100% Material Declaration Data Sheet for Virtex-5 FFG1738 RoHS 6/6

PK862(v1.0) January 27, 2017

Average Weight : 15.1500 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight (in grams)	Component % of total
Silicon die					**0.457812**	**3.022%**
	Silicon	7440-21-3	100.00	basis	0.457812	
Bump					**0.013621**	**0.090%**
	Tin	7440-31-5	98.20	basis	0.013376	
	Silver	7440-22-4	1.80	basis	0.000245	
Underfill					**0.065000**	**0.429%**
	Bisphenol F type liquid epoxy	9003-36-5	15.00	basis	0.009750	
	1,6-Bis(2,3-	27610-48-6	10.00	basis	0.006500	
	Bisphenol A type liquid epoxy	25068-38-6	5.00	basis	0.003250	
	Amine type hardener	trade secret	10.00	basis	0.006500	
	Silicon dioxide	60676-86-0	58.00	filler	0.037700	
	Carbon black	1333-86-4	1.00	color agent	0.000650	
	Additives	trade secret	1.00	additives	0.000650	
Solder paste					**0.008836**	**0.058%**
	Tin	7440-31-5	96.50	metal	0.008527	
	Silver	7440-22-4	3.00	metal	0.000265	
	Copper	7440-50-8	0.50	metal	0.000044	
Capacitor 1					**0.003600**	**0.024%**
	BaTiO3 type	1304-28-5	37.46	Ceramic	0.001349	
	Titanium dioxide	13463-67-7	18.73		0.000674	
	Misc	-	6.24		0.000225	
	Nickel	7440-02-0	17.95	Inner electrode	0.000646	
	Copper	7440-50-8	15.88	Out electrode	0.000572	
	Silicon dioxide	7631-86-9	1.41		0.000051	
	diboron trioxide; boric oxide	1303-86-2	0.35		0.000013	
	Nickel	7440-02-0	0.54	Plating1	0.000019	
	Tin	7440-31-5	1.44	Plating2	0.000052	
Capacitor2					**0.006880**	**0.045%**
	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	Outer 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	
Heat sink					**7.510000**	**49.571%**
	Copper	7440-50-8	98.35	Main material	7.386085	
	Nickel	7440-02-0	1.65	Main material	0.123915	
Heat sink adhesive					**0.167000**	**1.102%**
	Aluminium Oxide Al2O3	-	80.00	Main material	0.133600	
	Dimethyl siloxane, dimethylvinyl-	68083-19-2	20.00	Main material	0.033400	
Solder ball					**1.451866**	**9.583%**
	Tin	7440-31-5	95.50	Main material	1.386532	
	Silver	7440-22-4	4.00	Main material	0.058075	
	Copper	7440-50-8	0.50	Main material	0.007259	
Substrate					**5.465385**	**36.075%**
	Copper	7440-50-8	31.20		1.705202	
	Tin	7440-31-5	0.38		0.020768	
	Silver	7440-22-4	0.02		0.001093	
	Resin	N/A	0.10		0.005465	
	Core	N/A	46.24		2.527194	
	PP	N/A	6.06		0.331202	
	ABF	N/A	14.10		0.770619	
	Solder Mask	N/A	1.90		0.103842	

Revision History

Date	Version	Description of Revisions
1/27/2017	1.0	Initial Xilinx release.

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