196 – FBGA (15 x 15 x 1.5 mm) Pb-Free Package

PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	BW	**Body Size (mil/mm)**	15 x 15 x 1.5 mm
Package Weight – Site 1	B1: 619.5400 mg B2: 611.0238 mg	**Package Weight – Site 2**	N/A

SUMMARY

The 196L- BGA 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: Advanced Semiconductor Engineering Taiwan (ASET) Package Qualification Report # 044004, 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	COA-BW196L-ASET
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	As per MSDS
Ozone Depleting Substances	0	0	As per MSDS
Polychlorinated Biphenyls (PCBs)	0	0	As per MSDS
Polychlorinated Napthalenes	0	0	As per MSDS
Radioactive Substances	0	0	As per MSDS
Shortchain Chlorinated Paraffins	0	0	As per MSDS
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	0	0	As per MSDS
Tributyl Tin Oxide (TBTO)	0	0	As per MSDS
Formaldehyde	0	0	As per MSDS

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

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	SiO2	60676-86-0	19.5387	10.4900%	31,537	3.1537
		Acrylic	Trade Secret	17.1359	9.2000%	27,659	2.7659
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	11.4364	6.1400%	18,459	1.8459
		Bisphenol	13676-54-5	27.9017	14.9800%	45,036	4.5036
		Triazol	25722-66-1	33.4895	17.9800%	54,056	5.4056
		Copper	7440-50-8	73.1629	39.2800%	118,092	11.8092
		Nickel	7440-02-0	2.5890	1.3900%	4,179	0.4179
		Gold	7440-57-5	0.9127	0.4900%	1,473	0.1473
		Br	7726-95-6	0.0931	0.0500%	150	0.0150
Solder Ball	External Plating	Sn	7440-31-5	65.5512	95.5000%	105,806	10.5806
		Ag	7440-22-4	2.7456	4.0000%	4,432	0.4432
		Cu	7440-50-8	0.3432	0.5000%	554	0.0554
Die Attach	Adhesive	Epoxy Resin	Trade Secret	2.7258	7.0000%	4,400	0.4400
		Diester	Trade Secret	10.7085	27.5000%	17,285	1.7285
		Functionalized Ester	Trade Secret	3.8940	10.0000%	6,285	0.6285
		Polymeric	Trade Secret	1.1682	3.0000%	1,886	0.1886
		Silica fused	60676-86-0	20.4435	52.5000%	32,998	3.2998
Die	Circuit	Si	7440-21-3	22.9600	100.0000%	37,060	3.7060
Wire	Interconnect	Au	7440-57-5	6.6493	99.9900%	10,733	1.0733
		Ion Impurities	Trade Secret	0.0007	0.0100%	1	0.0001
Mold Compound	Encapsulation	Silica fused	60676-86-0	263.5201	89.0000%	425,348	42.5348
		Epoxy Resin 1	93705-66-9	13.3241	4.5000%	21,506	2.1506
		Epoxy Resin 2	Undisclosed	5.9218	2.0000%	9,558	0.9558
		Phenol resin	106466-55-1	13.3241	4.5000%	21,506	2.1506

Package Weight (mg): 619.5400 **% 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 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	SiO2	60676-86-0	19.5400	10.4907%	31979	3.1979%
		Acrylic	Trade Secret	17.1400	9.2021%	28051	2.8051%
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	11.4400	6.1420%	18723	1.8723%
		Bisphenol	13676-54-5	27.9000	14.9791%	45661	4.5661%
		Triazol	25722-66-1	33.4900	17.9802%	54810	5.4810%
		Copper	7440-50-8	73.1500	39.2731%	119717	11.9717%
		Nickel	7440-02-0	2.5900	1.3905%	4239	0.4239%
		Gold	7440-57-5	0.9100	0.4886%	1489	0.1489%
		Br	7726-95-6	0.1000	0.0537%	164	0.0164%
Solder Ball	External Plating	Sn	7440-31-5	65.5500	95.4983%	107278	10.7278%
		Ag	7440-22-4	2.7500	4.0064%	4501	0.4501%
		Cu	7440-50-8	0.3400	0.4953%	556	0.0556%
Die Attach	Adhesive	Silica, amorphous, fused	60676-86-0	20.0132	50.2159%	32754	3.2754%
		Bismaleimide monomer	Trade Secret	12.8812	32.3208%	21081	2.1081%
		Acrylate monomer	Trade Secret	2.7854	6.9891%	4559	0.4559%
		Epoxy resin	Trade Secret	2.7854	6.9891%	4559	0.4559%
		Acrylic resin	Trade Secret	1.3890	3.4851%	2273	0.2273%
Die	Circuit	Si	7440-21-3	22.9600	100.0000%	37576	3.7576%
Wire	Interconnect	Copper (Cu)	7440-57-5	3.1010	97.5000%	5075	0.5075%
		Palladium (Pd)	7440-50-3	0.0795	2.5000%	130	0.0130%
Mold Compound	Encapsulation	Silica	60676-86-0	258.6163	89.1384%	423251	42.3251%
		Epoxy Resin	Trade Secret	17.4146	6.0024%	28501	2.8501%
		Phenol Resin	Trade Secret	13.2483	4.5663%	21682	2.1682%
		Carbon Black	1333-86-4	0.8499	0.2929%	1391	0.1391%
			Package Weight (mg):	**611.0238**		**% 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
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: 196 - FBGA 15X15X1.5MM PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-61952

Rev.	ECN No.	Orig. of Change	Description of Change
**	2938315	HLR	New specification
*A	3607222	EBZ	Added package weight B2 for Site 1 with reference QTP # 120612.
*B	3639329	HLR	Updated Assembly Site 1.B1 Material Composition table to reflect 4 decimal places on values.
*C	4027305	HLR	Removed Tube Specification for Indirect Materials table.
*D	4058267	YUM	Added assembly site name in the assembly heading. Changed assembly code to assembly site name.
*E	5330497	HLR SLLO	Changed Cypress Logo. Changed the substances with “------------- “ and Undisclosed to “Trade Secret". Removed Distribution and Posting from the document history page.

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