

PART INFORMATION

Mfg Item Number	MCF5281CVM66
Mfg Item Name	MAPBGA 256 17*17*1.6P1.0

SUPPLIER

Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2018-05-19
Response Document ID	5246K00022D090A1.56
Contact Name	Freescale Semiconductor Inc
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DECLARATION

EU RoHS	Yes
Pb Free	Yes
HalogenFree	Yes
Plating Indicator	e1
EU RoHS Exemption(s)	

MANUFACTURING

Mfg Item Number	MCF5281CVM66
Mfg Item Name	MAPBGA 256 17*17*1.6P1.0
Version	ALL
Weight	0.785300
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	0.0105						g				
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.0007875	g	75000	7.5	1002	0.1002
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Crosslinked acrylate polymer	25767-43-5		0.0021	g	200000	20	2674	0.2674
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Other polymers	-		0.0007875	g	75000	7.5	1002	0.1002
Non-Conductive Epoxy/Adhesive		Plastics/polymers	Proprietary Material-Other polymers	-		0.0021	g	200000	20	2674	0.2674
Non-Conductive Epoxy/Adhesive		Glass	Silica, vitreous	60676-86-0		0.004725	g	450000	45	6016	0.6016
Solder Balls - Lead Free	0.1304						g				
Solder Balls - Lead Free		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.0000091	g	7	0.0007	1	0.0001
Solder Balls - Lead Free		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.0000091	g	7	0.0007	1	0.0001
Solder Balls - Lead Free		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.0000065	g	5	0.0005	0	0
Solder Balls - Lead Free		Metals	Copper, metal	7440-50-8		0.0009128	g	7000	0.7	1162	0.1162
Solder Balls - Lead Free		Metals	Iron, metal	7439-89-6		0.0000235	g	18	0.0018	2	0.0002
Solder Balls - Lead Free		Lead/Lead Compounds	Lead	7439-92-1		0.0000073	g	56	0.0056	9	0.0009
Solder Balls - Lead Free		Metals	Silver, metal	7440-22-4		0.00490304	g	37600	3.76	6243	0.6243
Solder Balls - Lead Free		Metals	Tin, metal	7440-31-5		0.12457204	g	955307	95.5307	158629	15.8629
Silicon Semiconductor Die	0.0933						g				
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%)	-		0.001866	g	20000	2	2376	0.2376
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.091434	g	980000	98	116431	11.6431
Die Encapsulant, Halogen-free	0.342						g				
Die Encapsulant, Halogen-free		Metals	Other aluminum compounds	-		0.01026	g	30000	3	13065	1.3065
Die Encapsulant, Halogen-free		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.00342	g	10000	1	4355	0.4355
Die Encapsulant, Halogen-free		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.01026	g	30000	3	13065	1.3065
Die Encapsulant, Halogen-free		Plastics/polymers	Other phenolic resins	-		0.01026	g	30000	3	13065	1.3065
Die Encapsulant, Halogen-free		Glass	Silica, vitreous	60676-86-0		0.2907	g	850000	85	370192	37.0192
Die Encapsulant, Halogen-free		Plastics/polymers	Other Non-halogenated Epoxy resins	-		0.0171	g	50000	5	21775	2.1775
Organic Substrate	0.2073						g				
Organic Substrate		Metals	Barium sulfate	7727-43-7		0.01408334	g	67937	6.7937	17933	1.7933
Organic Substrate		Metals	Copper, metal	7440-50-8		0.04193099	g	202272	20.2272	53394	5.3394
Organic Substrate		Plastics/polymers	Epikote 862	28064-14-4		0.01763307	g	85065	8.5065	22455	2.2455
Organic Substrate		Plastics/polymers	Formaldehyde, polymer with 2-methylphenol, glycidyl ether	64425-89-4		0.02181915	g	105254	10.5254	27784	2.7784
Organic Substrate		Metals	Gold, metal	7440-57-5		0.00079565	g	3843	0.3843	1014	0.1014
Organic Substrate		Nickel (external applications only)	Nickel	7440-02-0		0.00622169	g	30013	3.0013	7922	0.7922
Organic Substrate		Plastics/polymers	Phenol, polymer with formaldehyde	9003-35-4		0.00962929	g	46451	4.6451	12261	1.2261
Organic Substrate		Glass	Fibrous-glass-wool	65997-17-3		0.05897997	g	284515	28.4515	75105	7.5105
Organic Substrate		Glass	Silicon dioxide	7631-86-9		0.00505543	g	24387	2.4387	6437	0.6437
Organic Substrate		Solvents, additives, and other materials	Other Aromatic carbonyl compounds	-		0.0226123	g	10908	1.0908	2879	0.2879
Organic Substrate		Metals	Aluminum Hydroxide	21645-51-2		0.0288829	g	139355	13.9355	36786	3.6786
Bonding Wire, PdCu	0.0018						g				
Bonding Wire, PdCu		Metals	Copper, metal	7440-50-8		0.0017658	g	981000	98.1	2248	0.2248
Bonding Wire, PdCu		Metals	Gold, metal	7440-57-5		0.0000018	g	1000	0.1	2	0.0002
Bonding Wire, PdCu		Metals	Palladium, metal	7440-05-3		0.0000324	g	18000	1.8	41	0.0041

LINKS

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

IPC1752 XML LINKS

http://www.freescale.com/mcdfs/MCF5281CVM66_IPC1752_v11.xml

http://www.freescale.com/mcdfs/MCF5281CVM66_IPC1752A.xml