



PK874(v1.1) July 3, 2019

100% Material Declaration Data Sheet for UltraScale+ FFVC/FFVD/FFVE900

Average Weight : 9.1767 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	0.459033	5.002%
					0.459033	
Bump	Tin	7440-31-5	98.20	basis	0.020119	0.223%
	Silver	7440-22-4	1.80	basis	0.000369	
					0.060800	0.663%
Underfill	Bisphenol F type liquid epoxy	9003-36-5	15.00	basis	0.009120	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00		0.006080	
	Bisphenol A type liquid epoxy	25068-38-6	5.00	basis	0.003040	
	Amine type hardener	trade secret	10.00		0.006080	
	Silicon dioxide	60676-86-0	58.00		0.035264	
	Carbon black	1333-86-4	1.00		0.000608	
	Additives	trade secret	1.00	basis	0.000608	
Solder paste					0.010048	0.109%
	Tin	7440-31-5	82.70	metal	0.008310	
	Silver	7440-22-4	2.70	metal	0.000271	
	Copper	7440-50-8	1.55	metal	0.000156	
	Additives	trade secret	13.05		0.001311	
Capacitor 1					0.001200	0.013%
	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 oxide	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	0.010%
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 oxide	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					3.946700	43.008%
	Copper	7440-50-8	98.35	Main material	3.881579	
Heat sink adhesive	Nickel	7440-02-0	1.65	Main material	0.065121	1.537%
					0.141000	
	Aluminium Oxide Al2O3	-	80.00	Main material	0.112800	
Solder ball	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.028200	
					0.751829	8.193%
Substrate	Tin	7440-31-5	96.50	Main material	0.725515	
	Silver	7440-22-4	3.00	Main material	0.022555	
	Copper	7440-50-8	0.50	Main material	0.003759	
					3.784682	41.242%
Substrate	Copper	7440-50-8	39.74		1.504033	
	Tin	7440-31-5	0.47		0.017788	
	Silver	7440-22-4	0.01		0.000378	
	Core	N/A	42.38		1.603948	
	ABF	N/A	15.89		0.601386	
	Solder Mask	N/A	1.51		0.057149	

Revision History

Date	Version	Description of Revisions
3/1/2017	1.0	Initial Xilinx release.
7/3/2019	1.1	Updated title.

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.