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

PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

Cypress Package Code	BW	**Body Size (mil/mm)**	15 x 15 x 1.5 mm
Package Weight – Site 1	620 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 – Package Qualification Report # 044004 (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-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	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 #.
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	SiO2	60676-86-0	19.54	10.49	31,536	3.15
		Acrylic	Trade Secret	17.14	9.20	27,658	2.77
		Epoxy	29690-82-2, 68541-56-0, 25068-38-6	11.44	6.14	18,459	1.85
		Bisphenol	13676-54-5	27.90	14.98	45,035	4.50
		Triazol	25722-66-1	33.49	17.98	54,053	5.41
		Copper	7440-50-8	73.15	39.275	118,073	11.81
		Nickel	7440-02-0	2.59	1.39	4,179	0.42
		Gold	7440-57-5	0.91	0.49	1,473	0.15
		Br	7726-95-6	0.10	0.05	165	0.01
Solder Ball	External Plating	Sn	7440-31-5	65.55	95.5	105,808	10.58
		Ag	7440-22-4	2.75	4.00	4,432	0.44
		Cu	7440-50-8	0.34	0.50	554	0.06
Die Attach	Adhesive	Epoxy Resin	Trade Secret	2.73	7.00	4,399	0.44
		Diester	Trade Secret	10.71	27.5	17,280	1.73
		Functionalized Ester	Trade Secret	3.89	10.0	6,284	0.63
		Polymeric	Trade Secret	1.17	3.00	1,885	0.19
		Silica fused	60676-86-0	20.44	52.5	32,990	3.30
Die	Circuit	Si	7440-21-3	22.96	100.00	37,060	3.71
Wire	Interconnect	Au	7440-57-5	6.65	99.99	10,733	1.07
		Ion Impurities	----------------	0.00	0.01	1	0.00%
Mold Compound	Encapsulation	Silica fused	60676-86-0	263.53	89.00	425,369	42.54
		Epoxy Resin 1	93705-66-9	13.32	4.50	21,507	2.15
		Epoxy Resin 2	Undisclosed	5.92	2.00	9,559	0.96
		Phenol resin	106466-55-1	13.32	4.50	21,507	2.15
			Package Weight (mg):	**620**		**% Total:**	**100**

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.

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

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.

Document History Page

Document Title: 196 - FBGA 15X15X1.5MM PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)
Document Number: 001-61952

Rev.	ECN No.	Orig. of Change	Description of Change
**	2938315	HLR	New specification

Distribution: WEB

Posting: None

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.