



PK900 (v1.0) March 10, 2017

# 100% Material Declaration Data Sheet for UltraScale + FFVA/FFVB676

Average Weight : 7.1200 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight ( in grams)	Component % of total
Silicon die	Silicon	7440-21-3	100.00	basis	0.265670	3.731%
					<b>0.011689</b>	<b>0.164%</b>
Bump	Tin	7440-31-5	98.20	basis	0.011479	
	Silver	7440-22-4	1.80	basis	0.000210	
					<b>0.042780</b>	<b>0.601%</b>
Underfill	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	basis	0.006417	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	basis	0.004278	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.002139	
	Amine type hardener	trade secret	10.00	basis	0.004278	
	Silicon dioxide	60676-86-0	58.00	filler	0.024812	
	Carbon black	1333-86-4	1.00	color agent	0.000428	
	Additives	trade secret	1.00	additives	0.000428	
					<b>0.006240</b>	<b>0.088%</b>
Solder paste	Tin	7440-31-5	85.4000	metal	0.005329	
	Silver	7440-22-4	2.6600	metal	0.000166	
	Copper	7440-50-8	0.4400	metal	0.000027	
	Polymer		1.5300		0.000095	
	Organic amine		3.3000	flux	0.000206	
	Solvent		5.3600		0.000334	
	Organic acid		1.3100		0.000082	
					<b>0.001200</b>	<b>0.017%</b>
Capacitor 1	BaTiO3 type	1304-28-5	30.22	Ceramic	0.000363	
	Titanium dioxide	13463-67-7	15.11		0.000181	
	Misc	-	5.04		0.000060	
	Nickel	7440-02-0	33.44	Inner electrode	0.000401	
	Copper	7440-50-8	11.87	Out electrode	0.000142	
	Silicon dioxide	7631-86-9	1.06		0.000013	
	diboron trioxide; boric	1303-86-2	0.26		0.000003	
	Nickel	7440-02-0	0.81	Plating1	0.000010	
	Tin	7440-31-5	2.19	Plating2	0.000026	
						<b>0.000920</b>
Capacitor2	BaTiO3 type	1304-28-5	31.67	Ceramic	0.000291	
	Titanium dioxide	13463-67-7	15.83		0.000146	
	Misc	-	5.28		0.000049	
	Nickel	7440-02-0	26.67	Inner Electrode	0.000245	
	Copper	7440-50-8	15.10	Outer Electrode	0.000139	
	Silicon dioxide	7631-86-9	1.34		0.000012	
	diboron trioxide; boric	1303-86-2	0.33		0.000003	
	Nickel	7440-02-0	1.00	Plating1	0.000009	
	Tin	7440-31-5	2.78	Plating2	0.000026	
					<b>3.020000</b>	<b>42.416%</b>
Heat sink	Copper	7440-50-8	98.35	Main material	2.970170	
	Nickel	7440-02-0	1.65	Main material	0.049830	
					<b>0.080000</b>	<b>1.124%</b>
Heat sink adhesive	Aluminium Oxide Al2O3	-	80.00	Main material	0.064000	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.016000	
					<b>0.564707</b>	<b>7.931%</b>
Solder ball	Tin	7440-31-5	96.50	Main material	0.544942	
	Silver	7440-22-4	3.00	Main material	0.016941	
	Copper	7440-50-8	0.50	Main material	0.002824	
					<b>3.126794</b>	<b>43.916%</b>
Substrate	Copper	7440-50-8	41.87		1.309189	
	Tin	7440-31-5	0.36		0.011256	
	Silver	7440-22-4	0.01		0.000313	
	Core	N/A	38.87		1.215385	
	ABF	N/A	17.49		0.546876	
	Solder Mask	N/A	1.40		0.043775	

## Revision History

Date	Version	Description of Revisions
3/10/2017	1.0	Initial Xilinx Release

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