



PK922 (v1.0) August 30, 2017

100% Material Declaration Data Sheet for UltraScale + FLVA/FLVB/FLVC 2104

Average Weight : 31.6843 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	0.659525	2.08%
					0.659525	
Micro-bump	Copper	7440-50-8	54.80	metal	0.023176	0.13%
	Nickel	7440-02-0	22.69	metal	0.009594	
	Tin	7440-31-5	21.87	metal	0.009250	
	Silver	7440-22-4	0.64	metal	0.000272	
					0.038875	
Micro-bump underfill	Amorphous silica	trade secret	46.87	Filler	0.018220	0.12%
	Amine compound	trade secret	20.84	Glue	0.008100	
	Epoxy resin compound-A	trade secret	15.63	Glue	0.006075	
	Epoxy resin compound-B	trade secret	15.63	Glue	0.006075	
	Epoxy resin compound-C	trade secret	1.04	Glue	0.000405	
					0.096193	
Mold compound	Silica filler	trade secret	86.02	Filler	0.082747	0.30%
	Epoxy resin	trade secret	8.60	Glue	0.008275	
	Hardener resin	trade secret	5.38	Glue	0.005172	
Interposer die	Silicon	7440-21-3	100.00	basis	0.178526	0.56%
C4 Bump	Copper	7440-50-8	70.73	metal	0.001464	0.01%
	Tin	7440-31-5	28.53	metal	0.000591	
	Silver	7440-22-4	0.75	metal	0.000015	
					0.027087	
Solder Paste	Tin	7440-31-5	96.5	metal	0.026139	0.09%
	Silver	7440-22-4	3	metal	0.000813	
	Copper	7440-50-8	0.5	metal	0.000135	
C4 Underfill	Bisphenol F/epichlorohydrin copolymer	9003-36-5	22	basis	0.025300	0.36%
	Silicon dioxide	60676-86-0	72	basis	0.082800	
	Carbon black	1333-86-4	1	basis	0.001150	
	Additives	trade secret	5	Additive	0.005750	
Lid	Copper	7440-50-8	99.64	Main material	17.338205	54.92%
	Nickel	7440-02-0	0.36	Main material	0.062643	
Lid Adhesive	Silica,Vitreous	60676-86-0	60	Main material	0.030000	0.16%
	Unsaturated Cyclic	trade secret	30	Main material	0.015000	
	Hydrocarbon Synthetic	Proprietary	8	Main material	0.004000	
	Boron Nitride	Proprietary	1	Main material	0.000500	
	Carbon Black	1333-86-4	0.5	Main material	0.000250	
	Toluene	108-88-3	0.5	Main material	0.000250	
					0.170000	
Lid TIM	Aluminum oxide	1344-28-1	85	Main material	0.144500	0.54%
	Zinc oxide	1314-13-2	5	Main material	0.008500	
	Silicone	Confidential	9	Main material	0.015300	
	Others	Confidential	1	Main material	0.001700	
Solder Ball	Tin	7440-31-5	96.5	Main material	1.687481	5.52%
	Silver	7440-22-4	3	Main material	0.052461	
	Copper	7440-50-8	0.5	Main material	0.008743	
Capacitor 1					0.054400	0.17%
	Titanium Dioxide	13463-67-7	15.11		0.008220	
	Misc		5.04		0.002742	
	Nickel	7440-02-0	33.44	Inner electrode	0.018191	
	Copper	7440-50-8	11.87	Out electrode	0.006457	
	Silicon Dioxide	7631-86-9	1.06		0.000577	
	Diboron trioxide; Boric	1303-86-2	0.26		0.000141	
	Nickel	7440-02-0	0.81	Plating1	0.000441	
	Tin	7440-31-5	2.19	Plating2	0.001191	
	Other		30.22		0.016440	
Capacitor 2	BaTiO3 type	12047-27-7	51.10	Ceramic	0.008997	0.06%
	Copper	7440-50-8	27.00	Inner electrode	0.004754	
	Nickel	7440-02-0	16.90	Out electrode	0.002976	
	Nickel	7440-02-0	2.00	Plating1	0.000352	
	Tin	7440-31-5	3.00	Plating2	0.000528	
Substrate					11.083183	34.98%
	Copper	7440-50-8	34.94		3.872646	
	Tin	7440-31-5	0.36		0.039899	
	Silver	7440-22-4	0.01		0.001108	
	Core	N/A	48.86		5.415062	
	ABF	N/A	14.66		1.624795	
Solder Mask	N/A	1.17		0.129673		

Revision History

Date	Version	Description of Revisions
8/30/2017	1.0	Initial Xilinx release.

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