



## 48-FBGA (8 x 9.5 mm) Stack Die Pb-Free Package

### kataPACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

<b>Cypress Package Code</b>	BK	<b>Body Size (mil/mm)</b>	8 x 9.5 mm
<b>Package Weight – Site 1</b>	273.0300 mg	<b>Package Weight – Site 2</b>	N/A

#### SUMMARY

The 48-BGA Stack Die Pb-Free package is compliant to RoHS. Cypress Ordering Part Numbers containing an “X” (e.g. CY7C1328G-133AXI, CY2308SXC-1HT) meet the Directive 2002/95/EC (RoHS) requirement.

#### ASSEMBLY Site 1 – Package Qualification Report #s 052502 (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. Listed in the table below are materials that are neither contained nor intentionally added to this product.

Substances / Compounds	Weight by mg	PPM	Analysis Report (Note2)
Cadmium and Cadmium Compounds	0	< 5.0	CoA-BK48J-G
Hexavalent Chromium and its Compounds	0	< 5.0	
Lead and Lead Compounds	0	< 5.0	
Mercury and Mercury Compounds	0	< 5.0	
Polybrominated Biphenyls (PBB)	0	< 5.0	
Polybrominated Diphenylethers (PBDE)	0	< 5.0	
Asbestos	0	0	As per MSDS
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	

Note 1: Qualification reports are available at [www.cypress.com](http://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 Homogenous material	PPM	% weight of substance per package
Substrate	Base Material	SiO <sub>2</sub>	60676-86-0	4.4100	11.0500%	16,152	1.6152%
		Acrylic	Trade Secret	3.9900	10.0000%	14,614	1.4614%
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	3.1900	7.9900%	11,684	1.1684%
		Bisphenol	13676-54-5	5.9900	15.0100%	21,939	2.1939%
		Triazol	25722-66-1	6.9800	17.4900%	25,565	2.5565%
		Cu	7440-50-8	14.5200	36.3900%	53,181	5.3181%
		Ni	7440-02-0	0.6000	1.5000%	2,198	0.2198%
		Au	7440-57-5	0.2200	0.5500%	806	0.0806%
Solder Ball	External Plating	Sn	7440-31-5	4.8000	95.4300%	17,580	1.7580%
		Ag	7440-22-4	0.2000	3.9800%	733	0.0733%
		Cu	7440-50-8	0.0300	0.6000%	110	0.0110%
Die Attach	Adhesive	Epoxy Resin	Trade Secret	3.5200	3.8400%	12,892	1.2892%
		Diester	Trade Secret	17.6200	19.2300%	64,535	6.4535%
		Functionalized esters	Trade Secret	6.4100	7.0000%	23,477	2.3477%
		Polymeric resin	Trade Secret	1.9200	2.1000%	7,032	0.7032%
		Fused silica	60676-86-0	34.6000	37.7700%	126,726	12.6726%
Die attach	Adhesive	Proprietary filler	9002-84-0	12.3900	13.5300%	45,380	4.5380%
		Proprietary Bismaleimide	Trade Secret	9.6400	10.5200%	35,307	3.5307%
		Proprietary Methacrylates	Trade Secret	4.1300	4.5100%	15,127	1.5127%
		Proprietary Divinyl Ether	Trade Secret	1.1000	1.2000%	4,029	0.4029%
		Proprietary polymer	Trade Secret	0.2800	0.3100%	1,026	0.1026%
Die	Circuit	Si	7440-21-3	41.5200	100.0000%	152,070	15.2070%
Wire	Interconnect	Au	7440-57-5	2.0600	100.0000%	7,545	0.7545%
Mold Compound	Encapsulation	Silica Fused	60676-86-0	82.6900	89.0000%	302,860	30.2860%
		Epoxy resinA	Trade Secret	5.1100	5.5000%	18,716	1.8716%
		Phenol resin	Trade Secret	5.1100	5.5000%	18,716	1.8716%

Package Weight (mg): **273.0300**

% 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
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: 48 - FBGA (8X9.5MM) STACK DIE PB-FREE PACKAGE MATERIAL DECLARATION  
DATASHEET (PMDD)  
Document Number: 001-56673

Rev.	ECN No.	Orig. of Change	Description of Change
**	2770302	MAHA	New document
*A	3194923	MAHA	Deleted the information for tubes on Table II. DECLARATION OF PACKAGING / INDIRECT MATERIALS.
*B	3596630	LMAG	Updated the material composition table for assembly site1 and to reflect four decimal places on values.

Distribution: WEB

Posting: None

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