



100 – FBGA (11 x 11 x 1.4 mm) Non Pb-Free Package

PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

Cypress Package Code	BB	Body Size (mil/mm)	11 x 11 x 1.4 mm
Package Weight – Site 1	B1: 297.7300 mg B2: 221.0478	Package Weight – Site 2	N/A

SUMMARY

The 100-FBGA is a Non Pb-Free package. Standard components (Non Pb-Free) currently in production are RoHS 5 compliant. Standard components may contain Pb, but do not contain the other 5 substances (above allowable levels).

ASSEMBLY Site 1 – Package Qualification Report # 011707, 013702, 120612 (Note 1)

I. DECLARATION OF PACKAGED UNITS

A. BANNED SUBSTANCES

Materials from Level A of the EIA/JIG/JGPSSI/EICTA Material Composition Declaration Guide and EU RoHS are listed in section 1A. Materials from this list may be contained or intentionally added to this product, as it is not considered Pb-Free or RoHS compliant.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note 2)
Cadmium and Cadmium Compounds	0	< 5.0	As per MSDS
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	14.87	49,945	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	
Azo colorants	0	0	
Ozone Depleting Substances	0	0	
Polychlorinated Biphenyls (PCBs)	0	0	
Polychlorinated Napthalenes	0	0	
Radioactive Substances	0	0	
Shortchain Chlorinated Paraffins	0	0	
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	
Tributyl Tin Oxide (TBTO)	0	0	
Formaldehyde	0	0	

Note 1: Qualification reports are available at www.cypress.com. Access them by doing a Search on the Report #.

Note 2: Report available from Cypress Sales Offices or Distributors.

Note 3: Materials/substances not declared in Section I-A and I-B of this document are considered "non-existent in the product" or a natural impurity. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor PMDD's are calculated using MSDS, Material Analysis Reports and Cypress Assembly site information.

Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

B1. MATERIAL COMPOSITION (Note 3)

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% Weight of Substance per Homogeneous Material	PPM	% Weight of Substance per Package
Substrate	Base Material	SiO ₂	60676-86-0	10.9100	11.0013%	36,644	3.6644%
		Acrylic	Proprietary, 29690-82-2	9.9200	10.0030%	33,319	3.3319%
		Epoxy	68541-56-0, 25068-38-6	7.9300	7.9964%	26,635	2.6635%
		Bisphenol	13676-54-5	14.8800	15.0045%	49,978	4.9978%
		Triazol	25722-66-1	17.3500	17.4952%	58,274	5.8274%
		Cu	7440-50-8	36.0900	36.3921%	121,230	12.1217%
		Ni	7440-02-0	1.4900	1.5025%	5,005	0.5005%
		Au	7440-57-5	0.5500	0.5546%	1,847	0.1847%
Solder Ball	External Plating	Br	7726-95-6	0.0500	0.0504%	168	0.0168%
		Sn	7440-31-5	25.3100	62.9915%	85,010	8.5010%
Die Attach	Adhesive	Pb	7439-92-1	14.8700	37.0085%	49,945	4.9945%
		Silver	7440-22-4	14.2700	76.4737%	47,929	4.7929%
		Epoxy Resin	Proprietary	1.0300	5.5198%	3,460	0.3460%
		Functionalized Ester	Proprietary	1.0300	5.5198%	3,460	0.3460%
Die	Circuit	Diester	Proprietary	2.3300	12.4866%	7,826	0.7826%
Wire	Interconnect	Si	7440-21-3	15.8100	100.0000%	53,102	5.3102%
Mold Compound	Encapsulation	Au	7440-57-5	3.3600	100.0000%	11,272	1.1285%
		Silica (fused)	60676-86-0	81.0200	67.2086%	272,126	27.2126%
		Epoxy resin	Proprietary	12.0600	10.0041%	40,506	4.0506%
		Phenolic resin	Proprietary	6.0300	5.0021%	20,253	2.0253%
		Silica	7631-86-9	18.0800	14.9979%	60,726	6.0726%
		Antimony Pentoxide	13149-60-9	0.6600	0.5475%	2,217	0.2217%
		Brominated compound	Proprietary	0.6600	0.5475%	2,217	0.2217%
		Silica (quartz)	14808-60-7	0.6000	0.4977%	2,015	0.2015%
		Carbon black pigment	1333-86-4	0.6000	0.4977%	2,015	0.2015%
		Silica (Cristobalite)	14464-46-1	0.6000	0.4977%	2,015	0.2015%
		Antimony Trioxide	1309-64-4	0.2400	0.1991%	806	0.0806%

Package Weight (mg): 297.7300

% Total: 100.0000%

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.



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B2. MATERIAL COMPOSITION (Note 3) Using Copper-Palladium Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% Weight of Substance per Homogeneous Material	PPM	% Weight of Substance per Package
Substrate	Base Material	SiO ₂	60676-86-0	10.9100	11.0013%	49,356	4.9356%
		Acrylic	Proprietary, 29690-82-2	9.9200	10.0030%	44,877	4.4877%
		Epoxy	68541-56-0 25068-38-6	7.9300	7.9964%	35,875	3.5875%
		Bisphenol	13676-54-5	14.8800	15.0045%	67,316	6.7316%
		Triazol	25722-66-1	17.3500	17.4952%	78,490	7.8490%
		Cu	7440-50-8	36.0900	36.3921%	163,268	16.3268%
		Ni	7440-02-0	1.4900	1.5025%	6,741	0.6741%
		Au	7440-57-5	0.5500	0.5546%	2,488	0.2488%
		Br	7726-95-6	0.0500	0.0504%	226	0.0226%
Solder Ball	External Plating	Sn	7440-31-5	25.3100	62.9915%	114,500	11.4500%
		Pb	7439-92-1	14.8700	37.0085%	67,271	6.7271%
Die Attach	Adhesive	Silica, amorphous, fused	60676-86-0	2.1102	48.5000%	9,546	0.9546%
		Bismaleimide monomer	Trade Secret	1.4576	33.5000%	6,594	0.6594%
		Acrylate monomer	Trade Secret	0.3263	7.5000%	1,476	0.1476%
		Epoxy resin	Trade Secret	0.3263	7.5000%	1,476	0.1476%
		Acrylic resin	Trade Secret	0.1305	3.0000%	590	0.0590%
Die	Circuit	Si	7440-21-3	15.8100	100.0000%	71,523	7.1523%
Wire	Interconnect	Copper (Cu)	7440-50-8	2.3228	97.3091%	10,508	1.0508%
		Palladium	7440-50-3	0.0642	2.6909%	290	0.0290%
Mold Compound	Encapsulation	Silica	60676-86-0	53.0576	89.7000%	240,028	24.0028%
		Epoxy resin	Trade Secret	3.2532	5.5000%	14,717	1.4717%
		Phenol resin	Trade Secret	2.6617	4.5000%	12,041	1.2041%
		Carbon Black	1333-86-4	0.1774	0.3000%	803	0.0803%

Package Weight (mg): **221.0478**

% Total: **100.0000%**

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

II. DECLARATION OF PACKAGING / INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-COVT-R
	Carrier tape	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-CART-R
	Plastic Reel	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-PLRL-R
Tray	Tray	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-TRAY-R
Tube	Plastic Tube	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	End Plug	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	End Pin	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Others	Moisture Barrier bag	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-MBBG-R
	Shielding bag	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-SBAG-R
	Protective Band	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-PROB-R
	Shipping and inner/ pizza box	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-ABOX-R

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Document History Page

Document Title: 100 - FBGA (11X11X1.4MM) NON PB-FREE PACKAGE MATERIAL DECLARATION
DATASHEET
Document Number: 001-05594

Rev	ECN No.	Orig. of Change	Description of Change
**	405951	YXP	New specification
*A	2583782	MAHA	1. Updated Cypress logo. 2. Added percent weight per homogeneous material and weight of substance per package in the material composition table for Assembly site 1. 3. Deleted ion impurities on the material composition table of assembly site 1. 4. Added the CAS number of bromine. 5. Changed the CAS number of gold. 6. Updated and added Lead, Cr+VI, PBB and PBDE on the Declaration of Packaging/Indirect Materials table for assembly site 1.
		DCON	Changed CML to WEB in distribution list.
*B	3052606	MAHA	Added the weight of Lead on Table A.
*C	3438583	MAHA	Expressed the weight by mg, package weight, % weight of substance per Homogeneous material, and % weight of substance per package in four decimal places.
*D	3596403	EBZ	Added package weight B2 for Site 1. Added Material Composition table B2 using copper palladium wire material for Site 1. Added reference QTP #120612 for Site 1.

Distribution: WEB

Posting: None

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