PK688 (v1.0) April 3, 2015

100% Material Declaration Data Sheet for UltraScale FBVA900

Average Weight: 4.42g

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Silicon Die					**0.328204**	**7.425%**
	Silicon (Si)	7440-21-3	100.00	Basis	0.328204	
Solder Bump					**0.015849**	**0.359%**
	Tin (Sn)	7440-31-5	98.20	Basis	0.015564	
	Silver (Ag)	7440-22-4	1.80	Basis	0.000285	
Solder Paste					**0.008320**	**0.188%**
	Tin (Sn)	7440-31-5	96.50	metal	0.008029	
	Silver (Ag)	7440-22-4	3.00	metal	0.000250	
	Copper (Cu)	7440-50-8	0.50	metal	0.000042	
Capacitor 1					**0.019200**	**0.434%**
	Barium oxide	1304-28-5	30.22	Ceramic	0.005802	
	Titanium dioxide	13463-67-7	15.11	Ceramic	0.002901	
	Misc.	trade secret	5.04	Ceramic	0.000968	
	Nickel (Ni)	7440-02-0	33.44	Inner electrode	0.006420	
	Copper (Cu)	7440-50-8	11.87	Outer electrode	0.002279	
	Silicon dioxide	7631-86-9	1.06	Outer electrode	0.000204	
	Boric oxide	1303-86-2	0.26	Outer electrode	0.000050	
	Nickel (Ni)	7440-02-0	0.81	Nickel Plating Layer	0.000156	
	Tin (Sn)	7440-31-5	2.19	Tin Plating Layer	0.000420	
Capacitor 2					**0.017670**	**0.400%**
	Barium oxide	1304-28-5	31.67	Ceramic	0.005596	
	Titanium dioxide	13463-67-7	15.83	Ceramic	0.002797	
	Misc.	trade secret	5.28	Ceramic	0.000933	
	Nickel (Ni)	7440-02-0	26.67	Inner electrode	0.004713	
	Copper (Cu)	7440-50-8	15.10	Outer electrode	0.002668	
	Silicon dioxide	7631-86-9	1.34	Outer electrode	0.000237	
	Boric oxide	1303-86-2	0.33	Outer electrode	0.000058	
	Nickel (Ni)	7440-02-0	1.00	Nickel Plating Layer	0.000177	
	Tin (Sn)	7440-31-5	2.78	Tin Plating Layer	0.000491	

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Underfill					**0.044000**	**0.995%**
	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	Basis	0.006600	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	Basis	0.004400	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	Basis	0.002200	
	Amine type hardener	trade secret	10.00	Basis	0.004400	
	Silicon dioxide	60676-86-0	58.00	Filler	0.025520	
	Carbon black	1333-86-4	1.00	Color agent	0.000440	
	Additives	trade secret	1.00	Additives	0.000440	
Solder Ball					**0.751829**	**17.010%**
	Tin (Sn)	7440-31-5	96.50	Main Material	0.725515	
	Silver (Ag)	7440-22-4	3.00	Main Material	0.022555	
	Copper (Cu)	7440-50-8	0.50	Main Material	0.003759	
Substrate					**3.234928**	**73.188%**
	Copper (Cu)	7440-50-8	34.41		1.113139	
	Tin (Sn)	7440-31-5	0.81		0.026203	
	Lead (Pb)	7439-92-1	0.00		0.000000	
	Silver (Ag)	7440-22-4	0.03		0.000970	
	BT Core	N/A	51.59		1.668899	
	ABF	N/A	11.48		0.371370	
	Solder Mask	N/A	1.68		0.054347	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
04/03/2015	1.0	Initial Xilinx release

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