PK768 (v1.0) October 2, 2015

100% Material Declaration Data Sheet for UltraScale FFVC1517

Average Weight: 15.270g

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Silicon Die					**0.731163**	**4.788%**
	Silicon (Si)	7440-21-3	100.00	Basis	0.731163	
Solder Bump					**0.028328**	**0.186%**
	Tin (Sn)	7440-31-5	98.20	Basis	0.027818	
	Silver (Ag)	7440-22-4	1.80	Basis	0.000510	
Solder Paste					**0.013440**	**0.088%**
	Tin (Sn)	7440-31-5	96.50	Metal	0.012970	
	Silver (Ag)	7440-22-4	3.00	Metal	0.000403	
	Copper (Cu)	7440-50-8	0.50	Metal	0.000067	
Capacitor 1					**0.033600**	**0.220%**
	Barium oxide	1304-28-5	30.22	Ceramic	0.010154	
	Titanium dioxide	13463-67-7	15.11	Ceramic	0.005077	
	Misc.	trade secret	5.04	Ceramic	0.001693	
	Nickel (Ni)	7440-02-0	33.44	Inner electrode	0.011236	
	Copper (Cu)	7440-50-8	11.87	Outer electrode	0.003988	
	Silicon dioxide	7631-86-9	1.06	Outer electrode	0.000356	
	Boric oxide	1303-86-2	0.26	Outer electrode	0.000087	
	Nickel (Ni)	7440-02-0	0.81	Nickel Plating Layer	0.000272	
	Tin (Sn)	7440-31-5	2.19	Tin Plating Layer	0.000736	
Capacitor 2					**0.019320**	**0.127%**
	Barium oxide	1304-28-5	31.67	Ceramic	0.006119	
	Titanium dioxide	13463-67-7	15.83	Ceramic	0.003058	
	Misc.	trade secret	5.28	Ceramic	0.001020	
	Nickel (Ni)	7440-02-0	26.67	Inner electrode	0.005153	
	Copper (Cu)	7440-50-8	15.10	Outer electrode	0.002917	
	Silicon dioxide	7631-86-9	1.34	Outer electrode	0.000259	
	Boric oxide	1303-86-2	0.33	Outer electrode	0.000064	
	Nickel (Ni)	7440-02-0	1.00	Nickel Plating Layer	0.000193	
	Tin (Sn)	7440-31-5	2.78	Tin Plating Layer	0.000537	

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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
Underfill					**0.105000**	**0.688%**
	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	Basis	0.015750	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	Basis	0.010500	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	Basis	0.005250	
	Amine type hardener	trade secret	10.00	Basis	0.010500	
	Silicon dioxide	60676-86-0	58.00	Filler	0.060900	
	Carbon black	1333-86-4	1.00	Color agent	0.001050	
	Additives	trade secret	1.00	Additives	0.001050	
Lid					**6.410000**	**41.978%**
	Copper (Cu)	7440-50-8	98.35	Main Material	6.304235	
	Nickel (Ni)	7440-02-0	1.65	Main Material	0.105765	
Lid Adhesive					**0.300000**	**1.965%**
	Aluminium Oxide Al2O3	1344-28-1	80.00	Main Material	0.240000	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main Material	0.060000	
Solder Ball					**1.267250**	**8.299%**
	Tin (Sn)	7440-31-5	96.50	Main Material	1.222896	
	Silver (Ag)	7440-22-4	3.00	Main Material	0.038018	
	Copper (Cu)	7440-50-8	0.50	Main Material	0.006336	
Substrate					**6.361899**	**41.663%**
	Copper (Cu)	7440-50-8	40.49		2.575933	
	Tin (Sn)	7440-31-5	0.64		0.040716	
	Lead (Pb)	7439-92-1	0.00		0.000000	
	Silver (Ag)	7440-22-4	0.02		0.001272	
	BT Core	N/A	43.11		2.742615	
	ABF	N/A	14.24		0.905934	
	Solder Mask	N/A	1.50		0.095428	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
10/2/2015	1.0	Initial Xilinx release

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