



PK876(v1.0) March 2, 2017

# 100% Material Declaration Data Sheet for UltraScale+ FFVA/FFVB/FFVC1156

Average Weight : 11.2167 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	0.459040	4.092%
					0.459040	
Bump	Tin	7440-31-5	98.20	basis	0.020119	0.183%
	Silver	7440-22-4	1.80	basis	0.000369	
					0.060800	0.542%
Underfill	Bisphenol F type liquid	9003-36-5	15.00	basis	0.009120	
	1,6-Bis(2,3-	27610-48-6	10.00	basis	0.006080	
	Bisphenol A type liquid	25068-38-6	5.00	basis	0.003040	
	Amine type hardener	trade secret	10.00	basis	0.006080	
	Silicon dioxide	60676-86-0	58.00	filler	0.035264	
	Carbon black	1333-86-4	1.00	color agent	0.000608	
	Additives	trade secret	1.00	additives	0.000608	
					0.012224	0.109%
Solder paste	Tin	7440-31-5	82.70	metal	0.010109	
	Silver	7440-22-4	2.70	metal	0.000330	
	Copper	7440-50-8	1.55	metal	0.000189	
	Additives	trade secret	13.05	flux	0.001595	
					0.001200	0.011%
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	
					0.000920	0.008%
Capacitor 2	BaTiO3 type	12047-27-7	61.70	Ceramic	0.000568	
	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	
					4.965400	44.268%
Heat sink	Copper	7440-50-8	98.35	Main material	4.883471	
	Nickel	7440-02-0	1.65	Main material	0.081929	
					0.152000	1.355%
Heat sink adhesive	Aluminium Oxide Al2O3	-	80.00	Main material	0.121600	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.030400	
					0.965683	8.609%
Solder ball	Tin	7440-31-5	96.50	Main material	0.931884	
	Silver	7440-22-4	3.00	Main material	0.028970	
	Copper	7440-50-8	0.50	Main material	0.004828	
					4.578945	40.823%
Substrate	Copper	7440-50-8	40.93		1.874162	
	Tin	7440-31-5	0.29		0.013279	
	Silver	7440-22-4	0.01		0.000458	
	Resin	N/A	0.13		0.005953	
	Core	N/A	41.69		1.908962	
	ABF	N/A	15.74		0.720726	
	Solder Mask	N/A	1.21		0.055405	

## Revision History

Date	Version	Description of Revisions
3/2/2017	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.