



**PACKAGE MATERIAL DECLARATION DATASHEET (PMDD)**

<b>Cypress Package Code</b>	BB	<b>Body Size (mil/mm)</b>	13 x 15
<b>Package Weight – Site 1</b>	598 mg	<b>Package Weight – Site 2</b>	490 mg

**SUMMARY**

The 165-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 #s 020401, 044501 (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	56,230	
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	PPM	%
Substrate	Base Material	SiO <sub>2</sub>	60676-86-0	17.75	29,661	2.97%
		Acrylic	Proprietary, 29690-82-2	16.14	26,971	2.70%
		Epoxy	68541-56-0, 25068-38-6	12.91	21,573	2.16%
		Bisphenol	13676-54-5	24.21	40,456	4.05%
		Triazol	25722-66-1	28.24	47,190	4.72%
		Cu	7440-50-8	58.74	98,159	9.82%
		Ni	7440-02-0	2.42	4,044	0.40%
		Au	7429-90-5	0.89	1,487	0.15%
		Br	Proprietary	0.09	150	0.02%
Solder Ball	External Plating	Sn	7440-31-5	57.29	95,734	9.57%
		Pb	7439-92-1	33.65	56,230	5.62%
Die Attach	Adhesive	Fused silica	60676-86-0	50.14	83,786	8.38%
		Diester	Proprietary	25.53	42,662	4.27%
		Epoxy Resin	Proprietary	5.11	8,539	0.85%
		Functionalized esters	Proprietary	9.28	15,507	1.55%
		Polymeric resin	Proprietary	2.79	4,662	0.47%
Die	Circuit	Si	7440-21-3	53.85	89,985	9.00%
Wire	Interconnect	Au	7429-90-5	5.11	8,536	0.85%
		Ion Impurities	-----	0.00	1	0.00%
Mold Compound	Encapsulation	Silica (fused)	60676-86-0	136.01	227,278	22.73%
		Epoxy resin	Proprietary	24.29	40,590	4.06%
		Phenolic resin	Proprietary	9.71	16,226	1.62%
		Silica	7631-86-9	9.71	16,226	1.62%
		Mixed siloxanes	Proprietary	3.89	6,500	0.65%
		Brominated compound	Proprietary	3.89	6,500	0.65%
		Silica (quartz)	14808-60-7	1.94	3,242	0.32%
		Carbon black pigment	1333-86-4	0.97	1,621	0.16%
		Silica (Cristobalite)	14464-46-1	1.94	3,242	0.32%
		Antimony Trioxide	1309-64-4	1.94	3,242	0.32%

**Package Weight (mg):** 598    **% Total:** 100

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 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	Cadmium PPM	Mercury PPM	Analysis Report (Note2)
Tape & Reel	Cover tape	< 5.0	< 5.0	CoA-COVT-G CoA-COVT-R
	Carrier tape	< 5.0	< 5.0	CoA-CART-G CoA-CART-R
	Plastic Reel	< 5.0	< 5.0	CoA-PLRL-G CoA-PLRL-R
Tray	Tray	< 5.0	< 5.0	CoA-TRAY-G CoA-TRAY-R
Tube	Plastic Tube	N/A	N/A	N/A
	End Plug	N/A	N/A	N/A
Others	Moisture Barrier bag	< 5.0	< 5.0	CoA-MBBG-G CoA-MBBG-R
	Shielding bag	< 5.0	< 5.0	CoA-SBAG-G CoA-SBAG-R
	Protective Band	< 5.0	< 5.0	CoA-PROB- R
	Shipping and inner/ pizza box	< 5.0	< 5.0	CoA-ABOX-R
	Desiccant	< 5.0	< 5.0	CoA-DESS-G CoA-DESS-R
	Bubble Pack	< 5.0	< 5.0	CoA- BUBP-G CoA-BUBP-R

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**ASSEMBLY Site 2 – Package Qualification Report # 055103 (Note 1)**

**I. DECLARATION OF PACKAGED UNITS**

**A. BANNED SUBSTANCES**

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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	56,230	
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.



**165 – FBGA 13 x 15  
Non Pb-Free Package**

**B. MATERIAL COMPOSITION (Note 3)**

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	PPM	%
Substrate	Base Material	SiO <sub>2</sub>	60676-86-0	19.63	40,054	4.01%
		Acrylic	Proprietary, 29690-82-2	17.85	36,421	3.64%
		Epoxy	68541-56-0, 25068-38-6	14.27	29,132	2.91%
		Bisphenol	13676-54-5	26.77	54,631	5.46%
		Triazol	25722-66-1	31.23	63,725	6.37%
		Cu	7440-50-8	64.95	132,549	13.25%
		Ni	7440-02-0	2.68	5,461	0.55%
		Au	7429-90-5	0.98	2,008	0.20%
Solder Ball	External Plating	Br	Proprietary	0.10	203	0.02%
		Sn	7440-31-5	57.17	116,674	11.67%
Die Attach	Adhesive	Pb	7439-92-1	33.58	68,530	6.85%
		Fused silica	60676-86-0	41.81	85,333	8.53%
		Diester	Proprietary	21.29	43,449	4.34%
		Epoxy Resin	Proprietary	4.26	8,697	0.87%
		Functionalized esters	Proprietary	7.74	15,794	1.58%
Die	Circuit	Polymeric resin	Proprietary	2.33	4,748	0.47%
		Si	7440-21-3	54.2	110,612	11.06%
Wire	Interconnect	Au	7429-90-5	5.11	10,429	1.04%
		Ion Impurities	-----	0.00	0	0.00%
Mold Compound	Encapsulation	Silica (fused)	60676-86-0	68.69	140,184	14.02%
		Epoxy resin	Proprietary	4.98	10,163	1.02%
		Phenolic resin	Proprietary	3.96	8,082	0.81%
		Silica	7631-86-9	0.64	1,306	0.13%
		Mixed siloxanes	Proprietary	0.43	878	0.09%
		Non Brominated flame retardant	Proprietary	5.15	10,510	1.05%
		Carbon black pigment	1333-86-4	0.21	429	0.04%

**Package Weight (mg):** 490    **% Total:** 100

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	Plastic Reel	< 5.0	< 5.0	CoA-PLRL-G CoA-PLRL-R
Tray	Tray	< 5.0	< 5.0	CoA-TRAY-G CoA-TRAY-R
Tube	Plastic Tube	N/A	N/A	N/A
	End Plug	N/A	N/A	N/A
Others	Moisture Barrier bag	< 5.0	< 5.0	CoA-MBBG-G CoA-MBBG-R
	Shielding bag	< 5.0	< 5.0	CoA-SBAG-G CoA-SBAG-R
	Protective Band	< 5.0	< 5.0	CoA-PROB- R
	Shipping and inner/ pizza box	< 5.0	< 5.0	CoA-ABOX-R
	Desiccant	< 5.0	< 5.0	CoA-DESS-G CoA-DESS-R
	Bubble Pack	< 5.0	< 5.0	CoA- BUBP-G CoA-BUBP-R

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## Document History Page

Document Title: 165 - FBGA 13x15 Non Pb-Free PMDD  
Document Number: 001-05596

Rev.	ECN No.	Orig. of Change	Description of Change
**	405951	YXP	New specification
*A	459354	XBQ	Change Title - Remove package thickness as non significant for PMDD Added Assembly Site 2 – Package Qualification Report # 055103

Distribution: CML

Posting: None

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