PK690 (v1.0) February 20, 2015

100% Material Declaration Data Sheet for UltraScale FBVA676

Average Weight: 3.198g

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**	**10.263%**
	Silicon (Si)	7440-21-3	100.00	Basis	0.328204	
Solder Bump					**0.015849**	**0.496%**
	Tin (Sn)	7440-31-5	98.20	Basis	0.015564	
	Silver (Ag)	7440-22-4	1.80	Basis	0.000285	
Solder Paste					**0.008320**	**0.260%**
	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					**0.014400**	**0.450%**
	Barium oxide	1304-28-5	30.22	Ceramic	0.004352	
	Titanium dioxide	13463-67-7	15.11	Ceramic	0.002176	
	Misc.	trade secret	5.04	Ceramic	0.000726	
	Nickel (Ni)	7440-02-0	33.44	Inner electrode	0.004815	
	Copper (Cu)	7440-50-8	11.87	Outer electrode	0.001709	
	Silicon dioxide	7631-86-9	1.06	Outer electrode	0.000153	
	Boric oxide	1303-86-2	0.26	Outer electrode	0.000037	
	Nickel (Ni)	7440-02-0	0.81	Nickel Plating Layer	0.000117	
	Tin (Sn)	7440-31-5	2.19	Tin Plating Layer	0.000315	
Capacitor 2					**0.012090**	**0.378%**
	Barium oxide	1304-28-5	31.67	Ceramic	0.003829	
	Titanium dioxide	13463-67-7	15.83	Ceramic	0.001914	
	Misc.	trade secret	5.28	Ceramic	0.000638	
	Nickel (Ni)	7440-02-0	26.67	Inner electrode	0.003224	
	Copper (Cu)	7440-50-8	15.10	Outer electrode	0.001826	
	Silicon dioxide	7631-86-9	1.34	Outer electrode	0.000162	
	Boric oxide	1303-86-2	0.33	Outer electrode	0.000040	
	Nickel (Ni)	7440-02-0	1.00	Nickel Plating Layer	0.000121	
	Tin (Sn)	7440-31-5	2.78	Tin Plating Layer	0.000336	

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**	**1.376%**
	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					**0.564707**	**17.658%**
	Tin (Sn)	7440-31-5	96.50	Main Material	0.544942	
	Silver (Ag)	7440-22-4	3.00	Main Material	0.016941	
	Copper (Cu)	7440-50-8	0.50	Main Material	0.002824	
Substrate					**2.210430**	**69.119%**
	Copper (Cu)	7440-50-8	25.12		0.555308	
	Tin (Sn)	7440-31-5	1.03		0.022694	
	Lead (Pb)	7439-92-1	0.00		0.000003	
	Silver (Ag)	7440-22-4	0.03		0.000706	
	BT Core	N/A	63.55		1.404805	
	ABF	N/A	8.47		0.187210	
	Solder Mask	N/A	1.80		0.039703	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
02/20/2015	1.0	Initial Xilinx release

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