



PK904 (v1.0) April 6, 2017

# 100% Material Declaration Data Sheet for UltraScale + FFVB/FFVE1517

Average Weight : 15.5800 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	0.724022	4.647%
					0.724022	
Bump	Tin	7440-31-5	98.20	basis	0.031395	0.202%
	Silver	7440-22-4	1.80	basis	0.000565	
Underfill					0.085500	0.549%
	Bisphenol F type liquid	9003-36-5	15.00	basis	0.012825	
	1,6-Bis(2,3-	27610-48-6	10.00	basis	0.008550	
	Bisphenol A type liquid	25068-38-6	5.00	basis	0.004275	
	Amine type hardener	trade secret	10.00	basis	0.008550	
	Silicon dioxide	60676-86-0	58.00	filler	0.049590	
	Carbon black	1333-86-4	1.00	color agent	0.000855	
	Additives	trade secret	1.00	additives	0.000855	
Solder paste					0.014720	0.094%
	Tin	7440-31-5	82.70	metal	0.012173	
	Silver	7440-22-4	2.70	metal	0.000397	
	Copper	7440-50-8	1.55	metal	0.000228	
	Solvent		5.50		0.000810	
	Organic amine		3.00	flux	0.000442	
	Surfactant		3.00		0.000442	
	Copolymer		1.55		0.000228	
Capacitor 1					0.001200	0.008%
	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	
					0.000920	0.006%
Capacitor2					0.000291	
	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	
Heat sink					6.710000	43.068%
	Copper	7440-50-8	98.35	Main material	6.599285	
	Nickel	7440-02-0	1.65	Main material	0.110715	
Heat sink adhesive					0.223000	1.431%
	Aluminium Oxide Al2O3	-	80.00	Main material	0.178400	
	Dimethyl siloxane,	68083-19-2	20.00	Main material	0.044600	
Solder ball					1.267250	8.134%
	Tin	7440-31-5	96.50	Main material	1.222896	
	Silver	7440-22-4	3.00	Main material	0.038018	
	Copper	7440-50-8	0.50	Main material	0.006336	
Substrate					6.521993	41.861%
	Copper	7440-50-8	41.82		2.727497	
	Tin	7440-31-5	0.50		0.032610	
	Silver	7440-22-4	0.02		0.001304	
	Resin	N/A	0.06		0.003913	
	Core	N/A	38.31		2.498576	
	ABF	N/A	18.19		1.186351	
	Solder Mask	N/A	1.10		0.071742	

## Revision History

Date	Version	Description of Revisions
4/6/2017	1.0	Initial Xilinx Release

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