



PK934(v1.0) November 10, 2017

100% Material Declaration Data Sheet for 7 Series Virtex FFG1157 RoHS 6/6

Average Weight : 14.5218 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight (in grams)	Component % of total
Silicon die					0.397135	2.735%
	Silicon	7440-21-3	100.00	basis	0.397135	
Bump					0.015702	0.108%
	Tin	7440-31-5	98.20	basis	0.015419	
	Silver	7440-22-4	1.80	basis	0.000283	
					0.055400	0.381%
Underfill	Bisphenol F type liquid epoxy resin	9003-36-5	15.00	basis	0.008310	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	basis	0.005540	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.002770	
	Amine type hardener	trade secret	10.00	basis	0.005540	
	Silicon dioxide	60676-86-0	58.00	filler	0.032132	
	Carbon black	1333-86-4	1.00	color agent	0.000554	
	Additives	trade secret	1.00	additives	0.000554	
					0.006856	0.047%
Solder paste						
	Tin	7440-31-5	96.50	metal	0.006616	
	Silver	7440-22-4	3.00	metal	0.000206	
	Copper	7440-50-8	0.50	metal	0.000034	
					0.006880	0.047%
Capacitor 1	BaTiO3 type	1304-28-5	34.54	Ceramic	0.002376	
	Titanium dioxide	13463-67-7	17.27		0.001188	
	Misc	-	5.76		0.000396	
	Nickel	7440-02-0	31.90	Inner electrode	0.002195	
	Copper	7440-50-8	8.52	Out electrode	0.000586	
	Silicon dioxide	7631-86-9	0.76		0.000052	
	diboron trioxide; boric oxide	1303-86-2	0.19		0.000013	
	Nickel	7440-02-0	0.29	Plating1	0.000020	
	Tin	7440-31-5	0.77	Plating2	0.000053	
					0.003800	0.03%
Capacitor2	Barium oxide, obtained by calcining witherite	1304-28-5	37.01	Ceramic	0.001406	
	Titanium dioxide	13463-67-7	18.51		0.000703	
	Misc	-	6.17		0.000234	
	Nickel	7440-02-0	4.90	Inner Electrode	0.000186	
	Indium(III) oxide	1312-43-2	9.15		0.000348	
	Tin dioxide	18282-10-5	1.83		0.000070	
	Frits	65997-18-4	5.49		0.000209	
	Nickel	7440-02-0	1.83		0.000070	
	Copper	7440-50-8	12.05	Outer Electrode	0.000458	
	diboron trioxide; boric oxide	1303-86-2	0.27		0.000010	
	Silicon dioxide	7631-86-9	1.07		0.000041	
	Nickel	7440-02-0	0.49	Plating1	0.000019	
Tin	7440-31-5	1.23	Plating2	0.000047		
					0.000920	0.006%
Capacitor3	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	
					0.000300	0.002%
Capacitor 4	BaTiO3 type	1304-28-5	40.00	Ceramic	0.000120	
	Titanium dioxide	13463-67-7	20.00		0.000060	
	Misc	-	6.67		0.000020	
	Ni	7440-02-0	2.42	Inner electrode	0.000007	
	Cu	7440-50-8	20.73	Out electrode	0.000062	
	Silicon dioxide	7631-86-9	1.85		0.000006	
	diboron trioxide; boric oxide	1303-86-2	0.45		0.000001	
	Ni	7440-02-0	2.12	Plating1	0.000006	
Sn	7440-31-5	5.76	Plating2	0.000017		
					8.955100	61.667%
Heat sink						
	Copper	7440-50-8	98.35	Main material	8.807341	
	Nickel	7440-02-0	1.65	Main material	0.147759	
					0.153000	1.054%
Heat sink adhesive	Aluminium Oxide Al2O3	-	80.00	Main material	0.122400	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.030600	
					0.965683	6.650%
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	
					3.956487	27.245%
Substrate						
	Copper	7440-50-8	41.12		1.626907	
	Tin	7440-31-5	0.45		0.017804	
	Silver	7440-22-4	0.01		0.000396	
	Core	N/A	37.96		1.510883	
	ABF	N/A	18.67		0.738676	
	Solder Mask	N/A	1.79		0.070821	

Revision History

Date	Version	Description of Revisions
11/10/2017	1.0	Initial Xilinx release.