>Capacitor 1</b>					<b>0.042000</b>	<b>0.383</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 2</b>					<b>0.062400</b>	<b>0.569</b>
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.042058	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.010608	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.008611	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000312	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.000811	
<b>Capacitor 3</b>					<b>0.003000</b>	<b>0.027</b>
	Ceramic (BaTiO3 type)	Trade secret	66.00	Ceramic	0.001980	
	Inner electrode (Ni)	7440-02-0	2.67	Inner electrode	0.000080	
	Outer electrode (Cu)	7440-50-8	23.33	Outer electrode	0.000700	
	Plating1 (Ni)	7440-02-0	2.33	Plating1	0.000070	
	Plating2 (Sn)	7440-31-5	5.67	Plating2	0.000170	

## Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
10/14/10	1.0	Initial Xilinx release.
11/11/10	1.1	Revised component weights and percent of total data in multiple cells. Removed bismaleimide triazine, and inorganic filter from core component.
07/29/11	1.2	Revised percentage of component figures for substrate component
09/28/12	1.3	Updated substrate component

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