



209 – FBGA (14x22x1.76mm) Non Pb-Free Package

PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

Cypress Package Code	BB	Body Size (mil/mm)	14 x 22 x 1.76mm
Package Weight – Site 1	B1: 1,182 mg B2: 1138.4096 mg	Package Weight – Site 2	N/A

SUMMARY

The 209-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 # 050702, #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	73.64	62,306	
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 Naphthalenes	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	

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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 Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	SiO ₂	60676-86-0	41.70	11.00%	35,282	3.53%
		Acrylic	Proprietary, 29690-82-2	37.91	10.00%	32,075	3.21%
		Epoxy	68541-56-0, 25068-38-6	30.33	8.00%	25,662	2.57%
		Bisphenol	13676-54-5	56.86	15.00%	48,109	4.81%
		Triazol	25722-66-1	66.34	17.50%	56,130	5.61%
		Cu	7440-50-8	138.02	36.40%	116,780	11.68%
		Ni	7440-02-0	5.69	1.50%	4,814	0.48%
		Au	7440-57-5	2.08	0.55%	1,760	0.18%
Solder Ball	External Plating	Br	7726-95-6	0.21	0.06%	176	0.02%
		Sn	7440-31-5	125.40	63.00%	106,100	10.61%
Die Attach	Adhesive	Pb	7439-92-1	73.64	37.00%	62,306	6.23%
		Fused silica	60676-86-0	62.58	54.00%	52,949	5.29%
		Diester	Proprietary	31.87	27.50%	26,965	2.70%
		Epoxy Resin	Proprietary	6.37	5.50%	5,390	0.54%
		Functionalized esters	Proprietary	11.59	10.00%	9,806	0.98%
Die	Circuit	Polymeric resin	Proprietary	3.48	3.00%	2,944	0.29%
		Si	7440-21-3	77.14	100.00%	65,268	6.53%
Wire	Interconnect	Au	7440-57-5	5.36	100.00%	4,534	0.45%
Mold Compound	Encapsulation	Silica Fused	60676-86-0	360.74	89.00%	305,224	30.52%
		Epoxy resin	Proprietary	22.29	5.50%	18,862	1.89%
		Phenol resin	Proprietary	22.29	5.50%	18,862	1.89%

Package Weight (mg): **1,182**

% Total: **100**

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

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

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	SiO ₂	60676-86-0	41.6999	11.0000%	36630	3.6630%
		Acrylic	Proprietary, 29690-82-2	37.9090	10.0000%	33300	3.3300%
		Epoxy	68541-56-0, 25068-38-6	30.3272	8.0000%	26640	2.6640%
		Bisphenol	13676-54-5	56.8635	15.0000%	49950	4.9950%
		Triazol	25722-66-1	66.3408	17.5000%	58275	5.8275%
		Cu	7440-50-8	137.9888	36.4000%	121212	12.1212%
		Ni	7440-02-0	5.6864	1.5000%	4995	0.4995%
		Au	7440-57-5	2.0850	0.5500%	1832	0.1832%
		Br	7726-95-6	0.1895	0.0500%	166	0.0166%
Solder Ball	External Plating	Sn	7440-31-5	125.4000	63.0024%	110154	11.0154%
		Pb	7439-92-1	73.6400	36.9976%	64687	6.4687%
Die Attach	Adhesive	Silica, amorphous, fused	60676-86-0	36.8940	50.0000%	32408	3.2408%
		Bismaleimide monomer	Trade Secret	24.3500	33.0000%	21390	2.1390%
		Acrylate monomer	Trade Secret	4.9807	6.7500%	4375	0.4375%
		Epoxy resin	Trade Secret	4.9807	6.7500%	4375	0.4375%
		Acrylic resin	Trade Secret	2.5826	3.5000%	2269	0.2269%
Die	Circuit	Si	7440-21-3	77.1400	100.0000%	67761	6.7761%
Wire	Interconnect	Copper (Cu)	7440-57-5	3.9307	97.5000%	3453	0.3453%
		Palladium (Pd)	7440-50-3	0.1008	2.5000%	89	0.0089%
Mold Compound	Encapsulation	Silica	60676-86-0	364.7880	90.0000%	320437	32.0437%
		Epoxy Resin	Undisclosed	22.2926	5.5000%	19582	1.9582%
		Phenol Resin	Undisclosed	17.0234	4.2000%	14954	1.4954%
		Carbon Black	1333-86-4	1.2160	0.3000%	1068	0.1068%

Package Weight (mg): 1138.4096

% 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
	Desiccant	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	CoA-DESS-R

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Document History Page

Document Title: 209 - FBGA (14x22x1.76mm) Non Pb-Free PMDD
Document Number: 001-06133

Rev.	ECN No.	Orig. of Change	Description of Change
**	413957	YXP	New specification
*A	2602510	MAHA	1.Updated Cypress logo. 2. Deleted ion impurities from the material composition table of assembly site 1. 3. Added percent weight per homogeneous material and weight of substance per package in the material composition table for assembly site 1. 4. 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	3093134	MAHA	Corrected the CAS numbers of Au and Br on the material composition table.
*C	3608371	EBZ	Added package weight B2 for Site 1. Added material composition table B2 using copper palladium wire material for Site 1.

Distribution: WEB

Posting: None

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