



288 – FBGA (19 x 19 x 1.7 mm) Non Pb-Free Package

PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

Cypress Package Code	BB	Body Size (mil/mm)	19x19x1.7 mm
Package Weight – Site 1	1,150.2000 mg	Package Weight – Site 2	N/A

SUMMARY

The 288-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 (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	42.81	37,220	
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.

B. 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	48.9005	11.0000%	42,515	4.2515%
		Acrylic	Proprietary, 29690-82-2	44.4550	10.0000%	38,650	3.8650%
		Epoxy	68541-56-0, 25068-38-6	35.5640	8.0000%	30,920	3.0920%
		Bisphenol	13676-54-5	66.6825	15.0000%	57,975	5.7975%
		Triazol	25722-66-1	77.7963	17.5000%	67,637	6.7637%
		Cu	7440-50-8	161.8162	36.4000%	140,685	14.0685%
		Ni	7440-02-0	6.6683	1.5000%	5,797	0.5797%
		Au	7440-57-5	2.4450	0.5500%	2,126	0.2126%
		Br	7726-95-6	0.2223	0.0500%	193	0.0193%
Solder Ball	External Plating	Sn	7440-31-5	72.8973	63.0000%	63,378	6.3378%
		Pb	7439-92-1	42.8127	37.0000%	37,222	3.7222%
Die Attach	Adhesive	Silver	7440-22-4	48.3021	76.5000%	41,995	4.1995%
		Epoxy Resin	Proprietary	3.4727	5.5000%	3,019	0.3019%
		Functionalized Ester	Proprietary	3.4727	5.5000%	3,019	0.3019%
		Diester	Proprietary	7.8925	12.5000%	6,862	0.6862%
Die	Circuit	Si	7440-21-3	41.4400	100.0000%	36,029	3.6029%
Wire	Interconnect	Au	7440-57-5	10.2700	100.0000%	8,929	0.8929%
Mold Compound	Encapsulation	Silica (fused)	60676-86-0	362.7312	76.3500%	315,364	31.5364%
		Epoxy resin	Proprietary	47.5090	10.0000%	41,305	4.1305%
		Phenolic resin	Proprietary	23.7545	5.0000%	20,652	2.0652%
		Mixed Siloxanes	Proprietary	23.7545	5.0000%	20,652	2.0652%
		Antimony Pentoxide	1314-60-9	3.8007	0.8000%	3,304	0.3304%
		Brominated epoxy resin	Proprietary	4.9884	1.0500%	4,337	0.4337%
		Silica (quartz)	14808-60-7	2.1379	0.4500%	1,859	0.1859%
		Carbon black pigment	1333-86-4	2.3754	0.5000%	2,065	0.2065%
		Silica (Cristobalite)	14464-46-1	2.1379	0.4500%	1,859	0.1859%
		Antimony Trioxide	1309-64-4	1.9004	0.4000%	1,652	0.1652%

Package Weight (mg): **1,150.2000**

% Total: **100.0000**

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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	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	-----	-----	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	Shielding bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-SBAG -R
	Moisture Barrier bag	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-MBBG-R
	Protective Band	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-PROB-R
	Shipping and Inner Box	< 10.0	< 4.0	< 4.0	< 5.0	-----	-----	CoA-ABOX-R
	Desiccant	< 10.0	< 2.0	< 2.0	< 1.0	< 3.0	< 3.0	CoA-DESS-R
	Bubble Pack	< 2.0	< 2.0	< 2.0	< 2.0	< 100.0	< 90.0	CoA-BUBP-R

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Document History Page

Document Title: 288 - FBGA (19x19x1.7mm) NON PB-FREE PACKAGE MATERIAL DECLARATION
DATASHEET
Document Number: 001-05548

Rev.	ECN No.	Orig. of Change	Description of Change
**	405290	YXP	New specification
*A	2579759	MAHA DCon	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. Corrected the spelling of antimony trioxide 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. Removed CML with WEB in distribution list.
*B	2788407	MAHA	Corrected CAS number of Gold for assembly site 1. Added CAS number of Bromine for assembly site 1.
*C	3044661	MAHA	Added the weight of Lead on Table A.
*D	3400657	JARG	Updated the material composition table to reflect 4 decimal places on values.
*E	3770791	JARG	Change Title format to All Caps. Fix Material Composition Table.

Distribution: WEB

Posting: None

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