100% Material Declaration Data Sheet for Virtex-5 FFG665 RoHS 6/6

PK846(v1.0) November 30, 2016

Average Weight : 6.0600 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight / substance weight (in grams)	Component % of total
Silicon die					**0.422014**	**6.964%**
	Silicon	7440-21-3	100.00	basis	0.422014	
Bump					**0.013108**	**0.216%**
	Tin	7440-31-5	98.20	basis	0.012872	
	Silver	7440-22-4	1.80	basis	0.000236	
Underfill					**0.060400**	**0.997%**
	Bisphenol F type liquid epoxy	9003-36-5	15.00	basis	0.009060	
	1,6-Bis(2,3-epoxypropoxy)naphthalene	27610-48-6	10.00	basis	0.006040	
	Bisphenol A type liquid epoxy	25068-38-6	5.00	basis	0.003020	
	Amine type hardener	trade secret	10.00	basis	0.006040	
	Silicon dioxide	60676-86-0	58.00	filler	0.035032	
	Carbon black	1333-86-4	1.00	color agent	0.000604	
	Additives	trade secret	1.00	additives	0.000604	
Solder paste					**0.004816**	**0.079%**
	Tin	7440-31-5	96.50	metal	0.004647	
	Silver	7440-22-4	3.00	metal	0.000144	
	Copper	7440-50-8	0.50	metal	0.000024	
Capacitor 1					**0.000930**	**0.015%**
	Barium oxide, obtained by calcining witherite	1304-28-5	31.67	Ceramic	0.000295	
	Titanium dioxide	13463-67-7	15.83		0.000147	
	Misc	-	5.28		0.000049	
	Nickel	7440-02-0	26.67	Inner electrode	0.000248	
	Copper	7440-50-8	15.10	Out electrode	0.000140	
	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	
Capacitor2					**0.003600**	**0.059%**
	Barium oxide, obtained by calcining witherite	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	Outer 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	
Heat sink					**3.060000**	**50.495%**
	Copper	7440-50-8	98.35	Main material	3.009510	
	Nickel	7440-02-0	1.65	Main material	0.050490	
Heat sink adhesive					**0.114000**	**1.881%**
	Aluminium Oxide Al2O3	-	80.00	Main material	0.091200	
	Dimethyl siloxane, dimethylvinyl-terminated	68083-19-2	20.00	Main material	0.022800	
Solder ball					**0.557021**	**9.192%**
	Tin	7440-31-5	95.50	Main material	0.531955	
	Silver	7440-22-4	4.00	Main material	0.022281	
	Copper	7440-50-8	0.50	Main material	0.002785	
Substrate					**1.824111**	**30.101%**
	Copper	7440-50-8	36.46		0.665071	
	Tin	7440-31-5	0.99		0.018059	
	Silver	7440-22-4	0.07		0.001277	
	Resin	N/A	0.12		0.002189	
	Core	N/A	36.40		0.663976	
	PP	N/A	7.10		0.129512	
	ABF	N/A	16.52		0.301343	
	Solder Mask	N/A	2.34		0.042684	

Revision History

Date	Version	Description of Revisions
11/30/2016	1.0	Initial Xilinx release.

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