XILINX®

PK427 v1.1 October 26, 2010

100% Material Declaration Data Sheet FFG1759 Package for Virtex-6 FPGAs

Average Weight: 20.5536g

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**	**0.935666**	**4.552**
	Doped Silicon	7440-21-3	100.00	Basis	0.935666	
Solder Bump				**Die to package**	**0.048899**	**0.238**
	Tin	7440-31-5	63.00	Basis	0.030806	
	Lead	7439-92-1	37.00	Basis	0.018093	
Die Underfill					**0.130000**	**0.632**
	Bisphenol F-Type Liquid Epoxy Resin	9003-36-5	20.00	Basis	0.026000	
	Phenolic resin	Trade Secret	15.00	Basis	0.019500	
	Bisphenol A-type liquid epoxy resin	25068-38-6	5.00	Basis	0.006500	
	Amine type accelerator	Trade Secret	5.00	Basis	0.006500	
	Silicon dioxide	60676-86-0	51.50	Basis	0.066950	
	Carbon black	1333-86-4	1.00	Basis	0.001300	
	Additives	Trade Secret	2.50	Basis	0.003250	
Substrate					**5.632439**	**27.404**
Plating	Copper	7440-50-8	39.78	Main material	2.240418	
	Nickel	7440-02-0	0.42	Main material	0.023850	
	Gold	7440-57-5	0.09	Main material	0.005167	
Bump	Lead	7439-92-1	0.40	Main material	0.022345	
	Tin	7440-31-5	0.68	Main material	0.038048	
Copper Foil	Copper	7440-50-8	3.52	Main material	0.198108	
Core	Fiberglass	65997-17-3	21.81	Main material	1.228250	
	Epoxy Resin	N/A	21.81	Main material	1.228250	
ABF	Bisphenol A-Type Epoxy Resin	25068-38-6	2.57	Main material	0.144500	
	Cyclohexane	108-94-1	2.57	Main material	0.144500	
	N, N-Dimethylformamide	68-12-2	2.57	Main material	0.144500	
	Silica Powder (Silicon Dioxide)	7631-86-9	2.57	Main material	0.144500	

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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 Mask	Levelling Agents and Others	N/A	0.01	Main material	0.000560	
	Phthalocyanine Blue, Organic Pigment	N/A	0.00	Main material	0.000140	
	Amine Compound	N/A	0.00	Main material	0.000280	
	Barium Sulfate	7727-43-7	0.17	Main material	0.009520	
	Silica	15468-32-3	0.08	Main material	0.004760	
	Talc	14807-96-6	0.08	Main material	0.004760	
	Diethylene Glycol Monoethyl Ether Acetate	N/A	0.04	Main material	0.002520	
	Dipropylane Glycol Monomethyl Ether	N/A	0.04	Main material	0.002170	
	Dipropylane Glycol Monomethyl Ether Acetate	N/A	0.11	Main material	0.006370	
	High Boiling-Point Petroleum Solvent	N/A	0.09	Main material	0.005320	
	Aromatic Carbonyl Compound	N/A	0.03	Main material	0.001890	
	Acrylic Monomer	N/A	0.04	Main material	0.002380	
	Acrylic Resin	N/A	0.33	Main material	0.018691	
	Epoxy Resin	N/A	0.19	Main material	0.010640	
Solder Paste					**0.083000**	**0.404**
	Tin	7440-31-5	96.50	Basis	0.080095	
	Silver	7440-22-4	3.00	Basis	0.002490	
	Copper	7440-50-8	0.50	Basis	0.000415	
Capacitor 1					**0.056000**	**0.272**
	Ceramic ($BaTiO_3$ type)	Trade Secret	61.80	Ceramic	0.034608	
	Inner Electrode (Nickel)	7440-02-0	27.00	Inner Electrode	0.015120	
	Outer Electrode (Copper)	7440-50-8	9.90	Outer Electrode	0.005544	
	Plating 1 (Nickel)	7440-02-0	0.40	Plating 1	0.000224	
	Plating 2 (Tin)	7440-31-5	0.90	Plating 2	0.000504	

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Capacitor 2					**0.081900**	**0.398**
	Ceramic ($BaTiO_3$ type)	Trade Secret	67.40	Ceramic	0.055201	
	Inner Electrode (Nickel)	7440-02-0	17.00	Inner Electrode	0.013923	
	Outer Electrode (Copper)	7440-50-8	13.80	Outer Electrode	0.011302	
	Plating 1 (Nickel)	7440-02-0	0.50	Plating 1	0.000410	
	Plating 2 (Tin)	7440-31-5	1.30	Plating 2	0.001065	
Capacitor 3					**0.005400**	**0.026**
	Ceramic ($BaTiO_3$ type)	Trade Secret	66.00	Ceramic	0.003564	
	Inner Electrode (Nickel)	7440-02-0	2.67	Inner Electrode	0.000144	
	Outer Electrode (Copper)	7440-50-8	23.33	Outer Electrode	0.001260	
	Plating 1 (Nickel)	7440-02-0	2.33	Plating 1	0.000126	
	Plating 2 (Tin)	7440-31-5	5.67	Plating 2	0.000306	
Heat Sink					**11.900000**	**57.898**
	Copper	7440-50-8	97.94	Main material	11.654860	
	Nickel	7440-02-0	2.06	Main material	0.245140	
Heat Sink Adhesive					**0.210000**	**1.022**
	Aluminium Oxide	1344-28-1	70.00	Main material	0.147000	
	Zinc oxide	1314-13-2	15.00	Main material	0.031500	
	Silicone	Trade Secret	15.00	Main material	0.031500	
	Additive	Trade Secret		Additive		
Solder Balls					**1.470244**	**7.153**
	Tin	7440-31-5	96.50	Base metal	1.418785	
	Silver	7440-22-4	3.00	Base metal	0.044107	
	Copper	7440-50-8	0.50	Base metal	0.007351	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
09/27/10	1.0	Initial Xilinx release.
10/26/10	1.1	Updated component descriptions.

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