PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	PZ	**Body Size (mil/mm)**	600 mils
Package Weight – Site 1	3,960.9509 mg	**Package Weight – Site 2**	4,612.6501 mg

SUMMARY

The28L-600 mils PDIP Pb-Free package is compliant to RoHS. Cypress Ordering Part Number containing an “X” (e.g. CY7C1328G-133A**X**I, CY2308S**X**C-1HT) meet the of Directive 2002/95/EC (RoHS) requirement.

ASSEMBLY Site 1: Millennium Microtech Thailand (MMT)
Package Qualification Report # 092014 (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	CoA-PZ28-MMT
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”. In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites 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 Homogeneous	PPM	%Weight of Substance per package %
Leadframe	Base Material	Copper	7440-50-8	1,301.9211	97.0200%	328,691	32.87%
		Ferrous	7439-89-6	34.8897	2.6000%	8,809	0.88%
		Zinc	7440-66-6	2.6838	0.2000%	677	0.07%
		Phosphorus	7723-14-0	2.0129	0.1500%	508	0.05%
		Lead	7439-92-1	0.4026	0.0300%	99	0.01%
Lead Finish	External Plating	Nickel	7440-02-0	24.1486	93.3100%	6,097	0.61%
		Gold	7440-57-5	0.6703	2.5900%	169	0.02%
		Palladium	7440-05-3	1.0611	4.1000%	268	0.03%
Die Attach	Adhesive	Epoxy Resin	Proprietary	0.6300	18.0000%	159	0.02%
		Silver (Ag)	7440-22-4	2.8000	80.0000%	708	0.07%
		Aromatic Amine	Proprietary	0.0700	2.0000%	19	0.00%
Die	Circuit	Si	7440-21-3	9.8000	100.0000%	2,475	0.25%
Wire	Interconnect	Au	7440-57-5	0.9799	99.9900%	249	0.02%
		Impurity (Ag,Ca, Cu,Fe,Mg)	----------	0.0010	0.0100%	0	0.00%
Mold Compound	Encapsulation	Silica Fused	60676-86-0	2,238.4678	86.8000%	565,132	56.51%
		Epoxy Resin	----------	154.7328	6.0000%	39,064	3.91%
		Epoxy, Cresol	29690-82-2	51.5776	2.0000%	13,019	1.30%
		Phenol resin	----------	128.9440	5.0000%	32,553	3.26%
		Carbon Black	1333-86-4	5.1578	0.2000%	1,304	0.13%

Package Weight (mg): 3,960.9509 **% Total: 100.0000**

II. DECLARATION OF PACKAGING INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tube	Plastic Tube	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-PLTB-R
	End Pin	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-ENDP-R
	End Plug	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-EPLG-R
Others	Shielding Bag	<2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 5.0	CoA-SBAG-R

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

ASSEMBLY Site 2: Amkor Technology Philippines (P1/P2)
Package Qualification Report # 122903 (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	CoA-PZ28-Amkor Philippines (P1/P2)
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

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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". In order to report exactly 100% material composition, some numbers were rounded to the nearest 0.01 percent. Cypress Semiconductor material information are calculated using MSDS, Material Analysis Reports and Cypress Assembly sites 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
Lead frame	Base Material	Copper (Cu)	7440-50-8	853.0892	97.2846	184,945	18.4945
		Iron (Fe)	7439-89-6	21.0099	2.3959	4,555	0.4555
		Zinc (Z)	7440-66-6	1.0505	0.1198	228	0.0228
		Phosphorus (P)	7723-14-0	0.2626	0.0299	57	0.0057
		Silver (Ag)	7440-22-4	1.4886	0.1698	323	0.0323
Lead Finish	External Plating	Tin (Sn)	7440-31-5	32.0750	100.0000	6,954	0.6954
Die Attach	Adhesive	Resin	----------	0.1410	7.0000	30	0.003
		Silver	7440-22-4	1.4096	70.0000	305	0.0305
		Mixed aryl allyl glycidyl compounds	----------	0.0604	3.0000	13	0.0013
		Amine	----------	0.1007	5.0000	22	0.0022
		Gamma Butyrolactone	----------	0.1007	5.0000	22	0.0022
		Diglycidylether of bisphenol-F	----------	0.2014	10.0000	44	0.0044
Die	Circuit	Silicon	7440-21-3	6.0762	100.0000	1,317	0.1317
Wire	Interconnect	Copper (Cu)	7440-50-8	0.2651	100.0000	57.4663	0.0057
Mold Compound	Encapsulation	Multi-aromatic Resin	----------	277.1489	7.5000	60,085	6.0085
		SiO2 Filler	60676-86-0	3,177.9745	86.0000	688,969	68.8969
		Carbon Black	1333-86-4	18.4766	0.5000	4,006	0.4006
		Epoxy Cresol Novolac	----------	73.9064	2.0000	16,023	1.6023
		Phenol Resin	----------	147.8128	4.0000	32,045	3.2045

Package Weight (mg): 4,612.6501 **% Total: 100.0000**

II. DECLARATION OF PACKAGING INDIRECT MATERIALS

Type	Material	Lead PPM	Cadmium PPM	Cr VI PPM	Mercury PPM	PBB PPM	PBDE PPM	Analysis Report (Note2)
Tube	Plastic Tube	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-PLTB-R
	End Pin	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-ENDP-R
	End Plug	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-EPLG-R
Others	Shielding Bag	<2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 5.0	CoA-SBAG-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: 28L - PDIP PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-03208

Rev.	ECN No.	Orig. of Change	Description of Change
**	385878	EML	New document
*A	1092426	MRB	1. Updated Cypress Logo 2. Added on the material composition the percent weight per homogeneous material and weight of substance 3. Updated and added Lead, Cr+VI, PBB and PBDE on the Declaration of Packaging/Indirect Materials. Added note 4: the package were based on Engineering calculation and performed on a package family basis
*B	2721039	ZJL Dcon	1. Included PMDD for MMT location X. 2. Deleted PMDD of Omedata location O. 3. Changed from CML to WEB in distribution.
*C	3278144	HLR	Sunset Due – No Change.
*D	3925886	VFR	Added PMDD for Site 2 – Amkor Technology Philippines; reference QTP # 122903
*E	4055149	YUM	Added assembly site name in the Assembly heading in site 1 and 2. Changed the assembly code to assembly site name in site 1 and 2. Update material composition in Assembly Site 1 to reflect 4 decimal on values.

Distribution: WEB

Posting: None

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