



PK402 (v1.1) November 19,  
2010

## 100% Material Declaration Data Sheet FF484

**Average Weight: 3.9959g**

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
<b>Silicon Die (FPGA)</b>				Silicon IC	<b>0.340000</b>	<b>8.509</b>
	Doped silicon	7440-21-3	100.00		0.340000	
<b>Solder Bump</b>				Die to package	<b>0.173000</b>	<b>4.329</b>
	Tin	7440-31-5	63.00		0.108990	
	Lead	7439-92-1	37.00		0.064010	
<b>Die Underfill</b>					<b>0.130000</b>	<b>3.253</b>
	Bisphenol F-type liquid epoxy resin	9003-36-5	20.00	Basis	0.026000	
	Phenolic resin	Trade secret	15.00	Basis	0.019500	
	Bisphenol A-type liquid epoxy resin	25068-38-6	2.50	Basis	0.003250	
	Amine type accelerator	Trade secret	2.50	Basis	0.003250	
	Silicon dioxide	60676-86-0	57.00	Basis	0.074100	
	Carbon black	1333-86-4	0.50	Basis	0.000650	
	Additives	Trade secret	2.50	Basis	0.003250	

Component	Substance Description	CAS Number or Description	Percentage of Component	Use in Product	Component Weight/ Substance Weight (grams)	Component Percent of Total
<b>Substrate</b>					<b>1.127003</b>	<b>28.204</b>
<b>Plating</b>	Copper	7440-50-8	29.28	Main material	0.329995	
	Nickel	7440-02-0	0.94	Main material	0.010586	
	Gold	7440-57-5	0.20	Main material	0.002293	
<b>Bump</b>	Lead	7439-92-1	0.94	Main material	0.010594	
	Tin	7440-31-5	1.60	Main material	0.018038	
<b>Copper Foil</b>	Copper	7440-50-8	5.39	Main material	0.060778	
<b>Core</b>	Fiberglass	65997-17-3	22.53	Main material	0.253920	
	Epoxy resin	N/A	22.53	Main material	0.253920	
<b>ABF</b>	Bisphenol A-type epoxy resin	25068-38-6	3.76	Main material	0.042320	
	Cyclohexane	108-94-1	3.76	Main material	0.042320	
	N, N-dimethylformamide	68-12-2	3.76	Main material	0.042320	
	Silica powder (Silicon dioxide)	7631-86-9	3.76	Main material	0.042320	
<b>Solder Mask</b>	Levelling agents and others	N/A	0.01	Main material	0.000141	
	Phthalocyanine blue, organic pigment	N/A	0.00	Main material	0.000035	
	Amine compound	N/A	0.01	Main material	0.000070	
	Barium sulfate	7727-43-7	0.21	Main material	0.002393	
	Silica	15468-32-3	0.11	Main material	0.001197	
	Talc	14807-96-6	0.11	Main material	0.001197	
	Diethylene glycol monoethyl ether acetate	N/A	0.06	Main material	0.000634	
	Dipropylane glycol monomethyl ether	N/A	0.05	Main material	0.000546	
	Dipropylane glycol monomethyl ether acetate	N/A	0.14	Main material	0.001601	
	High boiling-point petroleum solvent	N/A	0.12	Main material	0.001337	
	Aromatic carbonyl compound	N/A	0.04	Main material	0.000475	
	Acrylic monomer	N/A	0.05	Main material	0.000598	
	Acrylic resin	N/A	0.42	Main material	0.004699	
	Epoxy resin	N/A	0.24	Main material	0.002675	
<b>Solder Paste</b>					<b>0.010500</b>	<b>0.263</b>
	Tin	7440-31-5	96.50	Basis	0.010133	
	Silver	7440-22-4	3.00	Basis	0.000315	
	Copper	7440-50-8	0.50	Basis	0.000053	

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<b>Capacitor</b>					<b>0.028000</b>	<b>0.701</b>
	Ceramic (BaTiO3 type)	Trade secret	64.60	Ceramic	0.018088	
	Inner electrode (Ni)	7440-02-0	22.00	Inner electrode	0.006160	
	Outer electrode (Cu)	7440-50-8	12.10	Outer electrode	0.003388	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000140	
	Plating2 (Sn)	7440-31-5	0.80	Plating2	0.000224	
<b>Capacitor</b>					<b>0.036000</b>	<b>0.901</b>
	Ceramic (BaTiO3 type)	Trade secret	67.40	Ceramic	0.024264	
	Inner electrode (Ni)	7440-02-0	17.00	Inner electrode	0.006120	
	Outer electrode (Cu)	7440-50-8	13.80	Outer electrode	0.004968	
	Plating1 (Ni)	7440-02-0	0.50	Plating1	0.000180	
	Plating2 (Sn)	7440-31-5	1.30	Plating2	0.000468	
<b>Capacitor</b>					<b>0.001800</b>	<b>0.045</b>
	Ceramic (BaTiO3 type)	Trade secret	61.80	Ceramic	0.001112	
	Inner electrode (Ni)	7440-02-0	27.00	Inner electrode	0.000486	
	Outer electrode (Cu)	7440-50-8	9.90	Outer electrode	0.000178	
	Plating1 (Ni)	7440-02-0	0.40	Plating1	0.000007	
	Plating2 (Sn)	7440-31-5	0.90	Plating2	0.000016	
<b>Heat Sink</b>					<b>1.354700</b>	<b>33.902</b>
	Copper	7440-50-8	97.25	Main material	1.317446	
	Nickel	7440-02-0	2.75	Main material	0.037254	
<b>Heat Sink Adhesive</b>					<b>0.140000</b>	<b>3.504</b>
	Bisphenol A-type liquid epoxy resin	25068-38-6	2.50	Main material	0.003500	
	Bisphenol F-type liquid epoxy resin	9003-36-5	25.00	Main material	0.035000	
	Phenolic resin	9003-35-4	15.00	Main material	0.021000	
	Silicon dioxide	60676-86-0	54.50	Main material	0.076300	
	Carbon black	1333-86-4	0.50	Main material	0.000700	
	Additive	2530-83-8	2.50	Main material	0.003500	
<b>Solder Balls</b>					<b>0.654927</b>	<b>16.390</b>
	Tin	7440-31-5	67.00	Base metal	0.412604	
	Lead	7439-92-1	37.00	Base metal	0.242323	

## Revision History

The following table shows the revision history for this document.

Date	Version	Description of Revisions
05/19/10	1.0	Initial Xilinx release.
11/19/10	1.1	1. Correct CAS# for N, Ndimethylformamide to 68-12-2 2. Change percentage of substrate component to actual percentage values 3. Add component "Amine type accelerator" as component of "Die Underfill"

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