

## PACKAGE MATERIAL DECLARATION DATASHEET

<b>Cypress Package Code</b>	LT	<b>Body Size (mil/mm)</b>	8.0X8.0X1.0mm
<b>Package Weight – Site 1</b>	182.4898 mg	<b>Package Weight – Site 2</b>	192.0681 mg
<b>Package Weight – Site 3</b>	167.1409 mg	<b>Package Weight – Site 4</b>	B1: 179.3670 mg B2: 179.2000 mg B3: 177.6643 mg B4: 177.3193 mg
<b>Package Weight – Site 5</b>	B1: 170.0300 mg B2: 174.9565 mg	<b>Package Weight – Site 6</b>	N/A

### SUMMARY

The QFN 68L 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: PT UNISEM Batam Package Qualification Report # 072603 (See 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-LT68-PT UNISEM
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 Naphthalenes	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](http://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 Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	72.4900	99.0700%	397228	39.7228
		Si	7440-21-3	0.5500	0.7500%	3014	0.3014
		Mg	7439-95-4	0.1300	0.1800%	712	0.0712
	External Plating	Ni	7440-50-8	3.4000	97.7000%	18631	1.8631
		Pd	7440-05-3	0.0400	1.1500%	219	0.0219
		Au	7440-57-5	0.0200	0.5700%	110	0.0110
		Ag	7440-22-4	0.0200	0.5700%	110	0.0110
Die Attach	Adhesive	Silver	7440-22-4	2.0919	75.0000%	11463	1.1463
		Epoxy resin	Proprietary	0.4185	15.0000%	2293	0.2293
		t-Butyl Phenylglycidyl ether	3101-60-8	0.2093	7.5000%	1147	0.1147
		Dicydiamide	461-58-5	0.0140	0.5000%	76	0.0076
		Hardener	620-92-8	0.0561	2.0100%	307	0.0307
Die	Circuit	Si	7440-21-3	7.6100	100.0000%	41701	4.1701
Wire	Interconnect	Au	7440-57-5	2.3400	100.0000%	12823	1.2823
Mold Compound	Encapsulation	Silica Fused	60676-86-0	87.2347	93.7000%	478025	47.8025
		Epoxy Resin1	Trade Secret	2.7930	3.0000%	15305	1.5305
		Phenol Resin	Trade Secret	2.7930	3.0000%	15305	1.5305
		Carbon Black	1333-86-4	0.2793	0.3000%	1530	0.1530
Package Weight (mg):				182.4898	% 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	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<0.0005	<0.0005	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-TRAY-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: Advanced Semiconductor Engineering Shanghai  
Package Qualification Report # 084005 (See 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-LT68-ASE Shanghai
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](http://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 Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	72.8715	97.5000%	379,404	37.9404
		Fe	7439-89-6	1.7414	2.3300%	9,067	0.9067
		Zn	7440-66-6	0.1121	0.1500%	584	0.0584
		P	7723-14-0	0.0224	0.0300%	117	0.0117
	External Plating	Ni	7440-02-0	0.9100	92.8600%	4,738	0.4738
		Pd	7440-05-3	0.0400	4.0800%	208	0.0208
		Au	7440-57-5	0.0200	2.0400%	104	0.0104
		Ag	7440-22-4	0.0100	1.0200%	52	0.0052
Die Attach	Adhesive	Silver	7440-22-4	0.7546	77.0000%	3,929	0.3929
		Acrylic resin	proprietary	0.0784	8.0000%	408	0.0408
		Epoxy resin	Proprietary	0.0245	2.5000%	128	0.0128
		Polybutadiene derivative	proprietary	0.0490	5.0000%	255	0.0255
		Butadiene copolymer	proprietary	0.0098	1.0000%	51	0.0051
		Acrylate	proprietary	0.0490	5.0000%	255	0.0255
		Peroxide	proprietary	0.0049	0.5000%	26	0.0026
		Additive	proprietary	0.0098	1.0000%	51	0.0051
Die	Circuit	Si	7440-21-3	7.6800	100.0000%	39,986	3.9986
Wire	Interconnect	Au	7440-57-5	1.0395	99.0000%	5,412	0.5412
		Pd	7440-05-3	0.0105	1.0000%	55	0.0055
Mold Compound	Encapsulation	Silica Fused	60676-86-0	90.4244	84.8100%	470,793	47.0793
		Epoxy Resin	Trade Secret	8.3590	7.8400%	43,521	4.3521
		Phenol Resin	Trade Secret	7.3248	6.8700%	38,136	3.8136
		Carbon Black	1333-86-4	0.5224	0.4900%	2,720	0.2720
Package Weight (mg):				192.0681	% 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	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<0.0005	<0.0005	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-TRAY-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: CARSEM Malaysia**  
**Package Qualification Report # 101401 (See 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-LT68-CARSEM
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](http://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 Homogeneous material	PPM	% weight of substance per package
Leadframe	Base Material	Cu	7440-50-8	62.8280	97.6500%	375898	37.5898
		Fe	7439-89-6	1.4219	2.2100%	8507	0.8507
		P	7723-14-0	0.0129	0.0200%	77	0.0077
		Zn	7440-66-6	0.0579	0.0900%	346	0.0346
	External Plating	Ni	7440-50-8	0.5602	93.3600%	3352	0.3352
		Pd	7440-05-3	0.0100	1.6700%	60	0.0060
		Au	7440-57-5	0.0200	3.3300%	120	0.0120
Die Attach	Adhesive	Ag	7440-22-4	0.0100	1.6700%	60	0.0060
		Silver	7440-22-4	0.3195	71.0000%	1912	0.1912
		Bismaleimide resin	Proprietary	0.0135	3.0000%	81	0.0081
		Carbocyclic Acrylate	Proprietary	0.0900	20.0000%	538	0.0538
		Acrylate	Proprietary	0.0135	3.0000%	81	0.0081
Die	Silicon Chip	Additive	Proprietary	0.0135	3.0000%	81	0.0081
Die	Silicon Chip	Si	7440-21-3	1.3300	100.0000%	7957	0.7957
Wire	Interconnect	Au	7440-57-5	2.4600	100.0000%	14718	1.4718
Mold Compound	Encapsulation	Silica Fused	60676-86-0	91.8073	93.7000%	549281	54.9281
		Epoxy Resin1	Trade Secret	2.9394	3.0000%	17586	1.7586
		Phenol Resin	Trade Secret	2.9394	3.0000%	17586	1.7586
		Carbon Black	1333-86-4	0.2939	0.3000%	1759	0.1759
Package Weight (mg):				167.1409			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	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<0.0005	<0.0005	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-TRAY-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 4: Cypress Manufacturing Limited (CML)  
Package Qualification Report # 100401, 114407, 120206 (See 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-LT68-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 Naphthalenes	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](http://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 AND NITTO MOLD COMPOUND**

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Lead Frame	Base material	Copper	7440-50-8	74.3345	97.4100%	414,427	41.4427%
		Iron	7439-89-6	1.8315	2.4000%	10,211	1.0211%
		Phosphorous	7723-14-0	0.0534	0.0700%	298	0.0298%
		Zinc	7440-66-6	0.0916	0.1200%	511	0.0511%
Lead Finish	External Plating	Nickel	7440-02-0	1.1476	96.5200%	6,398	0.6398%
		Palladium	7440-05-3	0.0207	1.7370%	115	0.0115%
		Gold	7440-57-5	0.0207	1.7430%	116	0.0116%
Die Attach	Adhesive	Ag	7440-22-4	0.7866	74.0000%	4,386	0.4386%
		Carbocyclic Acrylate	-----	0.2126	20.0000%	1,185	0.1185%
		Bismaleimide Resin	-----	0.0213	2.0000%	119	0.0119%
		Additive	-----	0.0213	2.0000%	119	0.0119%
		Acrylate ester	-----	0.0213	2.0000%	119	0.0119%
Die	Circuit	Silicon	7440-21-3	14.8850	100.0000%	82,986	8.2986%
Wire	Interconnect	Gold	7440-57-5	3.1314	99.0000%	17,458	1.7458%
		Palladium	7440-05-3	0.0316	1.0000%	176	0.0176%
Mold Compound	Encapsulation	SiO2	60676-86-0	69.1013	83.5000%	385,251	38.5251%
		Crystalline Silica	14808-60-7	4.1378	5.0000%	23,069	2.3069%
		Metal OH		2.4827	3.0000%	13,841	1.3841%
		Phenol Resin	-----	3.3102	4.0000%	18,455	1.8455%
		Epoxy Resin	-----	3.3102	4.0000%	18,455	1.8455%
		Carbon Black	1333-86-4	0.4138	0.5000%	2,307	0.2307%
Package Weight (mg):				179.3671	% Total:		100.0000

Note 1: Qualification reports are available at [www.cypress.com](http://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 GOLD WIRE AND SUMITOMO MOLD COMPOUND**

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Lead Frame	Base material	Copper	7440-50-8	74.3354	97.4100%	414,818	41.4818%
		Iron	7439-89-6	1.8315	2.4000%	10,220	1.0220%
		Phosphorous	7723-14-0	0.0534	0.0700%	298	0.0298%
		Zinc	7440-66-6	0.0916	0.1200%	511	0.0511%
Lead Finish	External Plating	Nickel	7440-02-0	1.1468	96.5200%	6,400	0.6400%
		Palladium	7440-05-3	0.0206	1.7370%	115	0.0115%
		Gold	7440-57-5	0.0207	1.7430%	116	0.0116%
Die Attach	Adhesive	Ag	7440-22-4	1.0642	74.0000%	5,939	0.5939%
		Carbocyclic Acrylate	-----	0.2876	20.0000%	1,605	0.1605%
		Bismaleimide Resin	-----	0.0288	2.0000%	161	0.0161%
		Additive	-----	0.0288	2.0000%	161	0.0161%
		Acrylate ester	-----	0.0288	2.0000%	161	0.0161%
Die	Circuit	Silicon	7440-21-3	20.1341	100.0000%	112,356	11.2356%
Wire	Interconnect	Gold	7440-57-5	3.3260	99.0000%	18,560	1.8560%
		Palladium	7440-05-3	0.0336	1.0000%	187	0.0187%
Mold Compound	Encapsulation	SiO2	60676-86-0	67.3640	87.7500%	375,915	37.5915%
		Phenol Resin	-----	3.8384	5.0000%	21,420	2.1420%
		Epoxy Resin	-----	5.3738	7.0000%	29,988	2.9988%
		Carbon Black	1333-86-4	0.1919	0.2500%	1,071	0.1071%
Package Weight (mg):				179.2000	% Total:		100.0000%

Note 1: Qualification reports are available at [www.cypress.com](http://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 COPPER WIRE AND NITTO MOLD COMPOUND

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Lead Frame	Base material	Copper	7440-50-8	74.3345	97.4099%	418,399	41.8399%
		Iron	7439-89-6	1.8315	2.4000%	10,309	1.0309%
		Phosphorous	7723-14-0	0.0534	0.0700%	301	0.0301%
		Zinc	7440-66-6	0.0916	0.1200%	516	0.0516%
Lead Finish	External Plating	Nickel	7440-02-0	1.1476	96.5181%	6,459	0.6459%
		Palladium	7440-05-3	0.0207	1.7410%	117	0.0117%
		Gold	7440-57-5	0.0207	1.7410%	117	0.0117%
Die Attach	Adhesive	Ag	7440-22-4	0.7866	73.9912%	4,427	0.4427%
		Carbocyclic Acrylate	-----	0.2126	19.9981%	1,197	0.1197%
		Bismaleimide Resin	-----	0.0213	2.0036%	120	0.0120%
		Additive	-----	0.0213	2.0036%	120	0.0120%
		Acrylate ester	-----	0.0213	2.0036%	120	0.0120%
Die	Circuit	Silicon	7440-21-3	14.885	100.0000%	83,782	8.3782%
Wire	Interconnect	Copper	7440-50-8	1.4602	100.0000%	8,219	0.8219%
Mold Compound	Encapsulation	SiO2	60676-86-0	69.1013	83.5000%	388,943	38.8943%
		Crystalline Silica	14808-60-7	4.1378	5.0000%	23,290	2.3290%
		Metal OH		2.4827	3.0000%	13,974	1.3974%
		Phenol Resin	-----	3.3102	4.0000%	18,632	1.8632%
		Epoxy Resin	-----	3.3102	4.0000%	18,632	1.8632%
		Carbon Black	1333-86-4	0.4138	0.5000%	2,329	0.2329%
Package Weight (mg):				177.6643	% Total:		100.0000

Note 1: Qualification reports are available at [www.cypress.com](http://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.

#### B4. MATERIAL COMPOSITION (Note 3)

##### USING COPPER WIRE AND SUMITOMO MOLD COMPOUND

Material	Purpose of Use	Substance Composition	CAS Number	Weight by mg	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Lead Frame	Base material	Copper	7440-50-8	74.3354	97.4100%	419,048	41.9048%
		Iron	7439-89-6	1.8315	2.4000%	10,325	1.0325%
		Phosphorous	7723-14-0	0.0534	0.0700%	301	0.0301%
		Zinc	7440-66-6	0.0916	0.1200%	516	0.0516%
Lead Finish	External Plating	Nickel	7440-02-0	1.1468	96.5239%	6,465	0.6465%
		Palladium	7440-05-3	0.0206	1.7339%	116	0.0116%
		Gold	7440-57-5	0.0207	1.7423%	117	0.0117%
Die Attach	Adhesive	Ag	7440-22-4	1.0642	73.9953%	5,999	0.5999%
		Carbocyclic Acrylate	-----	0.2876	19.9972%	1,621	0.1621%
		Bismaleimide Resin	-----	0.0288	2.0025%	162	0.0162%
		Additive	-----	0.0288	2.0025%	162	0.0162%
		Acrylate ester	-----	0.0288	2.0025%	162	0.0162%
Die	Circuit	Silicon	7440-21-3	20.1341	100.0000%	113,501	11.3501%
Wire	Interconnect	Copper	7440-50-8	1.5509	100.0000%	8,743	0.8743%
Mold Compound	Encapsulation	SiO2	60676-86-0	67.3640	87.7500%	379,748	37.9748%
		Phenol Resin	-----	3.8384	5.0000%	21,638	2.1638%
		Epoxy Resin	-----	5.3738	7.0000%	30,293	3.0293%
		Carbon Black	1333-86-4	0.1919	0.2500%	1,082	0.1082%
Package Weight (mg):				177.3913	% 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	<5.0	<5.0	CoA-COVT-R
	Carrier tape	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-CART-R
	Plastic Reel	< 2.0	< 2.0	< 2.0	< 2.0	<0.0005	<0.0005	CoA-PLRL-R
Tray	Tray	< 2.0	< 2.0	< 2.0	< 2.0	<5.0	<5.0	CoA-TRAY-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 5: Advanced Semiconductor Engineering Taiwan (ASET)  
Package Qualification Report # 111816, 114906 (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-LT68-ASET
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 Naphthalenes	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](http://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.

**B1. MATERIAL COMPOSITION (Note 3)**

**USING GOLD WIRE**

Material	Purpose of Use	Substance Composition	CAS Number	Weight by (mg)	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Lead Frame	Base material	Copper	7440-50-8	76.8582	97.4000%	451310	45.1311%
		Iron	7439-89-6	1.8938	2.4000%	11121	1.1121%
		Zinc	7440-66-6	0.1184	0.1500%	695	0.0695%
		Phosphorus	7723-14-0	0.0395	0.0500%	232	0.0232%
Lead Finish	External Plating	Nickel	7440-02-0	1.0194	94.3900%	5986	0.5986%
		Palladium	7440-05-3	0.0476	4.4100%	280	0.0280%
		Gold	7440-57-5	0.0130	1.2000%	76	0.0076%
Die Attach	Adhesive	Silver	7440-22-4	1.4070	70.0000%	8262	0.8262%
		Acrylic Resin	-----	0.1508	7.5000%	885	0.0885%
		Polybutadiene derivative	-----	0.1859	9.2500%	1092	0.1092%
		Butadiene copolymer	-----	0.0704	3.5000%	413	0.0413%
		Acrylate	-----	0.1508	7.5000%	885	0.0885%
		Peroxide	-----	0.0201	1.0000%	118	0.0118%
		Additive	-----	0.0251	1.2500%	148	0.0148%
Die	Circuit	Silicon	7440-21-3	7.3000	100.0000%	42866	4.2866%
Wire	Interconnect	Gold	7440-57-5	0.9999	99.9900%	5871	0.5871%
		Ion Impurities	-----	0.0001	0.0100%	1	0.0001%
Mold Compound	Encapsulation	Epoxy Resin A	-----	3.6000	4.5000%	21139	2.1139%
		Epoxy Resin B	-----	2.4000	3.0000%	14093	1.4093%
		Phenol Resin	-----	5.2800	6.6000%	31004	3.1004%
		Carbon Black	1333-86-4	0.4000	0.5000%	2349	0.2349%
		Silica Fused	60676-86-0	68.3200	85.4000%	401174	40.1174%
Package Weight (mg):				170.0300	% Total:		100.0000

Note 1: Qualification reports are available at [www.cypress.com](http://www.cypress.com). Access them by doing a Search on the Report #.

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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 (Note 3)

### USING COPPER WIRE

Material	Purpose of Use	Substance Composition	CAS Number	Weight by (mg)	% weight of substance per Homogeneous material	PPM	% weight of substance per package
Lead Frame	Base material	Copper	7440-50-8	91.5593	97.3000	523,322	52.3322
		Iron	7439-89-6	2.3055	2.4500	13,177	1.3177
		Zinc	7440-66-6	0.1506	0.1600	861	0.0861
		Phosphorus	7723-14-0	0.0847	0.0900	484	0.0484
Lead Finish	External Plating	Nickel	7440-02-0	1.2157	94.3880	6,949	0.6949
		Palladium	7440-05-3	0.0568	4.4120	325	0.0325
		Gold	7440-57-5	0.0155	1.2000	88	0.0088
Die Attach	Adhesive	Silver	7440-22-4	1.1410	70.0000	6,522	0.6522
		Acrylic Resin	-----	0.1223	7.5000	699	0.0699
		Polybutadiene derivative	-----	0.1508	9.2500	862	0.0862
		Butadiene copolymer	-----	0.0571	3.5000	326	0.0326
		Acrylate	-----	0.1223	7.5000	699	0.0699
		Peroxide	-----	0.0163	1.0000	93	0.0093
		Additive	-----	0.0204	1.2500	116	0.0116
Die	Circuit	Silicon	7440-21-3	13.9000	100.0000	79,447	7.9447
Wire	Interconnect	Copper	7440-50-8	0.4200	100.0000	2,400	0.2400
Mold Compound	Encapsulation	Epoxy Resin A	-----	2.8629	4.5000	16,363	1.6363
		Epoxy Resin B	-----	1.9068	3.0000	10,909	1.0909
		Phenol Resin	-----	4.1989	6.6000	24,000	2.4000
		Carbon Black	1333-86-4	0.3181	0.5000	1,818	0.1818
		Silica Fused	60676-86-0	54.3315	85.4000	310,540	31.0540
Package Weight (mg):				174.9565	% 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.

## **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	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	CoA-COVT-R
	Carrier tape	<5.0	<5.0	<5.0	<10.0	<50.0	<45.0	CoA-CART-R
	Plastic Reel	< 5.0	< 5.0	< 5.0	< 10.0	<50.0	<45.0	CoA-PLRL-R
Tray	Tray	< 5.0	< 5.0	< 5.0	< 10.0	<50.0	<45.0	CoA-TRAY-R CoA-TRAY-M
Others	Shielding bag	<2 .0	<2.0	<2.0	<2.0	<5.0	<5.0	CoA-SBAG –R CoA-SBAG –M

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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: 68L - QFN 8X8X1.0MM (SAW VERSION) PB-FREE PACKAGE MATERIAL DECLARATION DATASHEET  
Document Number: 001-17657

Rev.	ECN No.	Orig. of Change	Description of Change
**	1362383	EBZ	Initial spec release.
*A	2600097	DPT	Added Assembly site 2 and change package thickness from 0.9 to 1.0mm per POD#001-09618. Update spec title to 68L – QFN 8X8X1.0 mm (Saw Version) PB- Free Package PMDD
		DCON	Changed CML to WEB in distribution list.
*B	3040449	HLR	Removed tube type on Indirect Material table.
*C	3113486	MLA	Add assembly site 3.
*D	3247365	JARG	Added Assembly Site 4 – CML RA Change category from Quality Standard to PMDD Category
*E	3414374	HLR	Updated the material composition table to reflect 4 decimal places on values.
*F	3485534	CMG	Added Package Weight Site 4 – B2 Added QTP# 114407 on Assembly Site 4 Added B2 material composition on Assembly Site 4
*G	3533023	COPI	Added Assembly Site 5 – Autoline RA Copper wire qualification. Reference QTP # 120206.
*H	3599270	JARG	Added Assembly Site 6 - ASE Assembled (Assembly Sites 2 and 3) from Spec 001-08151 in reference to QTPs 111816 and 114906 which reflects 8x8x1.0mm package dimension Updated the material composition table for Assembly Site 6 – B1 to reflect four decimal places on values.
*I	4052508	YUM	Added assembly site name in the Assembly heading in site 1, 2, 3, 4 and 5. Changed assembly code to assembly site name in site 1, 2, 3, 4 and 5. Consolidate material composition in one assembly site. 1. CML 2. ASET

Distribution: WEB

Posting: None

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