

**PART INFORMATION**

Mfg Item Number	MC13892BJVLR2
Mfg Item Name	MAPBGA 186 12*12*0.8P0.8

**SUPPLIER**

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2018-05-18
Response Document ID	5385K00148D006A1.25
Contact Name	Freescale Semiconductor Inc
Contact Title	Product Technical Support
Contact Phone	1-800-521-6274
Contact Email	support@freescale.com
Authorized Representative	Daniel Binyon
Representative Title	EPP Customer Response
Representative Phone	512-895-3406
Representative Email	eppanlst@freescale.com
URL for Additional Information	www.freescale.com

**DECLARATION**

EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e2
EU RoHS Exemption(s)	

**MANUFACTURING**

Mfg Item Number	MC13892BJVLR2
Mfg Item Name	MAPBGA 186 12*12*0.8P0.8
Version	ALL
Weight	0.375800
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	3
Peak Processing Temperature	260 C
Max Time at Peak Temperature	40 seconds
Number of Processing Cycles	3

RoHS	
RoHS Directive	2011/65/EU
RoHS Definition	RoHS Definition: Quantity limit of 0.1% by mass (1000 PPM) of homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material of Cadmium
RoHS Legal Definition	Please indicate whether any homogeneous material (as defined by the RoHS Directive, EU 2011/65/EU and implemented by the laws of the European Union member states) of the part(s) identified on this form contains lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and/or polybrominated diphenyl ethers (each a RoHS restricted substance) in excess of the applicable quantity limit identified below. If a homogeneous material within the part(s) contains a RoHS restricted substance in excess of an applicable quantity limit, please indicate below which, if any, RoHS exemption you believe may apply. If the part is an assembly with lower level components, the declaration shall encompass all such components. Supplier certifies that it gathered the information it provides in this form using appropriate methods to ensure its accuracy and that such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products with European Union member state laws that implement the RoHS Directive. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part(s), and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part(s), the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Suppliers liability and the Companys remedies for issues that arise regarding information the Supplier provides in this form. In the absence of such written agreement, the warranty rights and/or remedies of Suppliers Standard Terms and Conditions of Sale applicable to such part(s) shall apply.
RoHS Declaration	1 - Item(s) do not contain RoHS restricted substances per the definition above
Supplier Acceptance	Accepted
Signature	Daniel Binyon
Exemption List Version	2012/51/EU
List of Freescale Accepted Exemptions	<p>6(a) : Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight</p> <p>6(b) : Lead as an alloying element in aluminium containing up to 0.4% lead by weight</p> <p>6(c) : Copper alloy containing up to 4% lead by weight</p> <p>7(a) : Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)</p> <p>7(b) : Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications</p> <p>7(c)-I : Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound</p> <p>7(c)-II : Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher</p> <p>7(c)-III : Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC</p> <p>7(c)-IV : Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors</p> <p>15 : Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages</p>

MATERIAL COMPOSITION

Homogeneous Material	Weight	SubstanceClass	Substance	CAS	Exemption	SubstanceWeight	UoM	SubPart PPM	SubPart%	ARTICLEPPM	ARTICLE%
Non-Conductive Epoxy/Adhesive	0.006						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.00045	g	75000	7.5	1197	0.1197
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0012	g	200000	20	3193	0.3193
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.00045	g	75000	7.5	1197	0.1197
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0012	g	200000	20	3193	0.3193
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.0027	g	450000	45	7184	0.7184
Solder Balls - Pb Free, Sn/Ag	0.0571						g				
Solder Balls - Pb Free, Sn/Ag		Metals	Aluminum, metal	7429-90-5		0.0000183	g	32	0.0032	4	0.0004
Solder Balls - Pb Free, Sn/Ag		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.00000714	g	125	0.0125	18	0.0018
Solder Balls - Pb Free, Sn/Ag		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.00000428	g	75	0.0075	11	0.0011
Solder Balls - Pb Free, Sn/Ag		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.00001073	g	188	0.0188	28	0.0028
Solder Balls - Pb Free, Sn/Ag		Cadmium/Cadmium Compounds	Cadmium	7440-43-9		0.00000074	g	13	0.0013	1	0.0001
Solder Balls - Pb Free, Sn/Ag		Metals	Copper, metal	7440-50-8		0.0000036	g	63	0.0063	9	0.0009
Solder Balls - Pb Free, Sn/Ag		Metals	Gold, metal	7440-57-5		0.0000036	g	63	0.0063	9	0.0009
Solder Balls - Pb Free, Sn/Ag		Metals	Indium, metal	7440-74-6		0.0000036	g	63	0.0063	9	0.0009
Solder Balls - Pb Free, Sn/Ag		Solvents, additives, and other materials	Sulfur	7704-34-9		0.0000004	g	7	0.0007	1	0.0001
Solder Balls - Pb Free, Sn/Ag		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.0000036	g	63	0.0063	9	0.0009
Solder Balls - Pb Free, Sn/Ag		Metals	Iron, metal	7439-89-6		0.00000714	g	125	0.0125	18	0.0018
Solder Balls - Pb Free, Sn/Ag		Lead/Lead Compounds	Lead	7439-92-1		0.00001787	g	313	0.0313	47	0.0047
Solder Balls - Pb Free, Sn/Ag		Nickel (external applications only)	Nickel	7440-02-0		0.00000183	g	32	0.0032	4	0.0004
Solder Balls - Pb Free, Sn/Ag		Metals	Silver, metal	7440-22-4		0.00199861	g	35002	3.5002	5318	0.5318
Solder Balls - Pb Free, Sn/Ag		Metals	Tin, metal	7440-31-5		0.05503395	g	963817	96.3817	146444	14.6444
Solder Balls - Pb Free, Sn/Ag		Metals	Zinc, metal	7440-66-6		0.00000108	g	19	0.0019	2	0.0002
Silicon Semiconductor Die	0.0293						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.000586	g	20000	2	1559	0.1559
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.028714	g	980000	98	76407	7.6407
Die Encapsulant, Halogen-free	0.1879						g				
Die Encapsulant, Halogen-free		Metals	Other aluminum compounds	-		0.005637	g	30000	3	15000	1.5
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.001879	g	10000	1	5000	0.5
Die Encapsulant, Halogen-free		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.005637	g	30000	3	15000	1.5
Die Encapsulant, Halogen-free		Plastics/polymers	Other phenolic resins	-		0.005637	g	30000	3	15000	1.5
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	60676-86-0		0.159715	g	850000	85	425022	42.5022
Die Encapsulant, Halogen-free		Plastics/polymers	Other Non-halogenated Epoxy resins	-		0.009395	g	50000	5	25000	2.5
Bonding Wire, P/Cu	0.0029						g				
Bonding Wire, P/Cu		Metals	Copper, metal	7440-50-8		0.00282169	g	972995	97.2995	7508	0.7508
Bonding Wire, P/Cu		Metals	Palladium, metal	7440-05-3		0.00007831	g	27005	2.7005	208	0.0208
Organic Substrate	0.0926						g				
Organic Substrate		Solvents, additives, and other materials	Other aromatic amines and their salts	-		0.00001546	g	167	0.0167	41	0.0041
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.00052106	g	5627	0.5627	1386	0.1386
Organic Substrate		Metals	Copper, metal	7440-50-8		0.04092041	g	441905	44.1905	108888	10.8888
Organic Substrate		Plastics/polymers	Phenolic Polymer Resin, Epikote 155	9003-36-5		0.00162096	g	17505	1.7505	4313	0.4313
Organic Substrate		Plastics/polymers	Other Epoxy resins	-		0.00387475	g	41844	4.1844	10310	1.031
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00123362	g	13322	1.3322	3282	0.3282
Organic Substrate		Metals	Talc	14807-96-6		0.00026243	g	2834	0.2834	698	0.0698
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00962642	g	103957	10.3957	25615	2.5615
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.02205649	g	238191	23.8191	58692	5.8692
Organic Substrate		Glass	Silicon dioxide	7631-86-9		0.0028456	g	30730	3.073	7572	0.7572
Organic Substrate		Solvents, additives, and other materials	Other Aromatic carbonyl compounds	-		0.0000976	g	1054	0.1054	259	0.0259
Organic Substrate		Plastics/polymers	Triazine	25722-66-1		0.00162096	g	17505	1.7505	4313	0.4313
Organic Substrate		Metals	Aluminum Hydroxide	21645-51-2		0.00403856	g	43613	4.3613	10746	1.0746
Organic Substrate		Metals	Copper phthalocyanine	147-14-8		0.00000463	g	50	0.005	12	0.0012
Organic Substrate		Solvents, additives, and other materials	Quinacridone pigment	1047-18-1		0.00000463	g	50	0.005	12	0.0012
Organic Substrate		Solvents, additives, and other materials	3-methoxy-3-methyl-1-butyl acetate	103429-90-9		0.00057125	g	6169	0.6169	1520	0.152
Organic Substrate		Solvents, additives, and other materials	Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane	105391-33-1		0.00162096	g	17505	1.7505	4313	0.4313
Organic Substrate		Plastics/polymers	Epoxy Resin	115254-47-2		0.00185958	g	17822	1.7822	4416	0.4416
Organic Substrate		Solvents, additives, and other materials	1,2,4-Trimethylbenzene	95-63-6		0.00000463	g	50	0.005	12	0.0012

## LINKS

MCD LINK	
NXP website	<a href="http://www.nxp.com">http://www.nxp.com</a>
GENERAL ENVIRONMENTAL COMPLIANCE LINKS	
RoHS signed letter	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-ROHS-DECLARATION.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-ROHS-DECLARATION.pdf</a>
China RoHS	<a href="http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/china-rohs:ENV_CHINA_ROHS_STRATEGY">http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/china-rohs:ENV_CHINA_ROHS_STRATEGY</a>
REACH signed letter	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-REACH-STATEMENT.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-REACH-STATEMENT.pdf</a>
ELV signed letter	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-ELV-STATEMENT.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-ELV-STATEMENT.pdf</a>
Conflict Minerals statement	<a href="http://www.nxp.com/files/corporate/doc/support_info/NXP-STATEMENT-CONFLICT-MINERALS.pdf">http://www.nxp.com/files/corporate/doc/support_info/NXP-STATEMENT-CONFLICT-MINERALS.pdf</a>
NXP ENVIRONMENTAL INFORMATION	
Environmental Compliance website	<a href="http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization:ABUENVPRFPRDX">http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization:ABUENVPRFPRDX</a>
FAQ	<a href="http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/eco-product-faqs:ENVIRON_FAQ">http://www.nxp.com/about/corporate-responsibility/environmental-compliance-organization/eco-product-faqs:ENVIRON_FAQ</a>
Technical Service Request	<a href="http://www.nxp.com/support/sales-and-support:SUPPORTHOME">http://www.nxp.com/support/sales-and-support:SUPPORTHOME</a>
LINKS TO BLANK IPC1752 FORMS	
Blank IPC1752 v1.1 Form	<a href="http://www.NXP.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf">http://www.NXP.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf</a>

IPC1752 XML LINKS

[http://www.freescale.com/mcdfs/MC13892BJVLR2\\_IPC1752\\_v11.xml](http://www.freescale.com/mcdfs/MC13892BJVLR2_IPC1752_v11.xml)

[http://www.freescale.com/mcdfs/MC13892BJVLR2\\_IPC1752A.xml](http://www.freescale.com/mcdfs/MC13892BJVLR2_IPC1752A.xml)