48-VFBGA (6 X 8 mm) Non Pb-Free Package

PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)

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Cypress Package Code	BV	Body Size (mil/mm)	6 x 8 mm
Package Weight – Site 1	101 mg	Package Weight – Site 2	77 mg

SUMMARY

The 48-VFBGA 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 #s 011003 (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	20,800	
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.

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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	2.62	11.00	25,900	2.59
		Acrylic	29690-82-2	2.38	9.99	23,600	2.36
		Epoxy	68541-56-0	1.91	8.02	18,900	1.89
		Bisphenol	13676-54-5	3.58	15.03	35,400	3.54
		Triazol	25722-66-1	4.17	17.51	41,300	4.13
		Cu	7440-50-8	8.67	36.40	85,800	8.58
		Ni	7440-02-0	0.35	1.47	3,500	0.35
		Au	749-90-5	0.13	0.55	1,300	0.13
		Br	------------------	0.01	0.04	100	0.01
Solder Ball	External Plating	Sn	7440-31-5	3.59	63.00	35,500	3.55
		Pb	7439-92-1	2.10	37.00	20,800	2.08
Die Attach	Adhesive	Fused Silica	60676-86-0	10.33	54.00	102,300	10.23
		Diester	------------------	5.26	27.50	52,100	5.21
		Epoxy Resin	------------------	1.05	5.50	10,400	1.04
		Functionalized esters	------------------	1.91	10.00	18,900	1.89
		Polymeric Resin	------------------	0.58	3.00	5,700	0.57
Die	Circuit	Si	7440-21-3	10.33	100.00	102,300	10.23
Wire	Interconnect	Au	7429-90-5	1.60	100.00	15,800	1.58
Mold Compound	Encapsulation	Silica Fused	60676-86-0	36.00	89.00	356,400	35.64
		Epoxy Resin	------------------	2.22	5.50	22,000	2.20
		Phenolic Resin	------------------	2.22	5.50	22,000	2.20

Package Weight (mg): 101 **% Total: 100**

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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

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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	< 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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ASSEMBLY Site 2 – Package Qualification Report # 072910 (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 (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	25,044	
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	

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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	Plating 1	Au, metal & alloy	7440-57-5	0.14	0.52%	1806	0.18%
			Ni, metal & alloy	7440-02-0	0.64	2.40%	8322	0.83%
		Plating 2 AUS 308	Cu, metal & alloy	7440-50-8	5.59	20.90%	72600	7.26%
			Other acrylic / epoxy resin	------------------	1.42	5.30%	18384	1.84%
			Silica, crystalline – quartz (SiO_2)	14808-60-7	0.91	3.40%	11816	1.18%
			Copper Phthalocyanine Green	1328-53-6	0.01	0.04%	123	0.01%
			1-Cyanoguanidine	461-58-5	0.03	0.10%	338	0.03%
		HL832 NX	BT Resin	13676-54-5/ 25722-66-1	7.92	29.63%	102850	10.30%
			Fibrous-glass-wool	65997-17-3	10.08	37.71%	130900	13.10%
Solder Ball	External Plating	Sn		7440-31-5	3.28	63.00%	42642	4.26%
		Pb		7440-22-4	1.93	37.00%	25044	2.50%
Epoxy	Adhesive	Bismaleimide		Trade secret	0.20	60.00%	2533	0.25%
		Silicon Resin		Trade secret	0.08	25.00%	1055	0.11%
		Epoxy Resin		9003-36-5%	0.03	10.00%	422	0.04%
		Diluent		Trade secret	0.01	4.00%	169	0.02%
		Carbon Black		1333-86-4%	0.00	0.50%	21	0.00%
		Dicyandiamide		461-58-5	0.00	0.50%	21	0.00%
Silicon Chip	Circuit	Si		7440-21-3	12.90	100.00%	167574	16.78%
Bond Wire, Gold Wire	Interconnect	Au		7440-57-5	1.75	99.99%	22731	2.28%
Mold Compound	Encapsulation	Fused Silica		60676-86-0	18.00	60.00%	233824	23.41%
		Solid Epoxy Resin		------------------	3.00	10.00%	38971	3.90%
		Phenol Resin		------------------	3.00	10.00%	38971	3.90%
		Carbon Black		1333-86-4	0.30	1.00%	3897	0.39%
		Crystalline Silica		14808-60-7	1.50	5.00%	19485	1.95%
		Metal Hydro Oxide		------------------	4.20	14.00%	54559	5.46%

Package Weight (mg): 77 **% Total: 100**

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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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Note 4: Actual testing performed on package family basis. Engineering calculations were applied to derive individual package data.

Document History Page

Document Title: 48-VFBGA (6x8 mm) Non Pb-Free PMDD
Document Number: 001-05125

Rev.	ECN No.	Orig. of Change	Description of Change
**	400641	GFJ	New Specification
*A	1472244	VFR/HLR	Added PMDD for site 2 – AIT Indonesia Added % weight of substance per Homogenous Material and % weight of substance per package on the Material Composition for Assembly Site 1. Completed the RoHS Substances namely; Lead Cadmium, Mercury, Chromium VI, PBB and PBDE on Declaration of Packaging Indirect Materials table for Assembly Site 1.

Distribution: WEB

Posting: None

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