

iChip™ CO2064/48LI-3

RoHS Certificate of Compliance

OVERVIEW

The 64-lead LQFP package is compliant with the RoHS and JIG requirements. Compliance is guaranteed provided that the appropriate part number is ordered.

Package Code	AL
Package Description	64-Lead, 10x10x1.4mm Body, Plastic Low profile Quad Flat Pack (LQFP)
Max Reflow Temperature	260 Celsius
JESD97 Category	e3

BANNED SUBSTANCES

The European Union passed Directive 2002/95/EC on January 27, 2003, that defines the Restriction of the use of certain Hazardous Substances in electrical and electromagnetic equipment (RoHS).

The member companies that comprise EIA/JIG/JGPSSI developed JIG-101 in April 2005 to track and disclose specific information about the material composition of products to legal and market requirements. The Level A list is composed of materials and substances when used in products that are subject to currently enacted legislation. The Level B list is composed of materials and substances that the electrical and electronic equipment industry has determined relevant for disclosure.

International:

USA:

Material/Substance	RoHS/JIG	Material Mass (g)	Material Concentration (ppm)
Cadmium	RoHS	0	n/a
Hexavalent Chromium	RoHS	0	n/a
Lead	RoHS	0	n/a
Mercury	RoHS	0	n/a
Polybrominated Biphenyls (PBB)	RoHS	0	n/a
Polybrominated Diphenyl Ethers (PBDE)	RoHS	0	n/a
Asbestos	JIG Level A	0	n/a
Certain Azo Colorants	JIG Level A	0	n/a
Cadmium and Cadmium Compounds	JIG Level A	0	n/a
Hexavalent Chromium and Hexavalent Chromium Compounds	JIG Level A	0	n/a
Lead and Lead Compounds	JIG Level A	0	n/a
Mercury and Mercury Compounds	JIG Level A	0	n/a
Ozone Depleting Substances (Class I and II)	JIG Level A	0	n/a
Polybrominated Biphenyls (PBB)	JIG Level A	0	n/a
Polybrominated Diphenyl Ethers (PBDE)	JIG Level A	0	n/a
Polychlorinated Biphenyls (PCB)	JIG Level A	0	n/a
Polychlorinated Naphthalenes	JIG Level A	0	n/a
Radioactive Substances	JIG Level A	0	n/a
Certain Shortchain Chlorinated Paraffins	JIG Level A	0	n/a
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	JIG Level A	0	n/a
Tributyl Tin Oxide (TBTO)	JIG Level A	0	n/a
Antimony and Antimony Compounds	JIG Level B	0	n/a
Arsenic and Arsenic Compounds	JIG Level B	0	n/a
Beryllium and Beryllium Compounds	JIG Level B	0	n/a
Bismuth and Bismuth Compounds	JIG Level B	0	n/a
Brominated Flame Retardants (other than PBB and PBDE)	JIG Level B	0	n/a
Brominated Flame Retardants (other than PBB and PBDE)	JIG Level B	0	n/a
Nickel (external applications only)	JIG Level B	0	n/a
Certain Phthalates	JIG Level B	0	n/a
Selenium and Selenium Compounds	JIG Level B	0	n/a
Polyvinyl Chloride (PVC)	JIG Level B	0	n/a

MATERIAL DECLARATION

Material	Substance	CAS#	Weight (mg) (average)	Homogeneous Material		Package	
				Percentage (average)	ppm (average)	Percentage (average)	ppm (average)
Leadframe	Copper (Cu)	7440-50-8	199,53	96,20%	962 000	43,43%	434 320
	Nickel (Ni)	7440-02-0	6,22	3,00%	30 000	1,35%	13 544
	Silicon (Si)	7440-21-3	1,35	0,65%	6 500	0,29%	2 935
	Magnesium (Mg)	7439-95-4	0,31	0,15%	1 500	0,07%	677
Sub-Total	**	**	207,4	100,00%	1 000 000	45,15%	451 476
Integrated Circuit	Silicon	7440-21-3	14,65	100,00%	1 000 000	3,19%	31 895
Sub-Total	**	**	14,7	100,00%	1 000 000	3,19%	31 895
Die Attach	Silver	7440-22-4	1,21	75,83%	758 294	0,26%	2 628
	Di-ester resin	Trade Secret	0,11	7,11%	71 090	0,02%	246
	Functionalized ester resin	Trade Secret	0,05	2,84%	28 436	0,01%	99
	Polymeric material	Trade Secret	0,05	2,84%	28 436	0,01%	99
	Metal oxide	Trade Secret	0,05	2,84%	28 436	0,01%	99
	Functionalized urethane resin	Trade Secret	0,05	2,84%	28 436	0,01%	99
	Epoxy resin	Trade Secret	0,05	2,84%	28 436	0,01%	99
Cyclo-aliphatic compound	Trade Secret	0,05	2,84%	28 436	0,01%	99	
Sub-Total	**	**	1,6	100,00%	1 000 000	0,35%	3 465
Bond Wire	Gold (Au)	7440-57-5	1,11	99,99%	999 850	0,24%	2 410
	Ion impurities	**	0,00	0,02%	150	0,00%	0
Sub-Total	**	**	1,1	100,00%	1 000 000	0,24%	2 411
Mold Compound	Silica Fused	60676-86-0	197,38	87,02%	870 206	42,96%	429 634
	Epoxy resin	Trade Secret	11,15	4,92%	49 164	2,43%	24 273
	Phenol resin	Trade Secret	10,04	4,42%	44 248	2,18%	21 846
	Carbon black	1333-86-4	0,45	0,20%	1 967	0,10%	971
	Others	Trade Secret	7,81	3,44%	34 415	1,70%	16 991
Sub-Total	**	**	226,8	100,00%	1 000 000	49,37%	493 715
Terminal Plating	Tin (Sn)	7440-31-5	7,83	100,00%	1 000 000	1,70%	17 038
Sub-Total	**	**	7,8	100,00%	1000 000	1,70%	17 038
Total			459,4			100,0%	1 000 000

COMMENTS

- Reliability qualification reports are available upon request.
- Third-party testing for RoHS substances has been completed on the homogeneous material level and is available upon request.
- Materials and/or substances not listed in the material declaration are considered not present in the product or not detectable trace levels.
- In order to report full 100 percent material declaration, some materials and/or substances have been rounded to the nearest 0.1 percent.
- Package material declarations are calculated using a combination of Material Safety Data Sheets (MSDS), material analysis testing, industry standard specifications and engineering calculations.

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