



PK924(v1.0) October 10, 2017

100% Material Declaration Data Sheet for Ultrascale+ & Zynq Ultrascale+ FFVB/FFVE/FFVF1517

Average Weight : 15.7800 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	4.588%
					0.724022	
Bump	Tin	7440-31-5	98.20	basis	0.030830	0.199%
	Silver	7440-22-4	1.80	basis	0.000565	
					0.031395	
Underfill	Bisphenol F type liquid	9003-36-5	15.00	basis	0.012825	0.542%
	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	
						0.085500
Solder paste	Tin	7440-31-5	82.70	metal	0.010506	0.081%
	Silver	7440-22-4	2.70	metal	0.000343	
	Copper	7440-50-8	1.55	metal	0.000197	
	Additives	trade secret	13.05	flux	0.001658	
						0.001200
Capacitor 1	BaTiO3 type	1304-28-5	30.22	Ceramic	0.000363	0.008%
	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
Capacitor 2	BaTiO3 type	12047-27-7	61.70	Ceramic	0.000568	0.006%
	Nickel	7440-02-0	4.89	Inner Electrode	0.000045	
	Indium tin oxide	50926-11-9	18.30	Outer Electrode	0.000168	
	Copper	7440-50-8	13.40	Outer Electrode	0.000123	
	Nickel	7440-02-0	0.49	Plating1	0.000005	
	Tin	7440-31-5	1.22	Plating2	0.000011	
Heat sink					6.710000	42.522%
	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	1.413%
	Aluminium Oxide Al2O3	-	80.00	Main material	0.178400	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.044600	
Solder ball					1.267250	8.031%
	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					6.724009	42.611%
	Copper	7440-50-8	42.22		2.838877	
	Tin	7440-31-5	0.44		0.029586	
	Silver	7440-22-4	0.01		0.000672	
	Core	N/A	38.59		2.594795	
	ABF	N/A	17.36		1.167288	
	Solder Mask	N/A	1.38		0.092791	

Revision History

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

Notice of Disclaimer

Xilinx regards this materials data to be correct but makes no guarantee as to its accuracy or completeness, including, but not limited to, with respect to its compliance with applicable environmental laws and regulations. Xilinx subcontracts the production, test and assembly of hardware devices to independent third-party vendors and materials suppliers ("Contractors"). All data provided hereunder is based on information received from Contractors. Xilinx has not independently verified the accuracy or completeness of this information which is provided solely for your reference in connection with the use of Xilinx products.