



36 – FBGA (7 x 8.5 x 1.2 mm) Non Pb-Free Package

PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

Cypress Package Code	BA	Body Size (mil/mm)	7 x 8.5 x 1.2 mm
Package Weight – Site 1	B1: 165.0400 mg B2: 157.1686 mg	Package Weight – Site 2	N/A

SUMMARY

The 36-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, 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	0	9,634	
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	

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)
Using Gold wire material**

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	5.2492	11.0000%	31,806	3.1806%
		Acrylic	Proprietary, 29690-82-2	4.7720	10.0000%	28,914	2.8914%
		Epoxy	68541-56-0, 25068-38-6	3.8224	8.0100%	23,160	2.3160%
		Bisphenol	13676-54-5	7.1580	15.0000%	43,371	4.3371%
		Triazol	25722-66-1	8.3510	17.5000%	50,600	5.0600%
		Cu	7440-50-8	17.3605	36.3800%	105,190	10.5190%
		Ni	7440-02-0	0.7206	1.5100%	4,366	0.4366%
		Au	7440-57-5	0.2577	0.5400%	1,561	0.1561%
Solder Ball	External Plating	Br	7726-95-6	0.0286	0.0600%	174	0.0173%
		Sn	7440-31-5	2.7001	62.9400%	16,360	1.6360%
Die Attach	Adhesive	Pb	7439-92-1	1.5899	37.0600%	9,633	0.9633%
		Silver	7440-22-4	21.3894	76.5000%	129,601	12.9601%
		Epoxy Resin	Proprietary	1.5406	5.5100%	9,335	0.9335%
		Functionalized Ester	Proprietary	1.5406	5.5100%	9,335	0.9335%
Die	Circuit	Diester	Proprietary	3.4894	12.4800%	21,143	2.1143%
		Si	7440-21-3	24.3700	100.0000%	147,661	14.7661%
Wire	Interconnect	Au	7440-57-5	1.4200	100.0000%	8,604	0.8604%
Mold Compound	Encapsulation	Silica (fused)	60676-86-0	41.4960	70.0000%	251,430	25.1431%
		Epoxy resin	Proprietary	7.4100	12.5000%	44,898	4.4898%
		Phenolic resin	Proprietary	2.9581	4.9900%	17,923	1.7923%
		Silica	7631-86-9	2.9581	4.9900%	17,923	1.7923%
		Mixed siloxanes	Proprietary	1.1856	2.0000%	7,184	0.7184%
		Brominated compound	Proprietary	1.1915	2.0100%	7,220	0.7220%
		Silica (quartz)	14808-60-7	0.5928	1.0000%	3,592	0.3592%
		Carbon black pigment	1333-86-4	0.3023	0.5100%	1,832	0.1832%
		Silica (Cristobalite)	14464-46-1	0.5928	1.0000%	3,592	0.3592%
		Antimony Trioxide	1309-64-4	0.5928	1.0000%	3,592	0.3592%

Package Weight (mg): 165.0400

% 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.

**B2. MATERIAL COMPOSITION (Note 3)
Using Copper-Palladium wire material**

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	5.2492	11.0000%	33,399	3.3399%
		Acrylic	Proprietary, 29690-82-2	4.7720	10.0000%	30,362	3.0362%
		Epoxy	68541-56-0, 25068-38-6	3.8224	8.0100%	24,320	2.4320%
		Bisphenol	13676-54-5	7.1580	15.0000%	45,543	4.5543%
		Triazol	25722-66-1	8.3510	17.5000%	53,134	5.3134%
		Cu	7440-50-8	17.3605	36.3800%	110,458	11.0458%
		Ni	7440-02-0	0.7206	1.5100%	4,585	0.4585%
		Au	7440-57-5	0.2577	0.5400%	1,640	0.1640%
Solder Ball	External Plating	Br	7726-95-6	0.0286	0.0600%	182	0.0182%
		Sn	7440-31-5	2.7001	62.9400%	17,180	1.7180%
Die Attach	Adhesive	Pb	7439-92-1	1.5899	37.0600%	10,116	1.0116%
		Bismaleimide monomer	-----	8.7319	31.2300%	55,558	5.5558%
		Epoxy Resin	-----	1.8258	6.5300%	11,617	1.1617%
		Acrylate monomer	-----	2.6422	9.4500%	16,811	1.6811%
		Acrylic resin	-----	0.9758	3.4900%	6,209	0.6209%
Die	Circuit	Silica Fused	60676-86-0	13.7843	49.3000%	87,704	8.7704%
		Si	7440-21-3	24.3700	100.0000%	155,056	15.5056%
Wire	Interconnect	Copper	7440-50-8	0.6447	97.3626%	4,102	0.4102%
		Palladium	7440-05-3	0.0175	2.6374%	111	0.0111%
Mold Compound	Encapsulation	Silica (fused)	60676-86-0	41.4960	86.9200%	264,022	26.4022%
		Epoxy resin	-----	7.4100	6.4900%	47,147	4.7147%
		Phenolic resin	-----	2.9581	6.4900%	18,821	1.8821%
		Carbon black pigment	1333-86-4	0.3023	0.1000%	1,923	0.1923%

Package Weight (mg): 157.1686

% 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	< 2.0	< 2.0	< 2.0	< 2.0	< 50.00	< 45.00	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	< 50.00	< 45.00	CoA-CART-R
	Plastic Reel	< 5.0	< 5.0	< 5.0	< 10.0	<50.0	<45.0	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	< 0.0005	< 0.0005	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	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	CoA-MBBG –R

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Document History Page

Document Title: 36 - FBGA 7x8.5x1.2mm Non Pb-Free Package Material Declaration Datasheet
Document Number: 001-05724

Rev.	ECN No.	Orig. of Change	Description of Change
**	407157	YXP	New specification
*A	2581994	JARG	Added column for %weight of substance per homogeneous material in material composition. Updated and added Lead, Cr+VI, PBB and PBDE on the Declaration of Packaging/Indirect Materials table Change CAS Number for Au in material composition table Add CAS Number for Br in material composition table Updated Cypress Logo.
*B	3445748	JARG	Updated Material Composition Tables for Assembly Sites 1 to reflect 4 decimal places on values.
*C	3612504	UDR	Added B2 for Site 1 with reference QTP # 120612.

Distribution: WEB

Posting: None

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