XILINX®

PK694 (v1.0) December 15, 2014

100% Material Declaration Data Sheet for UltraScale FFVA1517

Average Weight: 14.944g

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
Silicon Die					**0.474641**	**3.176%**
	Silicon (Si)	7440-21-3	100.00	Basis	0.474641	
Solder Bump					**0.022556**	**0.151%**
	Tin (Sn)	7440-31-5	98.20	Basis	0.022150	
	Silver (Ag)	7440-22-4	1.80	Basis	0.000406	
Solder Paste					**0.011968**	**0.080%**
	Tin (Sn)	7440-31-5	96.50	Metal	0.011549	
	Silver (Ag)	7440-22-4	3.00	Metal	0.000359	
	Copper (Cu)	7440-50-8	0.50	Metal	0.000060	
Capacitor 1					**0.035200**	**0.236%**
	Barium oxide	1304-28-5	30.22	Ceramic	0.010637	
	Titanium dioxide	13463-67-7	15.11	Ceramic	0.005319	
	Misc.	trade secret	5.04	Ceramic	0.001774	
	Nickel (Ni)	7440-02-0	33.44	Inner electrode	0.011771	
	Copper (Cu)	7440-50-8	11.87	Outer electrode	0.004178	
	Silicon dioxide	7631-86-9	1.06	Outer electrode	0.000373	
	Boric oxide	1303-86-2	0.26	Outer electrode	0.000092	
	Nickel (Ni)	7440-02-0	0.81	Nickel Plating Layer	0.000285	
	Tin (Sn)	7440-31-5	2.19	Tin Plating Layer	0.000771	
Capacitor 2					**0.022000**	**0.147%**
	Barium oxide	1304-28-5	31.67	Ceramic	0.006967	
	Titanium dioxide	13463-67-7	15.83	Ceramic	0.003483	
	Misc.	trade secret	5.28	Ceramic	0.001162	
	Nickel (Ni)	7440-02-0	26.67	Inner electrode	0.005867	
	Copper (Cu)	7440-50-8	15.10	Outer electrode	0.003322	
	Silicon dioxide	7631-86-9	1.34	Outer electrode	0.000295	
	Boric oxide	1303-86-2	0.33	Outer electrode	0.000073	
	Nickel (Ni)	7440-02-0	1.00	Nickel Plating Layer	0.000220	
	Tin (Sn)	7440-31-5	2.78	Tin Plating Layer	0.000612	

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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					**0.062000**	**0.415%**
	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	Basis	0.009300	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	Basis	0.006200	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	Basis	0.003100	
	Amine type hardener	trade secret	10.00	Basis	0.006200	
	Silicon dioxide	60676-86-0	58.00	Filler	0.035960	
	Carbon black	1333-86-4	1.00	Color agent	0.000620	
	Additives	trade secret	1.00	Additives	0.000620	
Lid					**6.840000**	**45.771%**
	Copper (Cu)	7440-50-8	98.35	Main Material	6.727140	
	Nickel (Ni)	7440-02-0	1.65	Main Material	0.112860	
Lid Adhesive					**0.180000**	**1.204%**
	Aluminium Oxide Al2O3	1344-28-1	80.00	Main Material	0.144000	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main Material	0.036000	
Solder Ball					**1.267250**	**8.480%**
	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					6.028385	**40.340%**
	Copper (Cu)	7440-50-8	40.49		2.440602	
	Tin (Sn)	7440-31-5	0.64		0.038371	
	Lead (Pb)	7439-92-1	0.00		0.000006	
	Silver (Ag)	7440-22-4	0.02		0.001193	
	BT Core	N/A	43.11		2.598947	
	ABF	N/A	14.24		0.858362	
	Solder Mask	N/A	1.51		0.090906	

Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
12/15/2014	1.0	Initial Xilinx release

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