



PK458 (v1.1) September 28,
2012

100% Material Declaration Data Sheet FF1759 Virtex-6

Average Weight: 21.0121 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	0.935666	4.453
	Doped silicon	7440-21-3	100.00	Basis	0.935666	
Solder Bump				Die to package	0.048899	0.233
	Tin (Sn)	7440-31-5	63.00	Basis	0.030806	
	Lead (Pb)	7439-92-1	37.00	Basis	0.018093	
Die Underfill					0.130000	0.619
	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					5.886081	28.013
	Cu	7440-50-8	35.780	Main Material	2.106128	
	Tin	7440-31-5	0.89	Main Material	0.052415	
	Lead	7439-92-1	0.19	Main Material	0.011172	
	Silver	7440-22-4	0.02	Main Material	0.001084	
	BT Core	N/A	42.35	Main Material	2.492625	
	ABF	N/A	19.64	Main Material	1.156000	
	Soldermask	N/A	1.13	Main Material	0.066657	

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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 Paste					0.083000	0.395
	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	0.267
	Ceramic (BaTiO3 type)	Trade secret	61.80	Ceramic	0.034608	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.015120	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.005544	
	Plating1 (Ni)	7440-02-0	0.40	Plating1	0.000224	
	Plating2 (Sn)	7440-31-5	0.90	Plating2	0.000504	
Capacitor 2					0.081900	0.390
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.055201	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.013923	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.011302	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000410	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.001065	
Capacitor 3					0.005400	0.026
	Ceramic (BaTiO3 type)	Trade secret	66.00	Ceramic	0.003564	
	Inner electrode (Ni)	7440-02-0	2.67	Inner electrode	0.000144	
	Outer electrode (Cu)	7440-50-8	23.33	Outer electrode	0.001260	
	Plating1 (Ni)	7440-02-0	2.33	Plating1	0.000126	
	Plating2 (Sn)	7440-31-5	5.67	Plating2	0.000306	
Heat Sink					11.900000	56.634
	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	0.999
	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					1.675163	7.972
	Tin (Sn)	7440-31-5	63.00	Base metal	1.055353	
	Lead (Pb)	7439-92-1	37.00	Base metal	0.619810	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
03/4/11	1.0	Initial Xilinx release.
09/28/12	1.1	Updated Substrate Component

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