



100% Material Declaration Data Sheet

FFG1156 Package for Virtex-6 FPGAs

PK425 (v1.2) July 29, 2011

Average Weight: 10.6755 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	0.505265	4.733
	Doped silicon	7440-21-3	100.00	Basis	0.505265	
Solder Bump				Die to package	0.026065	0.244
	Tin	7440-31-5	63.00	Basis	0.016421	
	Lead	7439-92-1	37.00	Basis	0.009644	
Die Underfill					0.077000	0.721
	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	
Solder Paste					0.062140	0.582
	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	
Heat Sink					4.990000	46.742
	Copper	7440-50-8	99.54	Main material	4.967046	
	Nickel	7440-02-0	0.46	Main material	0.022954	
Heat Sink Adhesive					0.152000	1.424
	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	
Solder Balls					0.965683	9.046
	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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Substrate					3.789957	35.501
Plating	Copper	7440-50-8	38.73	Main material	1.467686	
	Nickel	7440-02-0	0.54	Main material	0.020310	
	Gold	7440-57-5	0.12	Main material	0.004400	
Bump	Lead	7439-92-1	0.59	Main material	0.022345	
	Tin	7440-31-5	1.00	Main material	0.038048	
Copper Foil	Copper	7440-50-8	3.58	Main material	0.135612	
Core	Fiberglass	65997-17-3	21.98	Main material	0.833000	
	Epoxy resin	29690-82-2 68541-56-0 25068-38-6	21.98	Main material	0.833000	
ABF	Bisphenol A-type epoxy resin	25068-38-6	2.59	Main material	0.098000	
	Cyclohexane	108-94-1	2.59	Main material	0.098000	
	N, N-dimethylformamide	68-12-2	2.59	Main material	0.098000	
	Silica powder (Silicon dioxide)	7631-86-9	2.59	Main material	0.098000	
Solder Mask	Levelling agents	N/A	0.01	Main material	0.000348	
	Phthalocyanine blue, organic pigment	N/A	0.00	Main material	0.000087	
	Amine compound	N/A	0.00	Main material	0.000174	
	Barium sulfate	7727-43-7	0.16	Main material	0.005924	
	Silica	15468-32-3	0.08	Main material	0.002962	
	Talc	14807-96-6	0.08	Main material	0.002962	
	Diethylene glycol monoethyl ether acetate	N/A	0.04	Main material	0.001568	
	Dipropylane glycol monomethyl ether	N/A	0.04	Main material	0.001350	
	Dipropylane glycol monomethyl ether acetate	N/A	0.10	Main material	0.003964	
	High boiling-point petroleum solvent	N/A	0.09	Main material	0.003310	
	Aromatic carbonyl compound	N/A	0.03	Main material	0.001176	
	Acrylic monomer	N/A	0.04	Main material	0.001481	
	Acrylic resin	N/A	0.31	Main material	0.011629	
	Epoxy resin	N/A	0.17	Main material	0.006620	

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Capacitor 1					0.042000	0.393
	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 2					0.062400	0.585
	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	
Capacitor 3					0.003000	0.028
	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

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