28L - SSOP
Pb- Free Package

PACKAGE MATERIAL DECLARATION DATASHEET

Cypress Package Code	SP	Body Size (mil/mm)	209 mil
Package Weight – Site 1	B1: 236.0585 mg B2: 243.5388 mg B3: 243.2456 mg	**Package Weight – Site 2**	B1: 223.9939 mg B2: 223.1139 mg B3: 228.6370 mg
Package Weight – Site 3	B1: 228.4105 mg B2: 224.2700 mg	**Package Weight – Site 4**	N/A

SUMMARY

The 28L-SSOP Pb-Free package is compliant to RoHS. Cypress Ordering Part Number containing an “X” (e.g. CY7C1328G-133AXI, CY2308SXC-1HT) meet the requirements of Directive 2002/95/EC (RoHS).

ASSEMBLY Site 1: Orient Semiconductor Electronics Taiwan (OSET)
Package Qualification Report #s 030604/042702/111402/120410 (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-SP28-OSET
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

B1. 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
Leadframe	Base Material	Copper	7440-50-8	43.3957	99.9900	183,834	18.3804
		Silver	7440-22-4	0.0043	0.0100	18	0.0184
Lead Finish	External Plating	Tin	7440-31-5	3.5000	100.0000	14,827	1.4824
Die Attach	Adhesive	Epoxy Resin	-----------------	0.0705	15.0000	299	0.0299
		Metal	-----------------	0.0235	5.0000	100	0.0100
		Silver	7440-22-4	0.3760	80.0000	1,593	0.1593
Die	Circuit	Si	7440-21-3	14.5185	100.0000	61,504	6.1494
Wire	Interconnect	Au	7440-57-5	0.9599	100.0000	4,066	0.4066
Mold Compound	Encapsulation	Epoxy Resin1	-----------------	4.3303	2.5000	18,344	1.8341
		Epoxy Resin2	-----------------	4.3303	2.5000	18,344	1.8341
		Phenol Resin	-----------------	4.3303	2.5000	18,344	1.8341
		Aromatic Phosphate	-----------------	1.7321	1.0000	7,338	0.7336
		Silica	7631-86-9	156.4086	90.3000	662,584	66.2475
		Carbon Black	1333-86-4	0.3464	0.2000	1,468	0.1467
		Others	-----------------	1.7321	1.0000	7,338	0.7336

Package Weight (mg): 236.0585 **% Total: 100.0000**

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

B2. 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
Leadframe	Base Material	Copper	7440-50-8	63.7781	96.4025%	261,880	26.1880%
		Fe	7439-89-6	1.5547	2.3500%	6,384	0.6384%
		P	7723-14-0	0.0546	0.0825%	224	0.0224%
		Zn	7440-66-6	0.0827	0.1250%	340	0.0340%
		Pb	7439-92-1	0.0066	0.0100%	27	0.0027%
		Ag	7440-22-4	0.6814	1.0300%	2,798	0.2798%
Lead Finish	External Plating	Tin	7440-31-5	4.7828	100.0000%	19,639	1.9639%
Die Attach	Adhesive	Silver Flake	7440-22-4	0.6173	79.0000%	2,535	0.2535%
		Epoxy Acrylate	15625-89-5	0.0586	7.5000%	241	0.0241%
		Substituted Polyamine	68490-66-4	0.0078	1.0000%	32	0.0032%
		Bisphenol F	28064-14-4	0.0586	7.5000%	241	0.0241%
		2-Ethylhexyl Glycidyl Ether	2461-15-6	0.0391	5.0000%	160	0.0160%
Die	Circuit	Si	7440-21-3	13.6551	100.0000%	56,070	5.6070%
Wire	Interconnect	Au	7440-57-5	0.5494	100.0000%	2,256	0.2256%
Mold Compound	Encapsulation	Epoxy resin A	Trade Secret	7.8806	5.0000%	32,359	3.2359%
		Epoxy,Cresol Novolac	29690-82-2	7.8806	5.0000%	32,359	3.2359%
		Phenol resin	Trade Secret	7.8806	5.0000%	32,359	3.2359%
		Metal Hydroxide	Trade Secret	7.8806	5.0000%	32,359	3.2359%
		Carbon Black	1333-86-4	0.4728	0.3000%	1,942	0.1942%
		Silica Fused	60676-86-0	109.3827	69.4000%	449,139	44.9139%
		Silica Fused	76361-86-9	15.7612	10.0000%	64,717	6.4717%
		Silica,crystalline	14808-60-7	0.4728	0.3000%	1,942	0.1942%

Package Weight (mg): 243.5388 **% Total: 100.0000**

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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

B3. MATERIAL COMPOSITION (Note 3)

USING COPPER WIRE AND PURE SN FINISH

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Leadframe	Base Material	Copper	7440-50-8	63.7781	96.4025%	262,196	26.2196%
		Fe	7439-89-6	1.5547	2.3500%	6,391	0.6391%
		P	7723-14-0	0.0546	0.0825%	224	0.0224%
		Zn	7440-66-6	0.0827	0.1250%	340	0.0340%
		Pb	7439-92-1	0.0066	0.0100%	27	0.0027%
		Ag	7440-22-4	0.6814	1.0300%	2,801	0.2801%
Lead Finish	External Plating	Tin	7440-31-5	4.7828	100.0000%	19,662	1.9662%
Die Attach	Adhesive	Ag	7440-22-4	0.5782	74.0000%	2,377	0.2377%
		Epoxy resin A	9003-36-5	0.0313	4.0000%	128	0.0128%
		Epoxy resin B	Trade Secret	0.0469	6.0000%	193	0.0193%
		Diluent A	Trade Secret	0.0313	4.0000%	128	0.0128%
		Diluent B	Trade Secret	0.0469	6.0000%	193	0.0193%
		Phenolic Hardener	Trade Secret	0.0391	5.0000%	161	0.0161%
		Dicyandiamide	461-58-5	0.0039	0.5000%	16	0.0016%
		Organic peroxide	Trade Secret	0.0039	0.5000%	16	0.0016%
Die	Circuit	Si	7440-21-3	13.6551	100.0000%	56,137	5.6137%
Wire	Interconnect	Cu	7440-50-8	0.2562	100.0000%	1,053	0.1053%
Mold Compound	Encapsulation	Epoxy resin A	Trade Secret	7.8806	5.0000%	32,398	3.2398%
		Epoxy,Cresol Novolac	29690-82-2	7.8806	5.0000%	32,398	3.2398%
		Phenol resin	Trade Secret	7.8806	5.0000%	32,398	3.2398%
		Metal Hydroxide	Trade Secret	7.8806	5.0000%	32,398	3.2398%
		Carbon Black	1333-86-4	0.4728	0.3000%	1,944	0.1944%
		Silica Fused	60676-86-0	109.3827	69.4000%	449,682	44.9682%
		Silica Fused	7631-86-9	15.7612	10.0000%	64,795	6.4795%
		Silica,crystalline	14808-60-7	0.4728	0.3000%	1,944	0.1944%

Package Weight (mg): 243.2456 **% 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)
Tape & Reel	Cover tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-COVT-R
	Carrier tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-CART-R
Tube	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
HIC	Humidity Indicator	<10.0	< 5.0	< 4.0	< 1.0	< 100.0	< 100.0	CoA-HIC-R
Others	Shielding bag	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	CoA-SBAG-R

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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

ASSEMBLY Site 2: Cypress Manufacturing Limited (CML)
Package Qualification Report #s 063711, 121405, 131804 **(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-SP28-CML
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

B1. MATERIAL COMPOSITION (Note 3)

Using Gold Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	59.8476	97.4400	267,184	26.7184
		Fe	7439-89-6	1.4679	2.3900	6,553	0.6553
		P	7723-14-0	0.0369	0.0600	165	0.0165
		Zn	7440-66-6	0.0614	0.1000	274	0.0274
Lead Finish	External Plating	Ni	7440-02-0	0.6081	96.5200	2,715	0.2715
		Pd	7440-05-3	0.0110	1.7400	49	0.0049
		Au	7440-57-5	0.0110	1.7400	49	0.0049
Die Attach	Adhesive	Ag	7440-22-4	0.6500	81.2500	2,902	0.2902
		Proprietary Bismeleide	-----------------	0.0600	7.5000	268	0.0268
		Propreitary Polymer	-----------------	0.0300	3.7500	134	0.0134
		Methacrylate	-----------------	0.0200	2.5000	89	0.0089
		Acrylate Ester	-----------------	0.0200	2.5000	89	0.0089
		Organic Peroxide	-----------------	0.0200	2.5000	89	0.0089
Die	Circuit	Si	7440-21-3	10.2300	100.0000	45,671	4.5671
Wire	Interconnect	Au	7440-57-5	1.6400	100.0000	7,322	0.7322
Mold Compound	Encapsulation	SiO2	----------------	132.8592	89.0000	593,138	59.3138
		Phenol Resin	Proprietary	7.4640	5.0000	33,322	3.3322
		Epoxy Resin	Proprietary	8.9568	6.0000	39,987	3.9987

Package Weight (mg): 223.9939 **% Total: 100.0000**

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

B2. MATERIAL COMPOSITION (Note 3)

Using Cu Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	59.8476	97.4498%	268,238	26.8238%
		Fe	7439-89-6	1.4679	2.3902%	6,579	0.6579%
		P	7723-14-0	0.0369	0.0601%	165	0.0165%
		Zn	7440-66-6	0.0614	0.1000%	275	0.0275%
Lead Finish	External Plating	Ni	7440-02-0	0.6081	96.5085%	2,726	0.2726%
		Pd	7440-05-3	0.0110	1.7458%	49	0.0049%
		Au	7440-57-5	0.0110	1.7458%	49	0.0049%
Die Attach	Adhesive	Ag	7440-22-4	0.6500	81.2500%	2,913	0.2913%
		Proprietary Bismeleide	-----------------	0.0600	7.5000%	269	0.0269%
		Propreitary Polymer	-----------------	0.0300	3.7500%	134	0.0134%
		Methacrylate	-----------------	0.0200	2.5000%	90	0.0090%
		Acrylate Ester	-----------------	0.0200	2.5000%	90	0.0090%
		Organic Peroxide	-----------------	0.0200	2.5000%	90	0.0090%
Die	Circuit	Si	7440-21-3	10.2300	100.0000%	45,851	4.5851%
Wire	Interconnect	Cu	7440-50-8	0.7600	100.0000%	3,406	0.3406%
Mold Compound	Encapsulation	SiO2	----------------	132.8592	0.8900	595,477	59.5477%
		Phenol Resin	Proprietary	7.4640	0.0500	33,454	3.3454%
		Epoxy Resin	Proprietary	8.9568	0.0600	40,145	4.0145%

Package Weight (mg): 223.1139 **% Total: 100.0000**

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

B3. MATERIAL COMPOSITION (Note 3)

Using CuPd Wire

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	59.8486	97.2851%	261,763	26.1763%
		Fe	7439-89-6	1.5689	2.5503%	6,862	0.6862%
		P	7723-14-0	0.0379	0.0616%	166	0.0166%
		Zn	7440-66-6	0.0634	0.1031%	277	0.0277%
Lead Finish	External Plating	Ni	7440-02-0	0.6089	96.2231%	2,663	0.2663%
		Pd	7440-05-3	0.0128	2.0228%	56	0.0056%
		Au	7440-57-5	0.0111	1.7541%	49	0.0049%
Die Attach	Adhesive	Ag	7440-22-4	0.8500	82.5243%	3,718	0.3718%
		Proprietary Bismeleide	-----------------	0.0700	6.7961%	306	0.0306%
		Propreitary Polymer	-----------------	0.0400	3.8835%	175	0.0175%
		Methacrylate	-----------------	0.0300	2.9126%	131	0.0131%
		Acrylate Ester	-----------------	0.0200	1.9417%	87	0.0087%
		Organic Peroxide	-----------------	0.0200	1.9417%	87	0.0087%
Die	Circuit	Si	7440-21-3	13.5300	100.0000%	59,177	5.9177%
Wire	Interconnect	Cu	7440-50-8	0.9400	97.9167%	4,111	0.4111%
		Pd	7440-05-3	0.0200	2.0833%	87	0.0087%
Mold Compound	Encapsulation	SiO2	----------------	133.9896	88.7552%	586,037	58.6037%
		Phenol Resin	Proprietary	7.9890	5.2919%	34,942	3.4942%
		Epoxy Resin	Proprietary	8.9868	5.9529%	39,306	3.9306%
			Package Weight (mg):	**228.6370**		**% 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)
Tape & Reel	Cover tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-COVT-R
	Carrier tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-CART-R
Tube	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
HIC	Humidity Indicator	<10.0	< 5.0	< 4.0	< 1.0	< 100.0	< 100.0	CoA-HIC-R
Others	Shielding bag	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	CoA-SBAG-R

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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

ASSEMBLY Site 3: Amkor Technology Philippines (P1/P2)
Package Qualification Report # 054603/072108, 040606, 063503 **(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-SP28-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

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

B1. MATERIAL COMPOSITION (Note 3)

Using NiPdAu Lead Finish

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogenous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	63.3165	97.5000	277,205	27.7205
		Fe	7439-89-6	1.5261	2.3500	6,681	0.6681
		P	7723-14-0	0.0195	0.0300	85	0.0085
		Zn	7440-66-6	0.0779	0.1200	341	0.0341
	Frame Plating	Ni	7440-02-0	1.2277	97.4400	5,375	0.5375
		Pd	7440-05-3	0.0262	2.0800	115	0.0115
		Au	7440-57-5	0.0060	0.4800	26	0.0026
Lead Finish	External Plating	Ni	7440-02-0	0.4947	97.0000	2,166	0.2166
		Pd	7440-05-3	0.0122	2.4000	54	0.0054
		Au	7440-57-5	0.0031	0.6000	13	0.0013
Die Attach	Adhesive	Ag	7440-22-4	1.2810	70.0000	5,608	0.5608
		Resin	-----------------	0.3843	21.0000	1,682	0.1682
		Metal Oxide	-----------------	0.0549	3.0000	240	0.0240
		Amine	-----------------	0.0549	3.0000	240	0.0240
		Gamma Butyroclatone	-----------------	0.0549	3.0000	240	0.0240
Die	Circuit	Si	7440-21-3	9.8200	100.0000	42,993	4.2993
Wire	Interconnect	Au	7440-57-5	0.5799	99.9900	2,539	0.2539
		Ca	7440-70-2	0.0003	0.0500	1	0.0001
		Be	7440-41-7	0.0003	0.0500	1	0.0001
Mold Compound	Encapsulation	SiO_2	60676-86-0	128.5442	86.0000	562,777	56.2777
		Resin	-----------------	11.2103	7.5000	49,079	4.9079
		Carbon Black	-----------------	0.7474	0.5000	3,272	0.3272
		Epoxy Cresol Novolac	-----------------	2.9894	2.0000	13,088	1.3088
		Phenol Resin	-----------------	5.9788	4.0000	26,176	2.6176

Package Weight (mg): 228.4105 **% 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 (Note3)

Using Pure Sn Lead Finish

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	Cu	7440-50-8	57.3203	97.5000	255,586	25.5586
		Fe	7439-89-6	1.3816	2.3500	6,160	0.6160
		P	7723-14-0	0.0176	0.0300	79	0.0079
		Zn	7440-66-6	0.0705	0.1200	315	0.0315
	Frame Plating	Ag	7440-22-4	0.8100	100.0000	3,612	0.3612
Lead Finish	External Plating	Sn	7440-31-5	3.7200	100.0000	16,587	1.6587
Die Attach	Adhesive	Resin	-----------------	0.0609	21.0000	272	0.0272
		Ag	7440-22-4	0.2030	70.0000	905	0.0905
		Metal Oxide	-----------------	0.0087	3.0000	39	0.0039
		Amine	-----------------	0.0087	3.0000	39	0.0039
		Gamma Butyrolactone	-----------------	0.0087	3.0000	39	0.0039
Die	Circuit	Silicon	7440-21-3	0.6400	100.0000	2,854	0.2854
Wire	Interconnect	Au	7440-57-5	0.6700	100.0000	2,987	0.2987
Mold Compound	Encapsulation	Multi-aromatic Resin	-----------------	11.9513	7.5000	53,290	5.3290
		SiO2 Filler	60676-86-0	137.0410	86.0000	611,054	61.1054
		Carbon Black	1333-86-4	0.7968	0.5000	3,553	0.3553
		Epoxy Cresol Novolac	29690-82-2	3.1870	2.0000	14,211	1.4211
		Phenol Resin	-----------------	6.3740	4.0000	28,421	2.8421

Package Weight (mg): 224.2700 **% 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)
Tape & Reel	Cover tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-COVT-R
	Carrier tape	<2.0	<2.0	<2.0	<2.0	<0.0005	<0.0005	CoA-CART-R
Tube	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
HIC	Humidity Indicator	<10.0	< 5.0	< 4.0	< 1.0	< 100.0	< 100.0	CoA-HIC-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-SSOP PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-04103

Rev.	ECN No.	Orig. of Change	Description of Change
**	388679	EML	New document
*A	432396	MRB	Added referencing to the automotive qualification report number 042702 for assembly site 1.
*B	504079	RCF	Added Assembly site 2 Declaration of Package Units, Banned Substances and Material Composition and update package weight for site 2 (224 mg)
*C	566675	MRB	1. Added Assembly site 3 Declaration of Package Units 2. Added on the material composition the percent weight per homogeneous material and weight of substance per package. 3. Added Lead, CrIV, PBB and PBDE on the Declaration of Packaging/Indirect Materials. 4. Updated Cypress logo 5. Added note 4: the package were based on Engineering calculation and performed on a package family basis
*D	602666	MRB	1. Updated the declaration of packaging indirect materials. 2. Added on the material composition the percent weight per homogeneous material and weight of substance per package on Assembly site 1 and 2.
*E	2714243	MAHA	Corrected the CAS numbers of silver and tin for assembly site 1. DCon: Change from CML to WEB in the distribution list.
*F	2727501	MAHA	Added the following for assembly site 3: 1. Package weight for B2 2. Qualification report reference 040606 3. Table B2: Pure Sn lead finish
*G	3219898	HLR	Corrected the total package weight for B1 on Assembly Site 3.
*H	3364696	NKZ	Added reference QTP 072108 in Assembly 3.
*I	3044365	HLR	Added reference QTP no. 063503 on Assembly Site 3. Updated the material composition table to reflect 4 decimal places on values. Changed the % composition of Leadfinish for Assembly Site 2. Removed Ag on Bonding Wire for Assembly Site 3 – NiPdAu.Added Declaration of Packaging Materials for Assembly Site 1 and 2.
*J	3377158	EBZ	Added package weight B2 for Site 1. Added QTP#111402 for Assembly Site- 1. Added B2: Material Composition table for Site-1.

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Document History Page

Document Title: 28L-SSOP PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET
Document Number: 001-04103

Rev.	ECN No.	Orig. of Change	Description of Change
*K	3619102	COPI	Added PMDD site 4. CML-RA Copper wire qualification under QTP # 121405.
*L	3651970	COPI	Added PMDD B3 for Site 1 – OSE Taiwan Copper wire qualification under QTP # 120410.
*M	3860998	JARG	Changed Package Weight of Site 1:B1 to 4 decimal places on page 1 as indicated on the corresponding material composition table.
*N	4005063	AWP	Added PMDD under Site 4 for CML-RA Copper-Palladium (Cu-Pd) wire qualification under QTP # 131804-B2. Added coding identification: B1 for Cu & B2 for Cu-Pd.
*O	4065631	YUM	Added assembly site name in the assembly heading in site 1, 2 and 3. Changed assembly code to assembly site name in site 1, 2 and 3.

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